UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2017

Or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____

Commission file number: 001-37524

vTv Therapeutics Inc.

(Exact name of registrant as specified in its charter)

Delaware	**47-3916571**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
4170 Mendenhall Oaks Pkwy	
High Point, NC	**27265**
(Address of principal executive offices)	**(Zip Code)**

(336) 841-0300

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each Class	**Name of each exchange on which registered**
Class A Common Stock (Par Value $0.01)	NASDAQ Global Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes ☐ No ☒

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the Registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒ (Do not check if a smaller reporting company)	Smaller reporting company	☐
Emerging growth company	☒		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☒

Indicate by check mark if the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the registrant's Common Stock held by non-affiliates on June 30, 2017 (based on the closing sale price as reported on the NASDAQ) was $33,577,419.

Indicate the number of shares outstanding of each of the Registrant's classes of common stock, as of February 23, 2018.

Class of Stock	Shares Outstanding
Class A common stock, par value $0.01 per share	9,693,254
Class B common stock, par value $0.01 per share	23,119,246

vTv THERAPEUTICS INC. AND SUBSIDIARIES
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FOR THE FISCAL YEAR ENDED DECEMBER 31, 2017

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

As used in this Annual Report on Form 10-K, the "Company", the "Registrant", "we" or "us" refer to vTv Therapeutics Inc., "vTv LLC" refers to vTv Therapeutics LLC, "vTvx Holdings I" or "TTP" refer to vTvx Holdings I LLC (formerly known as TransTech Pharma, LLC), "vTvx Holdings II" or "HPP" refer to vTvx Holdings II LLC (formerly known as High Point Pharmaceuticals, LLC) and "vTv Therapeutics Holdings" refers to vTv Therapeutics Holdings LLC. The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our financial statements and related notes that appear elsewhere in this report. In addition to historical financial information, the following discussion contains forward-looking statements that reflect our plans, estimates, assumptions and beliefs. Our actual results could differ materially from those discussed in the forward-looking statements. Factors that could cause or contribute to these differences include those discussed below and elsewhere in this report under "Part I—Item 1A, Risk Factors." Forward-looking statements include information concerning our possible or assumed future results of operations, business strategies and operations, financing plans, potential growth opportunities, potential market opportunities, potential results of our drug development efforts or trials, and the effects of competition. Forward-looking statements include all statements that are not historical facts and can be identified by terms such as "anticipates," "believes," "could," "seeks," "estimates," "expects," "intends," "may," "plans," "potential," "predicts," "projects," "should," "will," "would" or similar expressions and the negatives of those terms. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Also, forward-looking statements represent our management's plans, estimates, assumptions and beliefs only as of the date of this report. Except as required by law, we assume no obligation to update these forward-looking statements publicly or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

PART I

ITEM 1. BUSINESS

Overview

We are a clinical-stage biopharmaceutical company engaged in the discovery and development of orally administered small molecule drug candidates to fill significant unmet medical needs. We have a powerful pipeline of clinical drug candidates, led by our programs for the treatment of mild Alzheimer's disease ("AD") and diabetes. Our drug candidate for the treatment of AD, *azeliragon* (*TTP488*), is an orally administered, small molecule antagonist targeting the receptor for advanced glycation endproducts ("RAGE"), for which we have successfully completed the enrollment of both sub-studies in a Phase 3 clinical trial (the "STEADFAST Study") under a Food and Drug Administration ("FDA") agreed Special Protocol Assessment ("SPA"). Our diabetes drug candidates include *TTP399*, an orally administered, liver-selective glucokinase activator ("GKA"), for which we have completed a Phase 2b clinical trial in type 2 diabetes (the "AGATA Study") in August 2016, and *TTP273*, an orally administered, non-peptide agonist that targets the glucagon-like peptide-1 receptor ("GLP-1r"), for which we have completed a Phase 2 clinical trial in type 2 diabetes (the "LOGRA Study") in December 2016. We have also initiated an adaptive Phase 1b/2 study to explore the effects of *TTP399* in type 1 diabetics in partnership with JDRF International ("JDRF"). We have two additional programs in various stages of preclinical and clinical development for the treatment of inflammatory disorders.

Our Pipeline

The following table summarizes our current leading drug candidates and their respective stages of development:

PROGRAM	PRECLINICAL	PHASE 1	PHASE 2	PHASE 3	STATUS	MILESTONES
Alzheimer's Disease						
Azeliragon (TTP488): RAGE Antagonist					Part A enrolled Part B enrolled	April 2018 (Part A) Early 2019 (Part B)
Type 2 Diabetes						
TTP399: Glucokinase Activator					Phase 2b study completed	Reported Positive Results August 2016
TTP273: Oral GLP-1r Agonist					Multi-regional phase 2b study planned	Licensed China/Pacific Rim rights to Huadong Pharmaceuticals
Type 1 Diabetes						
TTP399: Glucokinase Activator					Adaptive phase 1B/2 study ongoing	Collaboration with JDRF Phase 1b results in early 2018
Other Programs						
HPP593: PPAR-δ Agonist					Phase 1	Licensed to Reneo Pharmaceuticals
HPP737: PDE4 Inhibitor					Phase 1	Partnering discussions ongoing
Nrf2 Activators/ Bach1 Inhibitors					Phase 1	Lead candidate HPP971 in phase 1, several other compounds in pre-clinical

Each of our most advanced drug candidates is the subject of patent and patent applications for composition of matter and method of use in major markets worldwide. Our patents in the U.S. are expected to provide us with composition of matter protection through 2029 for *azeliragon*, 2030 for *TTP399* and 2035 for *TTP273*, in each case, assuming we obtain the maximum possible extensions.

Our Strategy

Our goal is to leverage our powerful pipeline of orally administered, small molecule drug candidates to deliver novel, differentiated therapies to fill significant unmet medical needs. As key components of our strategy, we intend to:

- ***Complete Phase 3 STEADFAST Study and seek regulatory approval of azeliragon as a treatment for patients with mild AD***. We initiated the STEADFAST Study in April 2015 after receiving positive results from an analysis of data collected in our Phase 2b clinical trial of *azeliragon* in mild-to-moderate AD patients. The STEADFAST Study is being conducted under an FDA-agreed SPA and will serve as a registration trial for regulatory approval in the United States, assuming positive results. We have successfully completed the enrollment of both sub-studies of the STEADFAST Study, and we anticipate reporting topline data from sub-study A in April 2018 and from sub-study B in early 2019. If results from the STEADFAST Study are favorable, we expect that we would submit the new drug application ("NDA") for *azeliragon* in the second half of 2019. Additionally, the FDA granted Fast Track designation to *azeliragon* as a potential therapy to treat a serious condition and fill an unmet medical need.
- ***Evaluate strategic collaborations for the commercialization of azeliragon***. We plan to seek strategic collaborations for the commercialization of and marketing of *azeliragon* in the United States and the rest of the world.
- ***Execute upon and seek additional strategic collaborations for the continued development and commercialization of our diabetes programs***. Following the positive topline results from our Phase 2 clinical trials of *TTP399* and *TTP273* in 2016, we entered into certain collaboration agreements to further the development of our diabetes compounds. In connection with these collaboration agreements, we are required to sponsor certain clinical trials to further the development of *TTP399* and *TTP273*. Refer to "Business – License and Research Agreements" for additional details. In addition, we will continue to seek additional strategic collaborations with other pharmaceutical companies for the continued development of these investigational drug candidates as well as their potential commercialization and marketing in the United States and the rest of the world.

- ***Continue development of additional pipeline programs and seek strategic development partners for those programs***. We intend to continue developing our other drug candidates, while simultaneously evaluating strategic collaborations as they may arise.

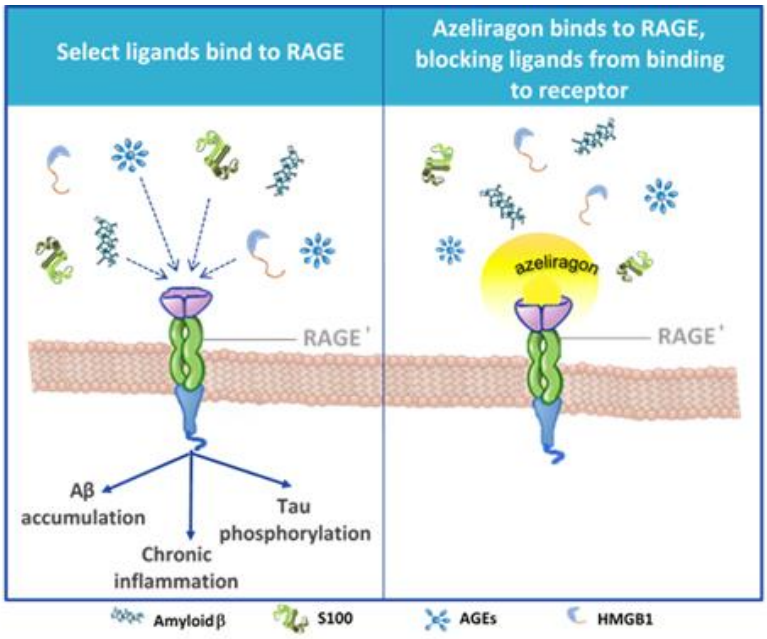
Our Alzheimer's Program – *Azeliragon*

Alzheimer's Disease and the Role of RAGE in its Onset

AD is a progressive neurodegenerative disorder that slowly destroys memory and thinking skills, and eventually the ability to carry out simple tasks. Its symptoms include cognitive dysfunction, memory abnormalities, progressive impairment in activities of daily living and a host of behavioral and neuropsychiatric symptoms. The exact cause of AD is unknown; however, genetic and environmental factors are established contributors. Amyloid Beta ("Aβ") plaques, neurofibrillary tangles of tau protein, and neuroinflammation in the brain are believed to be the main causes of the disease, leading to loss of neuronal connectivity in the brain.

RAGE is an immunoglobulin-like cell surface receptor that is overexpressed in brain tissues of patients with AD. We believe that RAGE is an important cellular cofactor that binds ligands that are implicated in multiple etiologies of AD, including Aβ transport into the brain, the phosphorylation of tau, chronic inflammation, vascular dysfunction, metabolic dysregulation and neurotoxicity. These effects are attenuated following antagonism of the RAGE receptor.

Post-mortem studies in AD patients reveal increased RAGE expression in neuronal, microglial and endothelial cells when compared to similar subjects without AD. Cells around senile plaques express higher levels of RAGE during disease progression. Furthermore, expressed levels of RAGE are correlated with the severity of the disease. The data observed in human AD patients is consistent with the multiple pre-clinical *in-vitro* and *in-vivo* animal models studied by third parties that show RAGE is overexpressed in brain tissue of AD subjects. Taken together, we believe that literature provides substantial support for RAGE inhibition as a validated and promising therapeutic approach in the treatment of AD.



Current Treatments of Alzheimer's Disease and Their Limitations

Currently, there are only two classes of approved therapies for the treatment of symptoms of AD: acetylcholinesterase inhibitors ("AChEIs") and glutamatergic modulators. AChEIs are designed to slow the degradation of acetylcholine, helping to preserve neuronal communication and function temporarily, but do not slow or halt neuronal death. Glutamatergic modulators are designed to block

sustained, low-level activation of the N-methyl-D-aspartate ("NMDA") receptor without inhibiting the normal function of the receptor in memory and cognition, providing temporary symptomatic relief.

The currently available treatments combat the symptoms of AD rather than the underlying cause, or etiology, and as a result, AD continues to progress in these patients despite treatment. Similarly, the use of antidepressants and antipsychotics are often prescribed off-label to treat the symptoms of severe AD when patients suffer from agitation, aggressive behaviors, psychosis and depression. Recent drug candidates under development include those focused on Aβ synthesis or clearance from the brain, the phosphorylation of tau protein, chronic inflammation, vascular dysfunction, metabolic dysregulation and neurotoxicity.

Our Solution: Azeliragon

Azeliragon is an orally administered, small molecule investigational drug candidate that has the potential to be among the first recently-approved FDA AD therapeutics due to its novel mechanism of action of inhibiting RAGE. Additionally, *azeliragon* has been awarded Fast Track designation by the FDA as a potential therapy to treat a serious condition and fill an unmet medical need. We have demonstrated that *azeliragon* is a potent and selective inhibitor of RAGE and, in an analysis of data collected in our Phase 2b clinical trial, *azeliragon* slowed the progression of cognitive decline in mild and mild-to-moderate AD patients. *Azeliragon* has the potential to offer a novel modality in AD therapeutics, and we are not aware of any other clinical-stage drugs targeting RAGE. Because currently approved treatments are focused on symptom relief, we believe that *azeliragon* represents a potential new approach for the treatment of AD. In addition, we believe that in order to successfully treat and combat the physiological progression of AD, an effective treatment must act on multiple causes, or etiologies, of the disease. Unlike development stage treatments that target a singular cause of AD, *azeliragon* is designed to inhibit RAGE, which affects multiple aspects of AD etiology, including Aβ transport into the brain, the phosphorylation of tau, chronic inflammation, vascular dysfunction, metabolic dysregulation and neurotoxicity. To date, we have completed eight Phase 1 and three Phase 2 clinical trials of *azeliragon*.

Ongoing Phase 3 STEADFAST Study

We initiated our Phase 3 clinical trial, the STEADFAST Study, in April 2015 pursuant to an SPA with the FDA. The study is being conducted in the United States and certain English-speaking foreign countries under a single protocol and was designed to enroll 800 mild AD patients in total, divided equally across two independent 400-patient sub-studies, in which each subject receives either a 5 mg/day dose of *azeliragon* or placebo, randomized on a one-to-one basis, added to the standard of care. We have successfully completed the enrollment of both sub-studies. The sub-studies are independently powered to demonstrate statistically significant differences in two co-primary endpoints at month 18. The STEADFAST Study is a randomized, double-blind, parallel group, 18-month trial in patients with mild AD, which is the population that showed greater benefit from *azeliragon* in an analysis of our Phase 2b trial with patients on standard of care of AChEIs and/or memantine. For the purposes of the STEADFAST Study, patients with a Mini-Mental State Examination ("MMSE") score of 21 to 26 are considered to have mild AD. The STEADFAST Study, if successful, will serve as the basis for filing an NDA in the United States and may also serve as a pivotal trial for marketing applications in other jurisdictions. Patients completing the STEADFAST Study may be able to participate in an open-label extension trial until the earlier of the commercial availability of *azeliragon*, if approved, or 24 months from the date of their last visit.

The co-primary endpoints for the STEADFAST Study are the change from baseline in the Alzheimer's Disease Assessment Scale-Cognitive Subscale ("ADAS-COG_{11}") and the Clinical Dementia Rating Scale Sum of Boxes ("CDR-SB") scores. These endpoints are designed to establish efficacy by demonstrating a slowing in the loss of cognition and function in mild AD patients treated with *azeliragon* as compared to placebo. We are evaluating multiple secondary endpoints, including the key secondary endpoint of MRI brain volumetric measures. We believe that MRI imaging for volumetric measures has the potential to demonstrate modification of the underlying disease by *azeliragon*. We anticipate reporting top-line results from sub-study A in April 2018 and sub-study B in early 2019. If results from the STEADFAST Study are favorable, we expect that we would submit an NDA for *azeliragon* in the second half of 2019.

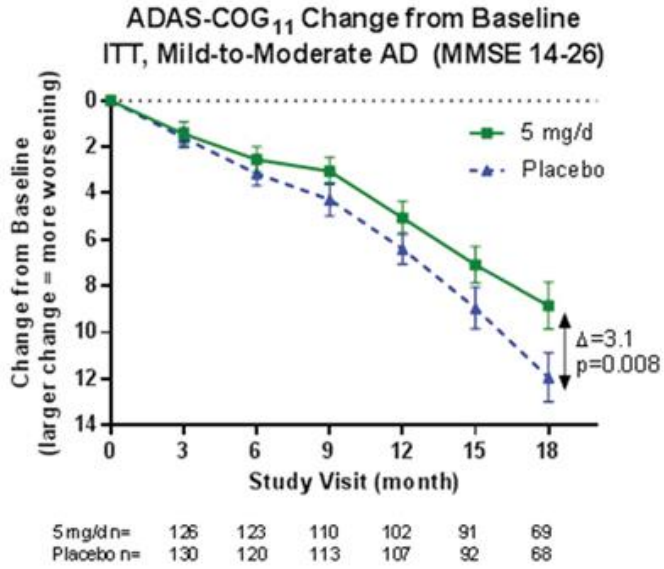
Completed Phase 2b Trial (TTP488-203)

Efficacy in Mild-to-Moderate AD Patients

Our completed Phase 2b clinical trial of *azeliragon*, TTP488-203, was a randomized, double blind, placebo-controlled, 18-month trial assessing the safety and efficacy of *azeliragon* in 399 patients with mild-to-moderate AD, the intent-to-treat ("ITT") population. *Azeliragon* or placebo was added to the standard of care, AChEIs and/or memantine. Patients were randomized to receive an oral dose of 20 mg/day of *azeliragon*, 5 mg/day of *azeliragon* or placebo. Patients in the high dose *azeliragon* arm initially received 60 mg/day of *azeliragon* for six days followed by a daily 20 mg dose, while patients in the low dose arm initially received 15 mg/day of *azeliragon* for six days followed by a 5 mg/day dose. The study was done in partnership with Pfizer and the Alzheimer's Disease Cooperative Study ("ADCS").

The primary endpoint of the study was to impede the progression of AD over 18 months as measured by the change from baseline in ADAS-COG$_{11}$ score. The secondary endpoints included the changes in global, functional, cognitive and behavioral attributes as measured by CDR-SB, the Alzheimer's Disease Cooperative Study Activities of Daily Living ("ADCS-ADL"), MMSE and Neuropsychiatric Inventory ("NPI").

Azeliragon, at the 5 mg/day dose, met its pre-specified ADAS-COG$_{11}$ endpoint demonstrating a statistically significant 3.1 point difference (p = 0.008) versus placebo at 18 months in patients with mild-to-moderate AD. The results of the primary ADAS-COG$_{11}$ endpoint are summarized in the figure below.

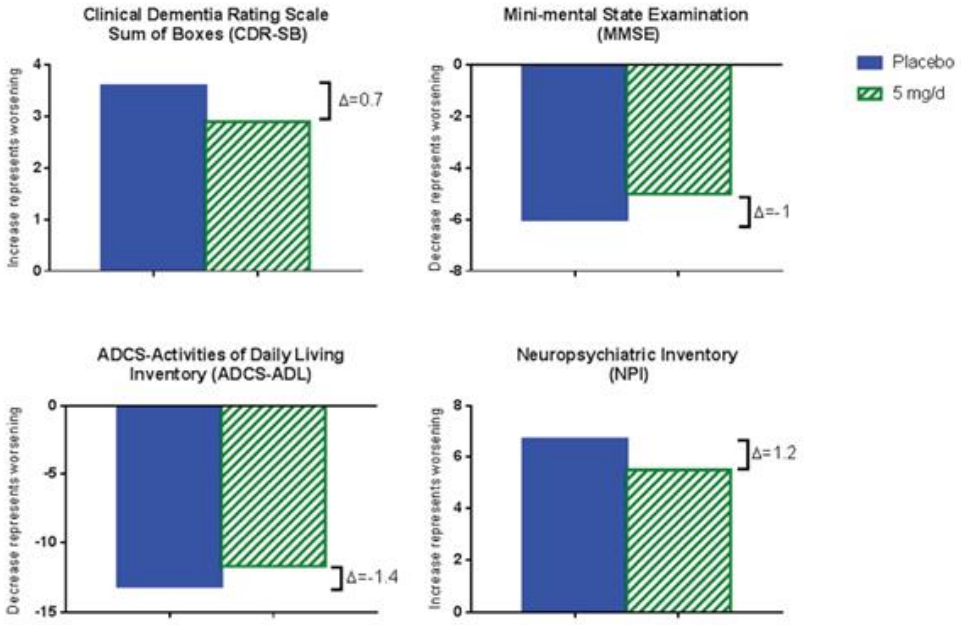


The above analysis utilizes the analysis of covariance, or ANCOVA, to determine statistical significance, with multiple imputation method to handle missing data, as specified in the protocol for the trial. Additional preplanned statistical analyses of the primary endpoint data, including complete cases ANCOVA, last observation carried forward ANCOVA, generalized estimating equations and mixed model repeated measures, demonstrated that, in each analysis, *azeliragon* produces statistically significant differences from placebo on ADAS-COG$_{11}$ ($p<0.05$).

The results for global, functional, cognitive and behavioral secondary endpoints after 18 months were also favorable despite the study not being powered to show significance. In each of the CDR-SB, ADCS-ADL, MMSE and NPI, patients in the 5 mg/day dose arm of *azeliragon* demonstrated numerical improvement compared to the placebo arm. In particular, relative to placebo, the CDR-SB score improved by 0.7, the ADCS-ADL score improved by 1.4, the MMSE score improved by 1.0 and the NPI score improved by 1.2. In addition, the 5 mg/day treatment arm of *azeliragon* exhibited a statistically significant decrease in the incidence of psychiatric adverse events, including a statistically significant decrease in anxiety symptoms relative to the placebo group.

The results of the secondary endpoints in the ITT population are summarized in the following figures, which, in each case, illustrate a potential benefit of *azeliragon* versus placebo.

***Azeliragon* Effects on Global,**
Functional, Behavioral and Cognitive Secondary Endpoints
ITT, Mild-to-Moderate AD (MMSE 14-26)



Prior to the completion of the analyses described above, a pre-specified interim safety analysis was conducted when 50% of subjects had completed the six-month visit. The 5 mg/day and placebo groups had no safety concerns. The high dose group was found to be associated with an increased incidence of confusion, falls and greater ADAS-COG$_{11}$ decline than placebo and was discontinued. The 5 mg/day and placebo groups were allowed to continue without modification after all subjects were re-consented. The cognitive impairment and side effects in the high dose group were demonstrated to be reversible after discontinuing the study drug.

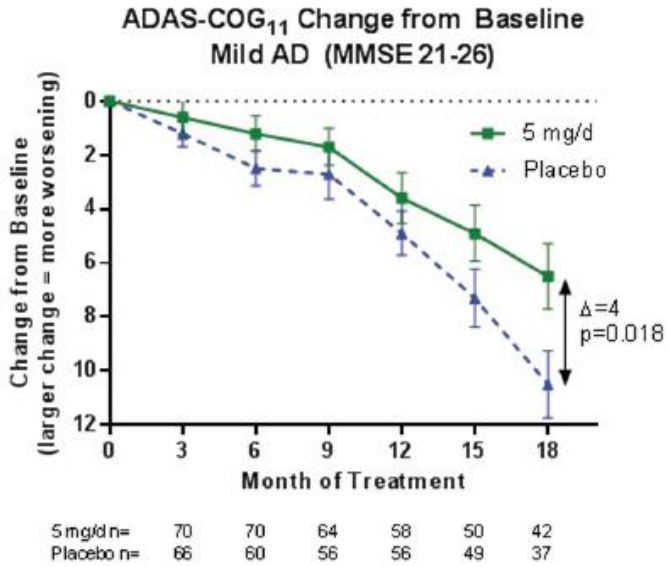
A second pre-specified interim analysis, which did not include the population receiving the discontinued 20 mg/day dose, was conducted approximately 12 months after all subjects were randomized to compare only the 5 mg/day dose versus placebo for futility and safety. While this second pre-specified interim analysis also raised no concerns regarding safety in the low-dose group, the criterion for futility was met, and the Data Safety Monitoring Board ("DSMB") consequently recommended discontinuation of the study. Pfizer elected then to discontinue the study. The futility analysis was conducted using data from only 84 patients, rather than the full population of 266 patients, and the data used in the analysis had not yet undergone rigorous database monitoring and error correction. Prior to the final database lock but after the decision to discontinue the study, data entry and scoring errors were found and corrected. Subsequent to the final database lock, we and independent statisticians attempted to replicate the results of Pfizer's futility analysis but were unable to do so.

In accordance with the protocol-specified statistical analysis plan, Pfizer and the ADCS performed the analysis of the 5 mg/day dose with respect to the primary ADAS-COG$_{11}$ endpoint and the secondary endpoints, which produced the positive results described above. Additional analyses that we conducted subsequently also produced results consistent with those of the protocol-specified analysis. That work was subsequently published in two peer-reviewed publications. Pfizer reverted the program to us in September 2011 and retains no residual economic rights in the program.

Efficacy in Mild AD Patients

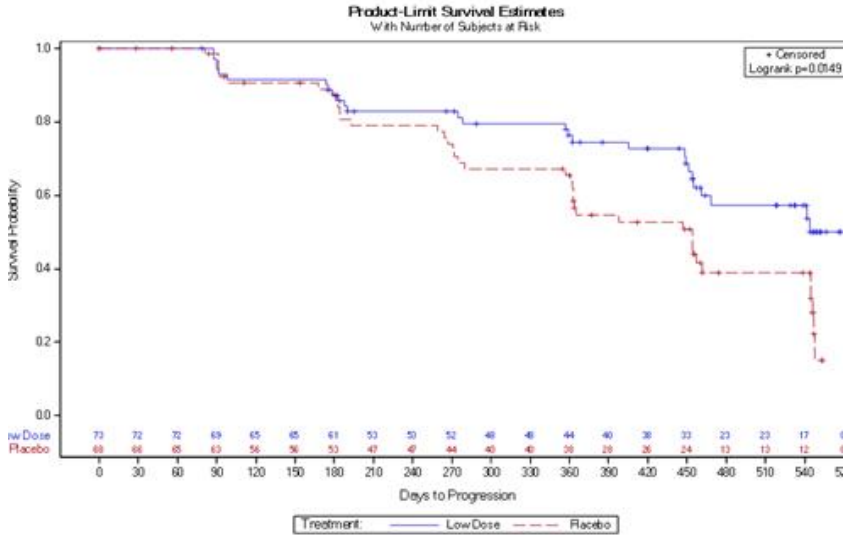
Azeliragon at the 5 mg/day dose showed more pronounced efficacy in the mild AD sub-population (MMSE score 21-26) compared to patients with moderate AD (MMSE score 14-20). In the mild AD sub-population including 73 subjects randomized to receive drug, *azeliragon* exhibited a statistically significant 4.0-point difference (p=0.018) in the ADAS-COG$_{11}$ score relative to the placebo arm, which included 68 subjects. In addition, while the study was not powered to show statistical significance in global, functional, behavioral and cognitive secondary endpoints, the mild AD sub-population demonstrated more pronounced favorable effects in those endpoints, including a statistically significant 1.0-point difference in the CDR-SB score (p=0.02) compared to the placebo group. The additional secondary endpoints demonstrated numerical improvements relative to placebo of 3.2 for the ADCS-ADL score, 1.1 for the MMSE score and 3.1 for the NPI score.

The results of the primary ADAS-COG$_{11}$ endpoint in the mild AD population are summarized in the figure below.



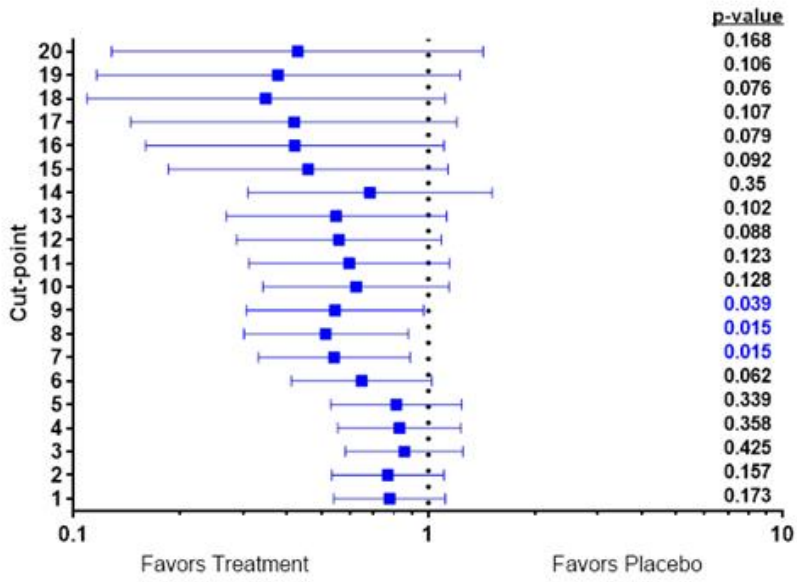
Further analyses were performed using time to event analysis for ADAS-COG$_{11}$, where progression was defined as an ADAS-COG$_{11}$ increase of 7 points from baseline.(1) Azeliragon 5 mg/day delayed time to cognitive deterioration (logrank p=0.0149) as summarized in the figure below:

Azeliragon Time to Event Analysis for ADAS-cog$_{11}$, where progression is defined as an ADAS-cog$_{11}$ increase of 7-points from baseline



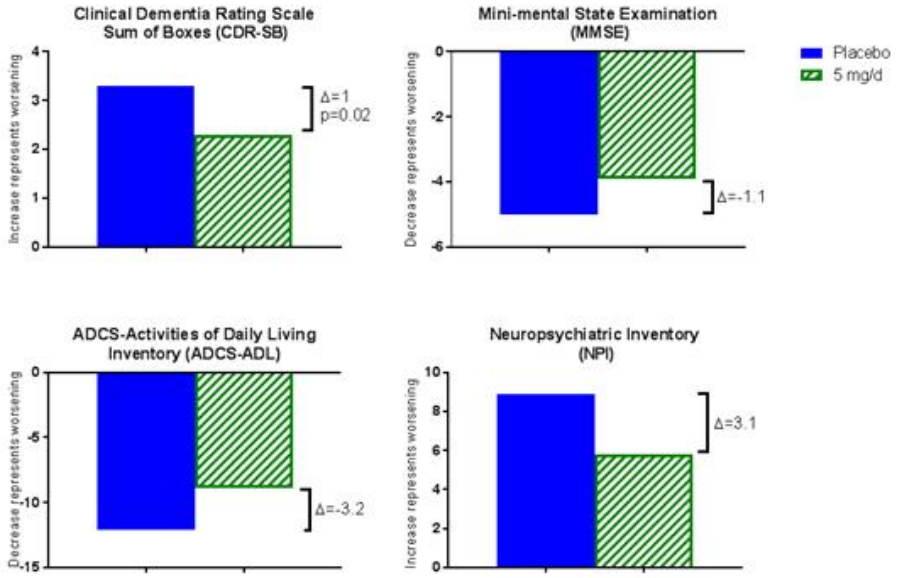
(1) Vellas B, Andrieu S, Cantet C, Dartigues JF, Gauthier S. Long-term changes in ADAS-cog: what is clinically relevant for disease modifying trials in Alzheimer? J Nutr Health Aging 2007;11(4):338-41.

The results were robust with sensitivity analyses that evaluated all cut-points between a 1 and 20-point worsening in ADAS-COG. These sensitivity analyses demonstrated hazard ratios favoring azeliragon 5 mg/day as shown in the figure below.



The results of the secondary endpoints in the mild AD population are summarized in the following figures, which, in each case, illustrate potential benefits of *azeliragon* versus placebo.

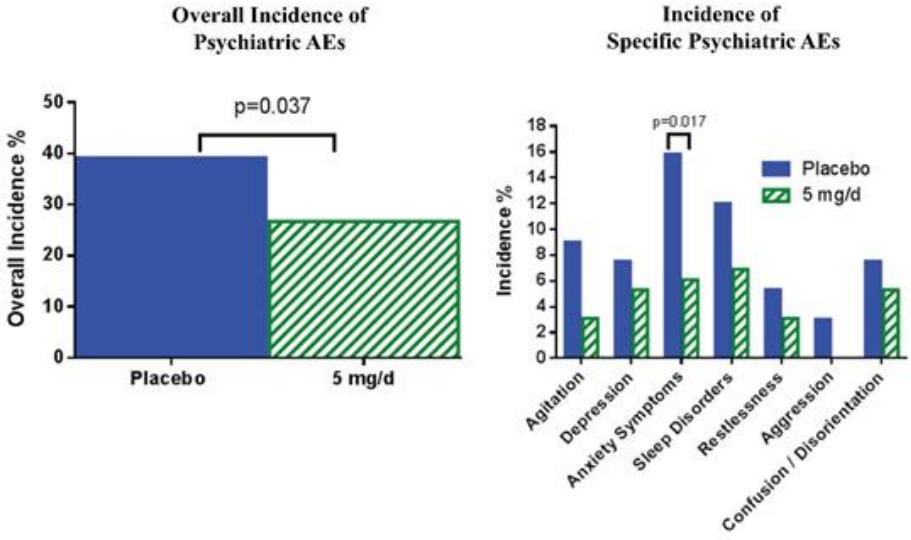
***Azeliragon* Effects on Global,**
Functional, Behavioral and Cognitive Secondary Endpoints
Mild AD (MMSE 21-26)



Adverse Events (Mild to Moderate AD Patients)

Among the most frequent adverse events ("AEs") in patients who received the high dose (20 mg/day) of *azeliragon* were falls (30 / 22.2%), urinary tract infection ("UTI") (24 / 17.8%), diarrhea (20 / 14.8%), fatigue (19 / 14.1%), dizziness (12 / 8.9%), confusional state (10 / 7.4%) and headache (9 / 6.7%). Falls and UTI were also among the most frequent AEs in patients who received the low dose (5 mg/day) of *azeliragon* and placebo. The incidences of falls and UTI in the low-dose treatment group were 26 (19.8%) and 21 (16.0%), respectively; the incidences of falls and UTI among patients who received placebo were 26 (19.7%) and 17 (12.9%), respectively.

Of particular note, there was a statistically significant lower incidence of psychiatric AEs in patients receiving 5 mg/day compared to placebo. This was evidenced by a statistically significant lower incidence of anxiety symptoms, along with numerically lower incidence of agitation, depression, sleep disorders, restlessness, aggression and confusion/disorientation.



No marked mean vital signs results or changes from baseline were observed in the active treatment groups compared to subjects who received placebo. There were no significant differences in laboratory blood or urine parameters or ECG changes between the three groups. No MRI findings of amyloid-associated imaging abnormalities ("ARIA") were seen.

The high dose (20 mg/day) *azeliragon* arm was discontinued due to an increased incidence of confusion, falls, and an apparent accelerated cognitive decline suggested by a greater change over time in ADAS-COG$_{11}$ score at a pre-specified interim analysis by an independent DSMB. There were no safety concerns evident in the 5 mg/day dose or placebo and these groups were permitted to continue the trial following re-consenting of subjects. The cognitive impairment and side effects in the 20 mg/day dose were demonstrated to be reversible after discontinuing the study drug. The trajectory of the ADAS-COG$_{11}$ change from baseline curve over time not only showed the reversal of the transient cognitive worsening but ultimately crossed the placebo curve suggesting a possible underlying effect on the disease process. The mechanism behind the central nervous system ("CNS") toxicity is unclear, but there were no signs of increased brain atrophy, no change in CSF and plasma levels of Aβ, and no detected amyloid-related imaging abnormalities in the high-dose group at the time the 20 mg/day arm of the study was discontinued.

Our Diabetes Programs – Glucokinase Activator and GLP-1r Agonist

Diabetes Overview

A person suffering from diabetes does not produce or properly use insulin (a hormone that enables people to get energy from food).

In type 2 diabetes, the secretion of insulin from the pancreas and the action of insulin on tissues such as fat and muscle are both abnormal. Type 2 diabetics produce insulin, but insulin production and use both decrease over time as the disease progresses, ultimately requiring insulin administration to manage the disease. Obesity is generally considered the major contributor to the development of type 2 diabetes. As the global obesity epidemic expands, the increase in the number of type 2 diabetes patients has and is expected to continue. With the increasing incidence and prevalence of type 2 diabetes, we believe there is a significant unmet medical need for treatment alternatives with improved efficacy and safety.

Type 1 diabetes is an autoimmune disease in which a person's pancreas stops producing insulin. Type 1 diabetes results when the body's immune system attacks and destroys the insulin-producing cells in the pancreas, called beta cells. While its causes are not yet entirely understood, scientists believe that both genetic factors and environmental triggers are involved. The onset of type 1 diabetes is not believed to be affected by diet or lifestyle.

Current Treatments for Diabetes and Their Limitations

Diabetic patients have difficulty achieving and maintaining consistent glycemic control, defined as $HbA_{1c} < 7\%$ as recommended by the American Diabetes Association. Failure to attain or maintain glycemic control over time raises a patient's risk of disease progression with the attendant loss of control and progression to potentially serious complications, such as cardiovascular disease, blindness, kidney failure, and nerve damage.

The current treatment paradigm for type 2 diabetes focuses on lifestyle changes, including weight loss, if applicable, as well as medications to manage blood glucose levels. Obesity is generally considered the major contributor to the development of type 2 diabetes, and weight loss alone is associated with improvements in glycemic parameters. Optimal glycemic control is the treatment goal in diabetic patients to prevent the risk of long-term microvascular complications. There are currently several classes of drugs approved to improve glycemic control in patients with type 2 diabetes, including injectable drugs and oral anti-diabetic drugs ("OADs"). Existing injectable therapies for type 2 diabetes include most forms of insulin therapy and GLP-1r agonists. Existing OADs include metformin, sulfonylureas and thiazolidinediones, with the addition of two new classes in the past few years, DPP-4 and SGLT-2 inhibitors, driving the OAD market's growth. We believe the continued and significant unmet medical need for diabetes treatments is demonstrated by the commercial success of DPP-4 inhibitors, a new class of OADs which were first approved in the United States in 2006 and achieved annual sales of $5.2 billion in 2013.

While multiple oral drugs are approved for the management of high blood glucose (hyperglycemia) in type 2 diabetes, insulin injection is the only treatment option approved in the United States for type 1 diabetes. There is an unmet medical need to provide people with type 1 diabetes additional treatment options that can help them to achieve tighter blood glucose levels and reduce insulin doses without increasing the risk of hypoglycemia (blood glucose levels below normal) or ketoacidosis.

We expect our diabetes investigational drug candidates, if approved, to compete in the non-insulin therapy market, currently comprised of OADs and injectable GLP-1r agonists. OADs are the preferred first line treatment by physicians (primary care and endocrinologists), payors and patients given their ease of use, cost, convenience and no training requirements. For patients with type 2 diabetes, the goal of these therapies is to delay the progression to insulin dependence. Despite the availability of multiple oral therapies and the introduction of new oral therapies (DPP-4 and SGLT-2 inhibitors) with novel mechanisms for the treatment of type 2 diabetes, which are used both as monotherapy and in combination with other agents, there remains a lack of differentiation and inadequate efficacy. While injectable GLP-1r agonists are generally considered to have superior efficacy compared with approved OADs, primary care physicians and patients continue to prefer oral agents for their ease of use and improved patient compliance versus injectables. There remains an unmet medical need for an oral drug that mimics the superiority of GLP-1r agonists and reduces the incidence of hypoglycemia.

Our Solutions: Glucokinase Activator and GLP-1r Agonist

With the increasing incidence and prevalence of type 2 diabetes, we believe there is a significant unmet medical need for treatment alternatives with improved efficacy, safety, and convenience. We have chosen two different approaches for the treatment of diabetes: activation of glucokinase (GK), through our drug candidate *TTP399*, and stimulation of GLP-1r, through our drug candidate *TTP273*. If approved, we believe *TTP399* and *TTP273* could offer attractive alternatives as OADs for the treatment of type 2 diabetes. In addition, there is a significant unmet medical need for treatments of type 1 diabetes with agents other than insulin injection. *TTP399* could also fill this unmet need by reducing the extent of reliance on insulin.

Glucokinase Activator

The Role of GK Activation in Diabetes

GK acts as the physiological glucose sensor, changing its conformation, activity and/or intracellular location in parallel with changes in glucose concentrations. GK has two main distinctive characteristics that make it a good choice for blood glucose control. First, its expression is mostly limited to tissues that require glucose-sensing (mainly liver and pancreatic β-cells). Second, GK is able to sense changes in serum glucose levels and modulate changes in liver glucose metabolism that in turn regulate the balance between hepatic glucose production and glucose consumption, and modulate changes in insulin secretion by the β-cells.

Studies in humans, along with numerous animal studies, showing that mutations in the gene encoding GK can cause both hyperglycemia (diabetes mellitus) and hypoglycemia (glucose levels below normal) depending on the mutation, confirm the critical role of GK in the regulation of glucose control. The concept of GK activation for the treatment of diabetes is attractive because it has proven to be effective and safe in normalizing glycemia in animal models of type 2 diabetes by a mechanism entirely distinct from the action of antidiabetic therapies currently on the market. Moreover, several lines of evidence have suggested that development of type 2 diabetes is related to functional impairment of the GK enzyme. Thus, GK activation may be a way to overcome an important underlying cause of type 2 diabetes progression and hence halt or delay the course of the disease.

Many competitors have tried to develop drugs that act as GKAs. Previously identified GKAs evaluated in the clinic for the treatment of type 2 diabetes demonstrate improved glucose control; however, these GKAs showed increased incidence of hypoglycemia and hyperlipidemia and an apparent lack of durability of efficacy. These liabilities have been correlated to hyperstimulation of the β-cells in a glucose independent manner and/or the accumulation of lipids in the liver, consistent with the disruption of GK and the glucokinase regulatory protein ("GKRP") interaction by these GKAs. Thus, liver-selective compounds that do not activate GK in pancreatic β-cells or affect the GK-GKRP interaction in the liver are expected to demonstrate a superior profile in comparison to previously identified GKAs.

GK activation is also attractive as a potential therapy for the treatment of type 1 diabetes because it has been demonstrated in animal models of type 1 diabetes to reduce glucose as measured by HbA1c levels by a mechanism entirely distinct from the action of antidiabetic therapies currently on the market and to be well tolerated.

TTP399

TTP399 is an orally administered, small molecule, liver-selective GKA in development as a new potential OAD for the treatment of type 1 and type 2 diabetes with a novel mechanism of action: liver-selective activation of GK that seeks to provide intensive glycemic control without inducing significant hypoglycemia. If approved for type 2 diabetes, we believe *TTP399* would compete primarily with other OADs, including DPP-4 and SGLT-2 inhibitors. Our trials for *TTP399* suggest that our approach to GK activation has the potential to avoid the tolerability issues associated with other GKAs, such as activation of GK in the pancreas, stimulation of insulin secretion independent of glucose, hypoglycemia, increased lipids and liver toxicity. Further, we believe that *TTP399*, if approved, has the potential to normalize HbA_{1c} levels without having contraindication for renal impairment and with little risk of pancreatitis. Based on data from Phase 1 and 2 trials to date, we believe that *TTP399*, if approved, has the potential to be a first-in-class OAD due to its liver-selectivity and novel mechanism of action. We are continuing to explore options for further development of this product alone or in collaboration with a partner.

We have completed nine Phase 1 and two Phase 2 clinical trials of *TTP399*. In our Phase 1 and 2 clinical trials, *TTP399* was well tolerated with negligible incidence of hypoglycemia.

Ongoing Phase 1b/2 simplici-T1 Study

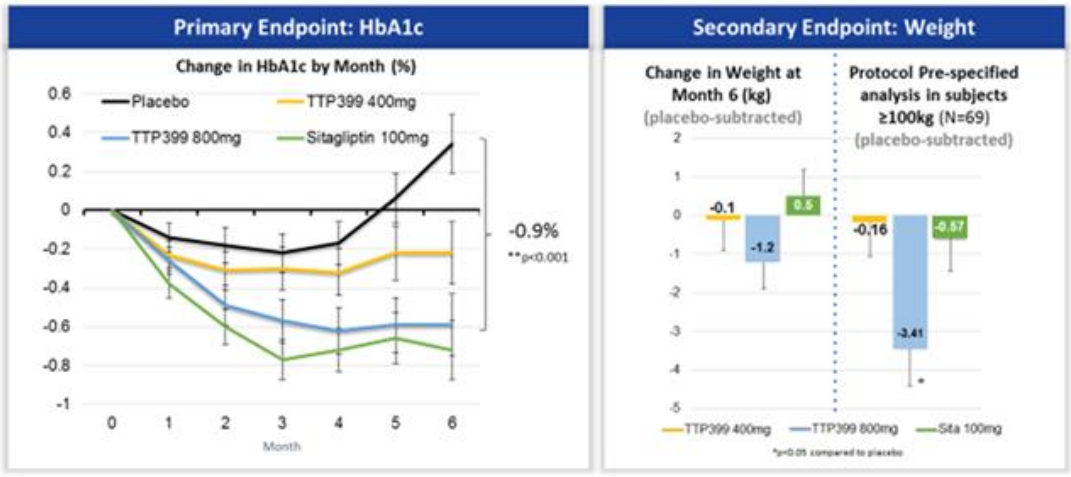
In November 2017, we initiated the simplici-T1 Study, an adaptive Phase 1b/2 clinical trial of *TTP399*, assessing the pharmacokinetics, pharmacodynamics, safety and tolerability of *TTP399* in adult patients with type 1 diabetes ("T1D"). The study is designed to evaluate whether *TTP399* is well tolerated when administered as an add-on to insulin therapy and can improve daily glucose profiles and HbA_{1c} in people living with T1D. Results from the Phase 1b part of the study are expected in the first quarter of 2018. The study is being conducted in partnership with JDRF.

Completed Phase 2b AGATA Study

In August 2016, we completed a Phase 2b clinical trial of *TTP399*, the AGATA Study, which was a six-month trial to demonstrate proof-of-concept that the benefits from *TTP399* could be sustained over time. The AGATA Study was a multi-center adaptive Phase 2b, randomized, double-blind, placebo- and active-(sitagliptin) controlled, parallel group trial to evaluate the safety and efficacy of *TTP399* following six months of administration in 190 subjects with type 2 diabetes on a stable dose of metformin. Patients had a baseline HbA_{1c} of 7.0 - 9.5%. The AGATA Study included subjects across four arms, including two doses of *TTP399* (400 mg and 800 mg), sitagliptin, which is a DPP-4 inhibitor, and placebo.

The primary endpoint of the AGATA Study was the change from baseline in HbA_{1c} at six months. A key secondary endpoint was change in weight.

In the trial, *TTP399* demonstrated achievement of the primary endpoint of statistically significant change from baseline in HbA_{1c} at six months of daily administration of 800 mg of *TTP399*. The reduction in HbA1c was dose-dependent and sustained throughout the duration of the study. *TTP399* was also found to be well-tolerated and no adverse events of severe hypoglycemia or hyperlipidemia were reported in the TTP399-treated group.



GLP-1r Agonist

The Role of GLP-1r Activation in Diabetes

GLP-1r is a class B, G protein-coupled receptor that regulates important physiological and pathological processes related to type 2 diabetes. GLP-1r stimulation as a therapeutic modality has been validated by the approval of peptide GLP-1r agonists, such as exendin-4 (Byetta) and liraglutide (Victoza). Subcutaneous administration of these peptides lowers blood glucose, decreases HbA_{1c} levels and reduces weight. However, the injectable method of administration has limited their use. This injectable class of peptides is also associated with gastrointestinal side effects (nausea and vomiting). Despite the clinical success observed with the injectable peptides, no orally available GLP-1r agonists have demonstrated similar efficacy in clinical trials to date.

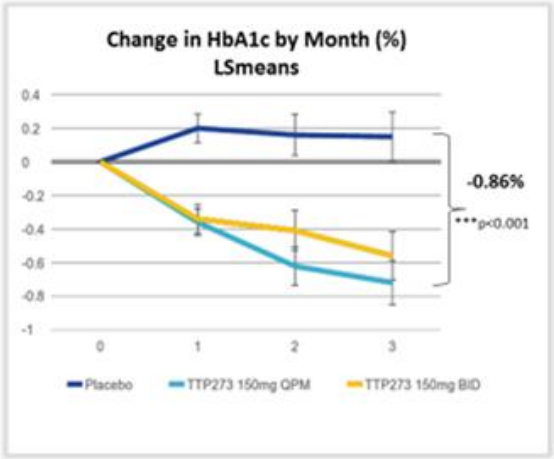
TTP273

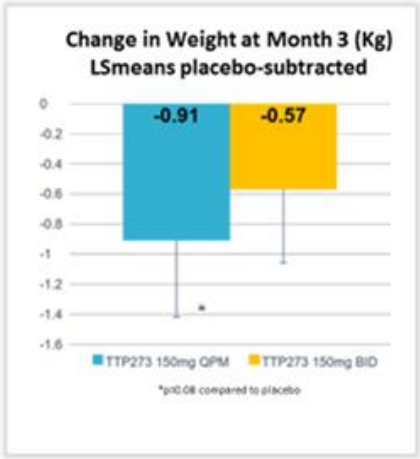
TTP273 is a potential first-in-class, orally administered, small molecule, non-peptide GLP-1r agonist. We believe an orally administered GLP-1r agonist that mimics the metabolic effects of GLP-1r peptides showing enhanced glycemic control, an improved lipid profile and weight loss, without causing the gastrointestinal side effects typical of this class of compounds, would offer a competitive advantage compared to GLP-1r targeted treatment options currently available. For these reasons, we believe *TTP273* has the potential to expand the use of GLP-1r agonists for the treatment of type 2 diabetes.

We have completed two Phase 1 clinical trials and one Phase 2 clinical trial of *TTP273*. Additionally, we have completed nine Phase 1 clinical trials and one Phase 2 clinical trial of *TTP054*, which was a predecessor orally administered GLP-1r agonist. In our Phase 1 and Phase 2 clinical trials, *TTP273* has been well tolerated with negligible incidences of nausea and vomiting. Based on the results of our completed Phase 1 and 2 clinical trials of *TTP273*, we believe *TTP273* to have the potential to provide both superior efficacy and tolerability versus peptide GLP-1r analogues.

Completed Phase 2 LOGRA Study

Our completed Phase 2 LOGRA study of *TTP273* was a 12-week study conducted in 30 centers in the United States in 174 patients with Type 2 diabetes on stable doses of metformin. In the LOGRA study, the patients were randomized to receive either placebo or *TTP273* at doses of 150 mg once or twice daily. Patients in the once and twice daily treatment arms had mean placebo-subtracted HbA1c differences of -0.86 percent and -0.71 percent, respectively. HbA1c increased by 0.15 percent in patients randomized to placebo. Although the study was not powered to demonstrate weight loss, trends were observed with patients losing on average 0.9 kg and 0.6 kg in the once and twice daily arms, respectively. An increase in weight of 0.05 kg was observed in the placebo group. TTP273 was well tolerated with no incidence of vomiting in the TTP273-treated groups and an incidence of nausea lower that in the placebo group: 7.3% in the Placebo arm, 3.4% in QPM arm and 5.0% in the BID arm.





Additional Pipeline Opportunities

We are also developing a portfolio of additional investigational drug candidates for the treatment of inflammatory disorders. Such candidates include: (1) a novel PDE4 inhibitor (*HPP737*) with a low potential for emesis which may allow an expanded therapeutics scope than currently marketed products in Psoriasis and Atopic Dermatitis; and (2) a BACH1/NRF2 modulator (HPP971). These additional candidates have been through varying stages of preclinical and Phase 1 testing and we have submitted investigational new drug applications ("INDs") for certain of them to the FDA. While our primary focus is on the development of *azeliragon*, *TTP399* and *TTP273*, we plan to continue to evaluate opportunities for furthering the development of these other compounds in our pipeline. Such development may be done internally or through partnering relationships.

We entered into a License Agreement with Reneo Pharmaceuticals, Inc. ("Reneo"), under which we granted Reneo an exclusive, worldwide, sublicensable license to develop and commercialize our peroxisome proliferation activated receptor delta (PPAR-δ) agonist program, including the compound *HPP593*. Refer to "Business – License and Research Agreements – Reneo License Agreement" for additional details.

Third-Party Suppliers and Manufacturers

We do not own or operate, and currently have no plans to establish, any manufacturing facilities. We currently rely, and expect to continue to rely, on third parties to manufacture clinical supplies of our drug candidates and for our other research and discovery programs.

Intellectual Property

Patents

The IP portfolio for *azeliragon* includes a patent family covering *azeliragon* as a composition of matter, a patent family covering polymorphs of *azeliragon* and a patent family covering select methods of treatment using *azeliragon*. *Azeliragon* as a composition of matter is covered by issued patents in the United States, Europe, Japan, Canada, Australia, China and Hong Kong. The issued U.S. patent covering *azeliragon* as a composition of matter is expected to expire in 2029, assuming we obtain the maximum possible extension. Patents covering *azeliragon* as a composition of matter outside the United States will expire no earlier than 2023 and may expire much later as a result of patent term extensions based on patent office delays, regulatory delays, or a combination thereof. The patent with claims covering a method of treating patients with mild Alzheimer's disease by administering about 5 mg per day of *azeliragon* expires in 2034.

The IP portfolio for *TTP399* includes a patent family covering *TTP399* as a composition of matter, a patent family covering combinations of *TTP399* and metformin, a patent family covering combinations of *TTP399* and DPP-4 inhibitors or GLP-1r agonists, and patent families covering two different solid formulations of *TTP399*. The patent family covering *TTP399* as a composition of matter was filed in multiple jurisdictions around the world including the United States, Europe, Japan and Canada. The issued U.S. patent covering *TTP399* as a composition of matter is expected to expire in 2030, assuming we obtain the maximum possible extension. Patents covering *TTP399* as a composition of matter outside the United States will expire no earlier than 2025 and may expire much later as a

result of patent term extensions based on patent office delays, regulatory delays, or a combination thereof. Some patents and patent applications covering *TTP399* as a composition of matter are licensed from Novo Nordisk A/S, while others are owned by us.

The IP portfolio for the GLP-1r program includes a a patent family covering *TTP273* as a composition of matter, a patent family covering combinations of *TTP273* and metformin, and a patent family covering methods of synthesizing precursors to *TTP273*. The patent family covering *TTP273* as a composition of matter was filed in multiple jurisdictions around the world including the United States, Europe, Japan and Canada. The issued U.S. patent covering *TTP273* as a composition of matter is expected to expire in 2035, assuming we obtain the maximum possible extension. Patents covering *TTP273* as a composition of matter outside the United States will expire no earlier than 2030 and may expire much later as a result of patent term extensions based on patent office delays, regulatory delays or a combination thereof.

Trade Secrets

In addition to patents, we rely on trade secrets and know-how to develop and maintain our competitive position. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements and invention assignment agreements with our employees, consultants, scientific advisors, contractors and commercial partners. These agreements are designed to protect our proprietary information and, in the case of the invention assignment agreements, to grant us ownership of technologies that are developed by employees or through a relationship with a third party. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become publicly known or be independently discovered by competitors. To the extent that our contractors use or incorporate intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions.

License and Research Agreements

Reneo License Agreement

On December 21, 2017, we entered into a License Agreement with Reneo Pharmaceuticals, Inc. (“Reneo”) (the “Reneo License Agreement”), under which Reneo obtained an exclusive, worldwide, sublicensable license to develop and commercialize our peroxisome proliferation activated receptor delta (PPAR-δ) agonist program, including the compound *HPP593*, for therapeutic, prophylactic or diagnostic application in humans.

Under the terms of the Reneo License Agreement, Reneo paid us an initial license fee of $3.0 million. We are eligible to receive additional potential development, regulatory and sales-based milestone payments totaling up to $94.5 million. In addition, Reneo is obligated to pay us royalty payments at mid-single to low-double digit rates, based on tiers of annual net sales of licensed products. Such royalties will be payable on a licensed product-by-licensed product and country-by-country basis until the latest of expiration of the licensed patents covering a licensed product in a country, expiration of data exclusivity rights for a licensed product in a country or a specified number of years after the first commercial sale of a licensed product in a country. In addition, we have received common stock and certain participation rights representing a minority interest in Reneo’s outstanding equity.

Under the terms of the Reneo License Agreement, Reneo will be responsible for the worldwide development and commercialization of the licensed products, at its cost, and is required to use commercially reasonable efforts with respect to such development and commercialization efforts.

The Reneo License Agreement, unless terminated earlier, will continue until expiration of all royalty obligations of Reneo to us. Either party may terminate the Reneo License Agreement for the other party’s uncured material breach. Reneo may terminate the Reneo License Agreement at will upon prior written notice. Upon expiration (but not earlier termination) of the Reneo License Agreement the licenses granted to Reneo will survive on a royalty-free basis in perpetuity.

Huadong License

On December 21, 2017, we entered into a License Agreement with Hangzhou Zhongmei Huadong Pharmaceutical Co., Ltd. (“Huadong”) (the “Huadong License Agreement”), under which Huadong obtained an exclusive and sublicensable license to develop and commercialize our glucagon-like peptide-1 receptor agonist (“GLP-1r”) program, including the compound *TTP273*, for therapeutic uses in humans or animals, in China and certain other Pacific Rim countries, including Australia and South Korea (collectively, the “Huadong License Territory”). Additionally, under the Huadong License Agreement, we obtained a non-exclusive, sublicensable, royalty-free license to develop and commercialize certain Huadong patent rights and know-how related to our GLP-1r program for therapeutic uses in humans or animals outside of the Huadong License Territory.

Under the terms of the Huadong License Agreement, Huadong will pay us an initial license fee of $8.0 million and potential development and regulatory milestone payments totaling up to $25.0 million, with an additional potential regulatory milestone of $20.0 million if Huadong receives regulatory approval for a central nervous system indication. In addition, we are eligible for an additional $50.0 million in potential sales-based milestones, as well as royalty payments ranging from low-single to low-double digit rates, based on tiered sales of licensed products.

Under the Huadong License Agreement, we are also responsible for conducting a Phase 2 multi-region clinical trial (the "Phase 2 MRCT") including sites in both the United States and the Huadong License Territory for the purpose of assessing the safety and efficacy of *TTP273* in patients with type 2 diabetes. The Phase 2 MRCT will be designed to satisfy the requirements of the China Food and Drug Administration necessary in order for Huadong to begin a Phase 3 clinical trial in China. We will also be responsible for contributing up to $3.0 million in connection with the Phase 2 MRCT.

Huadong will be responsible for the development and commercialization of the licensed products in the Huadong License Territory, at its cost, and is required to use commercially reasonable efforts with respect to its development efforts. Further, Huadong is required to use commercially reasonable efforts to develop and commercialize at least one GLP-1r compound in China.

The Huadong License Agreement, unless terminated earlier, will continue on a product-by-product and country-by-country basis until expiration of the royalty obligations Huadong owes to us on such licensed product, which extend until the later of the expiration of certain patent or data exclusivity rights covering such licensed product in such country or eight years after the first commercial sale of such product in such country. Either party may terminate the Huadong License Agreement for the other party's uncured material breach. Huadong may terminate the Huadong License Agreement at will upon prior written notice, subject to certain timing restrictions related to the Phase 2 MRCT.

Calithera License Agreement

In March 2015, we entered into a License and Research Agreement with Calithera Biosciences, Inc. ("Calithera") (the "Calithera License Agreement"), under which Calithera obtained an exclusive, worldwide, sublicensable license to develop and commercialize certain of our hexokinase II inhibitors for any therapeutics, prophylactic, preventative or diagnostic use. This agreement was terminated, at the option of Calithera, effective December 21, 2017.

JDRF Agreement

In August 2017, we entered into a research, development and commercialization agreement with JDRF International ("JDRF") (the "JDRF Agreement") to support the funding of the simplici-T1 Study, an adaptive Phase 1b/2 study to explore the effects of *TTP399*, in type 1 diabetes. We initiated this study in the fourth quarter of 2017. According to the terms of the JDRF Agreement, JDRF will provide research funding of up to $3.0 million based on the achievement of research and development milestones, with the total funding provided by JDRF not to exceed approximately one-half of the total cost of the project. Additionally, we have the obligation to make certain milestone payments to JDRF upon the commercialization, licensing, sale or transfer of *TTP399* as a treatment for type 1 diabetes.

Novo Nordisk

In February 2007, we entered into an Agreement Concerning Glucokinase Activator Project with Novo Nordisk A/S (the "Novo License Agreement") whereby we obtained an exclusive, worldwide, sublicensable license under certain Novo Nordisk intellectual property rights to discover, develop, manufacture, have manufactured, use and commercialize products for the prevention, treatment, control, mitigation or palliation of human or animal diseases or conditions. As part of this license grant, we obtained certain worldwide rights to Novo Nordisk's GKA program, including rights to preclinical and clinical compounds such as *TTP399*. Under the terms of the Novo License Agreement, we have additional potential developmental and regulatory milestone payments totaling up to $115.0 million for approval of a product. We are also obligated for an additional $75.0 million in potential sales-based milestones, as well as royalty payments, at mid-single digit royalty rates, based on tiered sales of commercialized licensed products.

Columbia University

In May 2015, we entered into a New Exclusive License Agreement (the "Columbia License Agreement") with The Trustees of Columbia University in the City of New York ("Columbia") whereby we obtained a worldwide, exclusive license, with the right to grant sublicenses under certain Columbia RAGE-related patent rights to discover, develop, manufacture, use, sell, have sold, import, have made, offer to sell, rent, or lease RAGE-inhibiting small molecules, including *azeliragon*. We also obtained a worldwide right to use certain RAGE-related research information and material. Under the terms of the Columbia License Agreement, we are required to pay an annual fee of $0.1 million, a potential milestone payment of $0.8 million and royalty payments at low-single digit royalty rates based on the net sales of licensed products. At the end of 2021, any fees and payments under the agreement will end, and we will have an irrevocable license to the RAGE-related patent rights, research information and material.

Competition

The biopharmaceutical industry is characterized by intense competition and rapid innovation. Our potential competitors include large pharmaceutical and biotechnology companies, specialty pharmaceutical companies and generic drug companies. We believe the key competitive factors that will affect the development and commercial success of our drug candidates are efficacy, safety and tolerability profile, mechanism of action, control and predictability, convenience of dosing, price and reimbursement, and availability of comparable alternative therapies.

Many of the companies against which we may compete have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

Potential Competing Products – Alzheimer's Disease

There are currently limited approved treatments for AD in the United States and existing therapies treat only the symptoms of the disease, rather than targeting the underlying mechanisms. The approved symptomatic AD therapies in the United States fall into two classes, AChEIs and glutamatergic modulators. If *azeliragon* is approved, its mechanism of action may be complementary to existing standard of care, as well as that of drug candidates with differentiated mechanisms currently in development for AD, including anti-Aβ monoclonal antibodies, BACE inhibitors, tau aggregation inhibitors and monoamine oxidase-b inhibitors. This will allow the opportunity for co-administration with these other drug candidates if they are successfully developed. We are not aware of any other clinical-stage RAGE inhibitor investigational products being developed for the treatment of AD.

Potential Competing Products – Type 2 Diabetes

If approved, we expect that our type 2 diabetes investigational drug candidates will compete with currently available non-insulin medication products for type 2 diabetes. These products include the following:

- Injectable GLP-1r agonists, such as exenatide or liraglutide, which mimic a naturally occurring hormone that stimulates the pancreas to secrete insulin when blood glucose levels are high.
- DPP-4 inhibitors, such as sitagliptin or saxagliptin, are a class of drugs that work by blocking the enzyme that normally degrades GLP-1.
- Sulfonylureas and meglitinides, which are classes of drugs that act on the pancreatic cells to stimulate the secretion of insulin.
- Thiazolidinediones, such as pioglitizone, and biguanides, such as metformin, which lower blood glucose by improving the sensitivity of cells to insulin, or diminishing insulin resistance.
- Alpha-glucosidase inhibitors, which lower the amount of glucose absorbed from the intestines, thereby reducing the rise in blood glucose that occurs after a meal.
- SGLT-2 inhibitors, such as dapagliflozin and canagliflozin, are a class of medications that lower blood glucose by increasing glucose excretion in urine.

In addition to existing marketed products, there are a number of product candidates currently in development focusing on the same mechanisms as our programs for the treatment of type 2 diabetes, including:

- **Glucokinase activators:** Advinus Therapeutics Ltd., Yabao Pharmaceutical Co, Inc., Pegbio Co. Ltd., Hua Medicine Ltd. and Teijin Pharma Limited are among the companies evaluating glucokinase activators in clinical or preclinical studies.
- **Oral GLP-1r agonists:** Diabetology Ltd., Heptares Therapeutics Ltd., Novo Nordisk, Oramed Pharmaceuticals Inc., Poxel SA and Receptos, Inc. are among the companies evaluating oral GLP-1r agonists in clinical or preclinical studies.

We believe that our investigational drug candidates may offer key potential advantages over these competitive products that could enable our drug candidates, if approved, to capture meaningful market share from our competitors. Nevertheless, many of our potential competitors have substantially greater financial, technical and human resources than we do, as well as greater experience in the discovery and development of drug candidates, obtaining FDA and other regulatory approvals of products and the commercialization of those products. Accordingly, our competitors may be more successful than us in obtaining regulatory approval for drugs and achieving widespread market acceptance. Our competitors' drugs may be more effective, or more effectively marketed and sold, than any drug candidate we may commercialize and may render our drug candidates obsolete or non-competitive before we can recover the expenses

of their development and commercialization. We anticipate that we will face intense and increasing competition as new drugs enter the market, existing treatments come off patent, and more advanced technologies become available. Finally, the development of new treatment methods for the diseases we are targeting could render our drug candidates non-competitive or obsolete.

Collaboration Revenue and Customers

The majority of our collaboration revenue for the years ended December 31, 2017, 2016 and 2015 is related to our licenses of certain compounds in the pre-clinical stage or clinical stage, including the Calithera License Agreement, the Huadong License Agreement, and the Reneo License Agreement. Revenue recognized in these periods relates to initial consideration received in the form of upfront payments and equity interests coupled with research activities performed by our personnel. While we may continue to seek partnership opportunities for our other pre-clinical and diabetes assets, our primary focus continues to be on our Phase 3 clinical trial, the STEADFAST Study, with respect to *azeliragon*, and development of our diabetes investigational products, in particular *TTP273* and *TTP399* in the US.

Government Regulation and Product Approvals

Government authorities in the United States, at the federal, state and local level, and in other countries and jurisdictions, including the EU, extensively regulate, among other things, the research, development, testing, manufacture, pricing, quality control, approval, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, post-approval monitoring and reporting, and import and export of biopharmaceutical products. The processes for obtaining marketing approvals in the United States and in foreign countries and jurisdictions, along with compliance with applicable statutes and regulations and other regulatory authorities, require the expenditure of substantial time and financial resources.

Approval and Regulation of Drugs in the United States

In the United States, drug products are regulated under the Federal Food, Drug and Cosmetic Act, or FDCA, and applicable implementing regulations and guidance. The failure of an applicant to comply with the applicable regulatory requirements at any time during the product development process, including non-clinical testing, clinical testing, the approval process or post-approval process, may result in delays to the conduct of a study, regulatory review and approval and/or administrative or judicial sanctions. These sanctions may include, but are not limited to, the FDA's refusal to allow an applicant to proceed with clinical trials, refusal to approve pending applications, license suspension or revocation, withdrawal of an approval, warning letters, adverse publicity, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines and civil or criminal investigations and penalties brought by the FDA or Department of Justice, or DOJ, or other government entities, including state agencies.

An applicant seeking approval to market and distribute a new drug in the United States generally must satisfactorily complete each of the following steps before the product candidate will be licensed by the FDA:

- preclinical testing including laboratory tests, animal studies and formulation studies, which must be performed in accordance with the FDA's good laboratory practice, or GLP, regulations and standards;
- submission to the FDA of an IND for human clinical testing, which must become effective before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, representing each clinical site before each clinical trial may be initiated;
- performance of adequate and well-controlled human clinical trials to establish the safety, potency and purity of the product candidate for each proposed indication, in accordance with current good clinical practices, or GCP;
- preparation and submission to the FDA of a new drug application, or NDA, for a drug product which includes not only the results of the clinical trials, but also, detailed information on the chemistry, manufacture and quality controls for the product candidate and proposed labelling for one or more proposed indication(s);
- review of the product candidate by an FDA advisory committee, where appropriate or if applicable;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities, including those of third parties, at which the product candidate or components thereof are manufactured to assess compliance with current good manufacturing practices, or cGMP, requirements and to assure that the facilities, methods and controls are adequate to preserve the product's identity, strength, quality and purity;

- satisfactory completion of any FDA audits of the non-clinical and clinical trial sites to assure compliance with GCP and the integrity of clinical data in support of the NDA;
- payment of user fees and securing FDA approval of the NDA to allow marketing of the new drug product; and
- compliance with any post-approval requirements, including the potential requirement to implement a risk evaluation and mitigation strategy ("REMS") and the potential requirement to conduct any post-approval studies required by the FDA.

Preclinical Studies

Before an applicant begins testing a product candidate with potential therapeutic value in humans, the product candidate enters the preclinical testing stage. Preclinical tests include laboratory evaluations of product chemistry, formulation and stability, as well as other studies to evaluate, among other things, the toxicity of the product candidate. The conduct of the preclinical tests and formulation of the compounds for testing must comply with federal regulations and requirements, including GLP regulations and standards. The results of the preclinical tests, together with manufacturing information and analytical data, are submitted to the FDA as part of an IND. Some long-term preclinical testing, such as animal tests of reproductive adverse events and carcinogenicity, and long-term toxicity studies, may continue after the IND is submitted.

The IND and IRB Processes

An IND is an exemption from the FDCA that allows an unapproved product candidate to be shipped in interstate commerce for use in an investigational clinical trial and a request for FDA authorization to administer such investigational product to humans. Such authorization must be secured prior to interstate shipment and administration of any product candidate that is not the subject of an approved NDA. In support of a request for an IND, applicants must submit a protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. In addition, the results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and plans for clinical trials, among other things, must be submitted to the FDA as part of an IND. The FDA requires a 30-day waiting period after the filing of each IND before clinical trials may begin. This waiting period is designed to allow the FDA to review the IND to determine whether human research subjects will be exposed to unreasonable health risks. At any time during this 30-day period, or thereafter, the FDA may raise concerns or questions about the conduct of the trials as outlined in the IND and impose a clinical hold or partial clinical hold. In this case, the IND sponsor and the FDA must resolve any outstanding concerns before clinical trials can begin.

Following commencement of a clinical trial under an IND, the FDA may also place a clinical hold or partial clinical hold on that trial. A clinical hold is an order issued by the FDA to the sponsor to delay a proposed clinical investigation or to suspend an ongoing investigation. A partial clinical hold is a delay or suspension of only part of the clinical work requested under the IND. For example, a specific protocol or part of a protocol is not allowed to proceed, while other protocols may do so. No more than 30 days after imposition of a clinical hold or partial clinical hold, the FDA will provide the sponsor a written explanation of the basis for the hold. Following issuance of a clinical hold or partial clinical hold, an investigation may only resume after the FDA has notified the sponsor that the investigation may proceed. The FDA will base that determination on information provided by the sponsor correcting the deficiencies previously cited or otherwise satisfying the FDA that the investigation can proceed.

A sponsor may choose, but is not required, to conduct a foreign clinical study under an IND. When a foreign clinical study is conducted under an IND, all FDA IND requirements must be met unless waived. When a foreign clinical study is not conducted under an IND, the sponsor must ensure that the study complies with certain regulatory requirements of the FDA in order to use the study as support for an IND or application for marketing approval. Specifically, on April 28, 2008, the FDA amended its regulations governing the acceptance of foreign clinical studies not conducted under an investigational new drug application as support for an IND or a new drug application. The final rule provides that such studies must be conducted in accordance with good clinical practice, or GCP, including review and approval by an independent ethics committee, or IEC, and informed consent from subjects. The GCP requirements in the final rule encompass both ethical and data integrity standards for clinical studies. The FDA's regulations are intended to help ensure the protection of human subjects enrolled in non-IND foreign clinical studies, as well as the quality and integrity of the resulting data. They further help ensure that non-IND foreign studies are conducted in a manner comparable to that required for IND studies.

In addition to the foregoing IND requirements, an IRB representing each institution participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that institution, and the IRB must conduct continuing review and reapprove the study at least annually. The IRB must review and approve, among other things, the study protocol and informed consent information to be provided to study subjects. An IRB must operate in compliance with FDA regulations. An IRB can suspend or terminate approval of a clinical trial at its institution, or an institution it represents, if the clinical trial is not being conducted in accordance with the IRB's requirements or if the product candidate has been associated with unexpected serious harm to patients.

Additionally, some trials are overseen by an independent group of qualified experts organized by the trial sponsor, known as a data safety monitoring board or committee, or DSMB. This group provides authorization as to whether or not a trial may move forward at designated check points based on access that only the group maintains to available data from the study. Suspension or termination of development during any phase of clinical trials can occur if it is determined that the participants or patients are being exposed to an unacceptable health risk. Other reasons for suspension or termination may be made by us based on evolving business objectives and/or competitive climate.

Information about clinical trials must be submitted within specific timeframes to the National Institutes of Health, or NIH, for public dissemination on its ClinicalTrials.gov website.

Human Clinical Trials in Support of an NDA

Clinical trials involve the administration of the investigational product candidate to human subjects under the supervision of a qualified investigator in accordance with GCP requirements which include, among other things, the requirement that all research subjects provide their informed consent in writing before their participation in any clinical trial. Clinical trials are conducted under written clinical trial protocols detailing, among other things, the objectives of the study, inclusion and exclusion criteria, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated.

Human clinical trials are typically conducted in three sequential phases, but the phases may overlap or be combined. Additional studies may also be required after approval.

Phase 1 clinical trials are initially conducted in a limited population to test the product candidate for safety, including adverse effects, dose tolerance, absorption, metabolism, distribution, excretion and pharmacodynamics in healthy humans or in patients. During Phase 1 clinical trials, information about the investigational drug product's pharmacokinetics and pharmacological effects may be obtained to permit the design of well-controlled and scientifically valid Phase 2 clinical trials.

Phase 2 clinical trials are generally conducted in a limited patient population to identify possible adverse effects and safety risks, evaluate the efficacy of the product candidate for specific targeted indications and determine dose tolerance and optimal dosage. Multiple Phase 2 clinical trials may be conducted by the sponsor to obtain information prior to beginning larger and more costly Phase 3 clinical trials. Phase 2 clinical trials are well controlled, closely monitored and conducted in a limited patient population.

Phase 3 clinical trials proceed if the Phase 2 clinical trials demonstrate that a dose range of the product candidate is potentially effective and has an acceptable safety profile. Phase 3 clinical trials are undertaken within an expanded patient population to further evaluate dosage, provide substantial evidence of clinical efficacy and further test for safety in an expanded and diverse patient population at multiple, geographically dispersed clinical trial sites. A well-controlled, statistically robust Phase 3 clinical trial may be designed to deliver the data that regulatory authorities will use to decide whether or not to approve, and, if approved, how to appropriately label a drug: such Phase 3 studies are referred to as "pivotal."

In some cases, the FDA may approve an NDA for a product candidate but require the sponsor to conduct additional clinical trials to further assess the product candidate's safety and effectiveness after approval. Such post-approval trials are typically referred to as Phase 4 clinical trials. These studies are used to gain additional experience from the treatment of a larger number of patients in the intended treatment group and to further document a clinical benefit in the case of drugs approved under accelerated approval regulations. Failure to exhibit due diligence with regard to conducting Phase 4 clinical trials could result in withdrawal of approval for products.

Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and more frequently if serious adverse events occur. In addition, IND safety reports must be submitted to the FDA for any of the following: serious and unexpected suspected adverse reactions; findings from other studies or animal or *in vitro* testing that suggest a significant risk in humans exposed to the product; and any clinically important increase in the case of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, or at all. Furthermore, the FDA or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution, or an institution it represents, if the clinical trial is not being conducted in accordance with the IRB's requirements or if the product has been associated with unexpected serious harm to patients. The FDA will typically inspect one or more clinical sites to assure compliance with GCP and the integrity of the clinical data submitted.

Special Protocol Assessment

The special protocol assessment, or SPA, process is designed to facilitate the FDA's review and approval of drugs by allowing the FDA to evaluate the proposed design and size of Phase 3 clinical trials that are intended to form the primary basis for determining a drug product's efficacy. Upon specific request by a clinical trial sponsor, the FDA will evaluate the protocol and respond to a sponsor's

questions regarding, among other things, primary efficacy endpoints, trial design and data analysis plans, within 45 days of receipt of the request.

The FDA ultimately assesses whether the protocol design and planned analysis of the trial are acceptable to support regulatory approval of the drug candidate with respect to effectiveness of the indication studied. All agreements and disagreements between the FDA and the sponsor regarding an SPA must be clearly documented in an SPA letter or the minutes of a meeting between the sponsor and the FDA.

Even if the FDA agrees to the design, execution and analyses proposed in protocols reviewed under the SPA process, the FDA may revoke or alter its agreement under the following circumstances:

- public health concerns emerge that were unrecognized at the time of the protocol assessment, or the director of the review division determines that a substantial scientific issue essential to determining safety or efficacy has been identified after testing has begun;
- a sponsor fails to follow a protocol that was agreed upon with the FDA; or
- the relevant data, assumptions or information provided by the sponsor in a request for SPA change, are found to be false statements or misstatements, or are found to omit relevant facts.

A documented SPA may be modified, and such modification will be deemed binding on the FDA review division, except under the circumstances described above, if FDA and the sponsor agree in writing to modify the protocol and such modification is intended to improve the study. We have obtained an SPA with the FDA for our Phase 3 STEADFAST Study of *azeliragon*. Agreement by the FDA to the SPA does not guarantee that the results of a study conducted in accordance with the agreement will be successful or that other issues that arise may not impede approval of the investigational product.

Review and Approval of an NDA

In order to obtain approval to market a drug product in the United States, a marketing application must be submitted to the FDA that provides sufficient data establishing the safety, purity and potency of the proposed drug product for its intended indication. The application includes all relevant data available from pertinent preclinical and clinical trials, including negative or ambiguous results as well as positive findings, together with detailed information relating to the product's chemistry, manufacturing, controls and proposed labeling, among other things. Data can come from company-sponsored clinical trials intended to test the safety and effectiveness of a use of a product, or from a number of alternative sources, including studies initiated by investigators. To support marketing approval, the data submitted must be sufficient in quality and quantity to establish the safety, purity and potency of the drug product to the satisfaction of the FDA.

The NDA is a vehicle through which applicants formally propose that the FDA approve a new product for marketing and sale in the United States for one or more indications. Every new drug product candidate must be the subject of an approved NDA before it may be commercialized in the United States. Under federal law, the submission of most NDAs is subject to an application user fee, which for federal fiscal year 2018 is $2,421,495 for an application requiring clinical data. The sponsor of an approved NDA is also subject to an annual program fee, which for fiscal year 2018 is $304,162. Certain exceptions and waivers are available for some of these fees, such as an exception from the application fee for products with orphan designation and a waiver for certain small businesses.

Following submission of an NDA, the FDA conducts a preliminary review of the application generally within 60 calendar days of its receipt and strives to inform the sponsor by the 74th day after the FDA's receipt of the submission whether the application is sufficiently complete to permit substantive review. The FDA may request additional information rather than accept the application for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA has agreed to specified performance goals in the review process of NDAs. Under that agreement, 90% of applications seeking approval of New Molecular Entities, or NMEs, are meant to be reviewed within ten months from the date on which the FDA accepts the application for filing, and 90% of applications for NMEs that have been designated for "priority review" are meant to be reviewed within six months of the filing date. For applications seeking approval of products that are not NMEs, the ten-month and six-month review periods run from the date that the FDA receives the application. The review process and the Prescription Drug User Fee Act goal date may be extended by the FDA for three additional months to consider new information or clarification provided by the applicant to address an outstanding deficiency identified by the FDA following the original submission.

Before approving an application, the FDA typically will inspect the facility or facilities where the product is or will be manufactured. These pre-approval inspections may cover all facilities associated with an NDA submission, including component manufacturing, finished product manufacturing and control testing laboratories. The FDA will not approve an application unless it

determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving an NDA, the FDA will typically inspect one or more clinical sites to assure compliance with GCP. Under the FDA Reauthorization Act of 2017, the FDA must implement a protocol to expedite review of responses to inspection reports pertaining to certain applications, including applications for products in shortage or those for which approval is dependent on remediation of conditions identified in the inspection report.

In addition, as a condition of approval, the FDA may require an applicant to develop a REMS. REMS use risk minimization strategies beyond the professional labeling to ensure that the benefits of the product outweigh the potential risks. To determine whether a REMS is needed, the FDA will consider the size of the population likely to use the product, seriousness of the disease, expected benefit of the product, expected duration of treatment, seriousness of known or potential adverse events and whether the product is a new molecular entity.

The FDA may refer an application for a novel product to an advisory committee or explain why such referral was not made. Typically, an advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Special Expedited Review and Approval Programs

The FDA is authorized to designate certain products for expedited review if they are intended to address an unmet medical need in the treatment of a serious or life-threatening disease or condition. These programs are referred to as fast track designation, breakthrough therapy designation, priority review designation, regenerative advanced therapy designation and accelerated approval.

Specifically, the FDA may designate a product for Fast Track review if it is intended, whether alone or in combination with one or more other products, for the treatment of a serious or life-threatening disease or condition, and it demonstrates the potential to address unmet medical needs for such a disease or condition. We have obtained Fast Track designation for *azeliragon* for the treatment of dementia of the Alzheimer's type. For Fast Track products, sponsors may have greater interactions with the FDA and the FDA may initiate review of sections of a Fast Track product's application before the application is complete. This rolling review may be available if the FDA determines, after preliminary evaluation of clinical data submitted by the sponsor, that a Fast Track product may be effective. The sponsor must also provide, and the FDA must approve, a schedule for the submission of the remaining information and the sponsor must pay applicable user fees. However, the FDA's time period goal for reviewing a Fast Track application does not begin until the last section of the application is submitted. In addition, the Fast Track designation may be withdrawn by the FDA if the FDA believes that the designation is no longer supported by data emerging in the clinical trial process.

Second, a product may be designated as a Breakthrough Therapy if it is intended, either alone or in combination with one or more other products, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The FDA may take certain actions with respect to Breakthrough Therapies, including holding meetings with the sponsor throughout the development process; providing timely advice to the product sponsor regarding development and approval; involving more senior staff in the review process; assigning a cross-disciplinary project lead for the review team; and taking other steps to design the clinical trials in an efficient manner.

Third, the FDA may designate a product for priority review if it is a product that treats a serious condition and, if approved, would provide a significant improvement in safety or effectiveness. The FDA determines, on a case-by-case basis, whether the proposed product represents a significant improvement when compared with other available therapies. Significant improvement may be illustrated by evidence of increased effectiveness in the treatment of a condition, elimination or substantial reduction of a treatment-limiting product reaction, documented enhancement of patient compliance that may lead to improvement in serious outcomes, and evidence of safety and effectiveness in a new subpopulation. A priority designation is intended to direct overall attention and resources to the evaluation of such applications, and to shorten the FDA's goal for taking action on a marketing application from ten months to six months.

With passage of the 21st Century Cures Act, or the Cures Act, in December 2016, Congress authorized the FDA to accelerate review and approval of products designated as regenerative advanced therapies. A product is eligible for this designation if it is a regenerative medicine therapy that is intended to treat, modify, reverse or cure a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the product has the potential to address unmet medical needs for such disease or condition. The benefits of a regenerative advanced therapy designation include early interactions with FDA to expedite development and review, benefits available to breakthrough therapies, potential eligibility for priority review and accelerated approval based on surrogate or intermediate endpoints.

Finally, the FDA may grant accelerated approval to a product for a serious or life-threatening condition that provides

meaningful therapeutic advantage to patients over existing treatments based upon a determination that the product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit. The FDA may also grant accelerated approval for such a condition when the product has an effect on an intermediate clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality, or IMM, and that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity or prevalence of the condition and the availability or lack of alternative treatments. Products granted accelerated approval must meet the same statutory standards for safety and effectiveness as those granted traditional approval. The accelerated approval pathway is usually contingent on a sponsor's agreement to conduct, in a diligent manner, additional post-approval confirmatory studies to verify and describe the product's clinical benefit.

The FDA's Decision on an NDA

On the basis of the FDA's evaluation of the application and accompanying information, including the results of the inspection of the manufacturing facilities, the FDA may issue an approval letter or a complete response letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications. A complete response letter generally outlines the deficiencies in the submission and may require substantial additional testing or information in order for the FDA to reconsider the application. If and when those deficiencies have been addressed to the FDA's satisfaction in a resubmission of the NDA, the FDA will issue an approval letter. The FDA has committed to reviewing such resubmissions in two or six months depending on the type of information included. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

If the FDA approves a new product, it may limit the approved indications for use of the product. The agency may also require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms, including REMS, to help ensure that the benefits of the product outweigh the potential risks. REMS can include medication guides, communication plans for health care professionals, and elements to assure safe use, or ETASU. ETASU can include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring and the use of patent registries. The FDA may prevent or limit further marketing of a product based on the results of post-market studies or surveillance programs. After approval, many types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Post-Approval Regulation

If regulatory approval for marketing of a product or new indication for an existing product is obtained, the sponsor will be required to comply with all regular post-approval regulatory requirements as well as any post-approval requirements that the FDA may have imposed as part of the approval process. The sponsor will be required to report, among other things, certain adverse reactions and manufacturing problems to the FDA, provide updated safety and efficacy information and comply with requirements concerning advertising and promotional labeling requirements. Manufacturers and certain of their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with ongoing regulatory requirements, including cGMP regulations, which impose certain procedural and documentation requirements upon manufacturers. Accordingly, the sponsor and its third-party manufacturers must continue to expend time, money and effort in the areas of production and quality control to maintain compliance with cGMP regulations and other regulatory requirements.

A product may also be subject to official lot release, meaning that the manufacturer is required to perform certain tests on each lot of the product before it is released for distribution. If the product is subject to official release, the manufacturer must submit samples of each lot, together with a release protocol showing a summary of the history of manufacture of the lot and the results of all of the manufacturer's tests performed on the lot, to the FDA. The FDA may in addition perform certain confirmatory tests on lots of some products before releasing the lots for distribution. Finally, the FDA will conduct laboratory research related to the safety, purity, potency and effectiveness of pharmaceutical products.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;

- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending applications or supplements to approved applications, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates the marketing, labeling, advertising and promotion of prescription drug products placed on the market. This regulation includes, among other things, standards and regulations for direct-to-consumer advertising, communications regarding unapproved uses, industry-sponsored scientific and educational activities, and promotional activities involving the Internet and social media. Promotional claims about a drug's safety or effectiveness are prohibited before the drug is approved. After approval, a drug product generally may not be promoted for uses that are not approved by the FDA, as reflected in the product's prescribing information. In the United States, health care professionals are generally permitted to prescribe drugs for such uses not described in the drug's labeling, known as off-label uses, because the FDA does not regulate the practice of medicine. However, FDA regulations impose rigorous restrictions on manufacturers' communications, prohibiting the promotion of off-label uses. It may be permissible, under very specific, narrow conditions, for a manufacturer to engage in nonpromotional, non-misleading communication regarding off-label information, such as distributing scientific or medical journal information.

If a company is found to have promoted off-label uses, it may become subject to adverse public relations and administrative and judicial enforcement by the FDA, the Department of Justice, or the Office of the Inspector General of the Department of Health and Human Services, as well as state authorities. This could subject a company to a range of penalties that could have a significant commercial impact, including civil and criminal fines and agreements that materially restrict the manner in which a company promotes or distributes drug products. The federal government has levied large civil and criminal fines against companies for alleged improper promotion, and has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed.

In addition, the distribution of prescription pharmaceutical products is subject to the Prescription Drug Marketing Act, or PDMA, and its implementing regulations, as well as the Drug Supply Chain Security Act, or DSCA, which regulate the distribution and tracing of prescription drug samples at the federal level, and set minimum standards for the regulation of distributors by the states. The PDMA, its implementing regulations and state laws limit the distribution of prescription pharmaceutical product samples, and the DSCA imposes requirements to ensure accountability in distribution and to identify and remove counterfeit and other illegitimate products from the market.

Section 505(b)(2) NDAs

NDAs for most new drug products are based on two full clinical studies which must contain substantial evidence of the safety and efficacy of the proposed new product for the proposed use. These applications are submitted under Section 505(b)(1) of the FDCA. The FDA is, however, authorized to approve an alternative type of NDA under Section 505(b)(2) of the FDCA. This type of application allows the applicant to rely, in part, on the FDA's previous findings of safety and efficacy for a similar product, or published literature. Specifically, Section 505(b)(2) applies to NDAs for a drug for which the investigations made to show whether or not the drug is safe for use and effective in use and relied upon by the applicant for approval of the application "were not conducted by or for the applicant and for which the applicant has not obtained a right of reference or use from the person by or for whom the investigations were conducted."

Thus, Section 505(b)(2) authorizes the FDA to approve an NDA based on safety and effectiveness data that were not developed by the applicant. NDAs filed under Section 505(b)(2) may provide an alternate and potentially more expeditious pathway to FDA approval for new or improved formulations or new uses of previously approved products. If the 505(b)(2) applicant can establish that reliance on the FDA's previous approval is scientifically appropriate, the applicant may eliminate the need to conduct certain preclinical or clinical studies of the new product. The FDA may also require companies to perform additional studies or measurements to support the change from the approved product. The FDA may then approve the new drug candidate for all or some of the label indications for which the referenced product has been approved, as well as for any new indication sought by the Section 505(b)(2) applicant.

Abbreviated New Drug Applications for Generic Drugs

In 1984, with passage of the Hatch-Waxman Amendments to the FDCA, Congress established an abbreviated regulatory scheme authorizing the FDA to approve generic drugs that are shown to contain the same active ingredients as, and to be bioequivalent to, drugs previously approved by the FDA pursuant to NDAs. To obtain approval of a generic drug, an applicant must submit an abbreviated new drug application, or ANDA, to the agency. An ANDA is a comprehensive submission that contains, among other things, data and information pertaining to the active pharmaceutical ingredient, bioequivalence, drug product formulation, specifications

and stability of the generic drug, as well as analytical methods, manufacturing process validation data and quality control procedures. ANDAs are “abbreviated” because they generally do not include preclinical and clinical data to demonstrate safety and effectiveness. Instead, in support of such applications, a generic manufacturer may rely on the preclinical and clinical testing previously conducted for a drug product previously approved under an NDA, known as the reference-listed drug, or RLD.

Specifically, in order for an ANDA to be approved, the FDA must find that the generic version is identical to the RLD with respect to the active ingredients, the route of administration, the dosage form, the strength of the drug and the conditions of use of the drug. At the same time, the FDA must also determine that the generic drug is “bioequivalent” to the innovator drug. Under the statute, a generic drug is bioequivalent to a RLD if “the rate and extent of absorption of the drug do not show a significant difference from the rate and extent of absorption of the listed drug.” Upon approval of an ANDA, the FDA indicates whether the generic product is “therapeutically equivalent” to the RLD in its publication “Approved Drug Products with Therapeutic Equivalence Evaluations,” also referred to as the “Orange Book.” Physicians and pharmacists consider a therapeutic equivalent generic drug to be fully substitutable for the RLD. In addition, by operation of certain state laws and numerous health insurance programs, the FDA’s designation of therapeutic equivalence often results in substitution of the generic drug without the knowledge or consent of either the prescribing physician or patient.

Under the Hatch-Waxman Amendments, the FDA may not approve an ANDA until any applicable period of non-patent exclusivity for the RLD has expired. The FDCA provides a period of five years of non-patent data exclusivity for a new drug containing a new chemical entity. For the purposes of this provision, a new chemical entity, or NCE, is a drug that contains no active moiety that has previously been approved by the FDA in any other NDA. An active moiety is the molecule or ion responsible for the physiological or pharmacological action of the drug substance. In cases where such NCE exclusivity has been granted, an ANDA may not be filed with the FDA until the expiration of five years unless the submission is accompanied by a Paragraph IV certification, in which case the applicant may submit its application four years following the original product approval. The FDCA also provides for a period of three years of exclusivity if the NDA includes reports of one or more new clinical investigations, other than bioavailability or bioequivalence studies, that were conducted by or for the applicant and are essential to the approval of the application.

The FDCA also provides for a period of three years of exclusivity if the NDA includes reports of one or more new clinical investigations, other than bioavailability or bioequivalence studies, that were conducted by or for the applicant and are essential to the approval of the application. This three-year exclusivity period often protects changes to a previously approved drug product, such as a new dosage form, route of administration, combination or indication. Three-year exclusivity would be available for a drug product that contains a previously approved active moiety, provided the statutory requirement for a new clinical investigation is satisfied. Unlike five-year NCE exclusivity, an award of three-year exclusivity does not block the FDA from accepting ANDAs seeking approval for generic versions of the drug as of the date of approval of the original drug product. The FDA typically makes decisions about awards of data exclusivity shortly before a product is approved.

The FDA must establish a priority review track for certain generic drugs, requiring the FDA to review a drug application within eight (8) months for a drug that has three (3) or fewer approved drugs listed in the Orange Book and is no longer protected by any patent or regulatory exclusivities, or is on the FDA’s drug shortage list. The new legislation also authorizes FDA to expedite review of ‘‘competitor generic therapies’’ or drugs with inadequate generic competition, including holding meetings with or providing advice to the drug sponsor prior to submission of the application.

Hatch-Waxman Patent Certification and the 30-Month Stay

Upon approval of an NDA or a supplement thereto, NDA sponsors are required to list with the FDA each patent with claims that cover the applicant’s product or an approved method of using the product. Each of the patents listed by the NDA sponsor is published in the Orange Book. When an ANDA applicant files its application with the FDA, the applicant is required to certify to the FDA concerning any patents listed for the reference product in the Orange Book, except for patents covering methods of use for which the ANDA applicant is not seeking approval. To the extent that the Section 505(b)(2) applicant is relying on studies conducted for an already approved product, the applicant is required to certify to the FDA concerning any patents listed for the approved product in the Orange Book to the same extent that an ANDA applicant would.

Specifically, the applicant must certify with respect to each patent that:

- the required patent information has not been filed;
- the listed patent has expired;
- the listed patent has not expired, but will expire on a particular date and approval is sought after patent expiration; or
- the listed patent is invalid, unenforceable or will not be infringed by the new product.

A certification that the new product will not infringe the already approved product's listed patents or that such patents are invalid or unenforceable is called a Paragraph IV certification. If the applicant does not challenge the listed patents or indicates that it is not seeking approval of a patented method of use, the application will not be approved until all the listed patents claiming the referenced product have expired (other than method of use patents involving indications for which the applicant is not seeking approval).

If the ANDA applicant has provided a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the NDA and patent holders once the ANDA has been accepted for filing by the FDA. The NDA and patent holders may then initiate a patent infringement lawsuit in response to the notice of the Paragraph IV certification. The filing of a patent infringement lawsuit within 45 days after the receipt of a Paragraph IV certification automatically prevents the FDA from approving the ANDA until the earlier of 30 months after the receipt of the Paragraph IV notice, expiration of the patent, or a decision in the infringement case that is favorable to the ANDA applicant.

To the extent that the Section 505(b)(2) applicant is relying on studies conducted for an already approved product, the applicant is required to certify to the FDA concerning any patents listed for the approved product in the Orange Book to the same extent that an ANDA applicant would. As a result, approval of a Section 505(b)(2) NDA can be stalled until all the listed patents claiming the referenced product have expired, until any non-patent exclusivity, such as exclusivity for obtaining approval of a new chemical entity, listed in the Orange Book for the referenced product has expired, and, in the case of a Paragraph IV certification and subsequent patent infringement suit, until the earlier of 30 months, settlement of the lawsuit or a decision in the infringement case that is favorable to the Section 505(b)(2) applicant.

Patent Term Restoration and Extension

A patent claiming a new drug product may be eligible for a limited patent term extension under the Hatch-Waxman Act, which permits a patent restoration of up to five years for patent term lost during product development and the FDA regulatory review. The restoration period granted on a patent covering a product is typically one-half the time between the effective date of a clinical investigation involving human beings is begun and the submission date of an application, plus the time between the submission date of an application and the ultimate approval date. Patent term restoration cannot be used to extend the remaining term of a patent past a total of 14 years from the product's approval date. Only one patent applicable to an approved product is eligible for the extension, and the application for the extension must be submitted prior to the expiration of the patent in question. A patent that covers multiple products for which approval is sought can only be extended in connection with one of the approvals. The United States Patent and Trademark Office reviews and approves the application for any patent term extension or restoration in consultation with the FDA.

Healthcare Law and Regulation

Healthcare providers and third-party payors play a primary role in the recommendation and prescription of drug products that are granted marketing approval. Arrangements with providers, consultants, third-party payors and customers are subject to broadly applicable fraud and abuse, anti-kickback, false claims laws, patient privacy laws and regulations and other health care laws and regulations that may constrain business and/or financial arrangements. Restrictions under applicable federal and state health care laws and regulations, include the following:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, paying, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made, in whole or in part, under a federal health care program such as Medicare and Medicaid;
- the federal civil and criminal false claims laws, including the civil False Claims Act, and civil monetary penalties laws, which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false, fictitious or fraudulent or knowingly making, using or causing to made or used a false record or statement to avoid, decrease or conceal an obligation to pay money to the federal government.
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created additional federal criminal laws that prohibit, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any health care benefit program or making false statements relating to health care matters;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, and their respective implementing regulations, including the Final Omnibus Rule published in January 2013, which impose obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;

- the federal false statements statute, which prohibits knowingly and willfully falsifying, concealing •or covering up a material fact or making any materially false statement in connection with the delivery of or payment for health care benefits, items or services;

- the federal transparency requirements known as the federal Physician Payments Sunshine Act, under the Patient Protection and Affordable Care Act, as amended by the Health Care Education Reconciliation Act, or the Affordable Care Act, which requires certain manufacturers of drugs, devices, biologics and medical supplies to report annually to the Centers for Medicare & Medicaid Services, or CMS, within the United States Department of Health and Human Services, information related to payments and other transfers of value made by that entity to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members; and

- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to health care items or services that are reimbursed by non-government third-party payors, including private insurers.

Some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring manufacturers to report information related to payments to physicians and other health care providers or marketing expenditures. State and foreign laws also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Finally, based on the conduct of some of our clinical trials oversees, we are also subject to the Foreign Corrupt Practices Act that prohibits payments to foreign public officials relating to official acts. In addition to its prohibition on bribery of foreign government officials, the Act requires companies to maintain accurate records and have vigorous internal controls. The DOJ and SEC have made FCPA enforcement a high priority. In addition, other anti-corruption laws such as the UK Bribery Act are even broader than the FCPA in that they apply to bribes offered to any person, not just government officials. There are significant criminal and civil penalties and fines that attach to violations of the FCPA.

Pharmaceutical Insurance Coverage and Health Care Reform

In the United States and markets in other countries, patients who are prescribed treatments for their conditions and providers performing the prescribed services generally rely on third-party payors to reimburse all or part of the associated health care costs. Significant uncertainty exists as to the coverage and reimbursement status of products approved by the FDA and other government authorities. Thus, even if a product candidate is approved, sales of the product will depend, in part, on the extent to which third-party payors, including government health programs in the United States such as Medicare and Medicaid, commercial health insurers and managed care organizations, provide coverage and establish adequate reimbursement levels for, the product. The process for determining whether a payor will provide coverage for a product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the product once coverage is approved. Third-party payors are increasingly challenging the prices charged, examining the medical necessity and reviewing the cost-effectiveness of medical products and services and imposing controls to manage costs. Third-party payors may limit coverage to specific products on an approved list, also known as a formulary, which might not include all of the approved products for a particular indication.

In order to secure coverage and reimbursement for any product that might be approved for sale, a company may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of the product, in addition to the costs required to obtain FDA or other comparable marketing approvals. Nonetheless, product candidates may not be considered medically necessary or cost effective. A decision by a third-party payor not to cover a product could reduce physician utilization once the product is approved and have a material adverse effect on sales, results of operations and financial condition. Additionally, a payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Further, one payor's determination to provide coverage for a product does not assure that other payors will also provide coverage and reimbursement for the product, and the level of coverage and reimbursement can differ significantly from payor to payor.

The containment of health care costs also has become a priority of federal, state and foreign governments and the prices of products have been a focus in this effort. Governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit a company's revenue generated from the sale of any approved products. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which a company or its collaborators receive marketing approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

There have been a number of federal and state proposals during the last few years regarding the pricing of pharmaceutical and biopharmaceutical products, limiting coverage and reimbursement for drugs and biologics and other medical products, government control and other changes to the health care system in the United States. In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively the ACA was enacted, which includes measures that have significantly changed health care financing by both governmental and private insurers. The provisions of the ACA of importance to the pharmaceutical and biotechnology industry are, among others, the following:

- an annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drug agents or biologic agents, which is apportioned among these entities according to their market share in certain government health care programs;
- an increase in the rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13% of the average manufacturer price for branded and generic drugs, respectively;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts to negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D;
- extension of manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations, unless the drug is subject to discounts under the 340B drug discount program;
- a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for certain individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program;
- new requirements under the federal Physician Payments Sunshine Act for drug manufacturers to report information related to payments and other transfers of value made to physicians and teaching hospitals as well as ownership or investment interests held by physicians and their immediate family members;
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research;
- creation of the Independent Payment Advisory Board, which, if and when impaneled, will have authority to recommend certain changes to the Medicare program that could result in reduced payments for prescription drugs; and
- establishment of a Center for Medicare and Medicaid Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

Other legislative changes have been proposed and adopted since the ACA was enacted. These changes include the Budget Control Act of 2011, which, among other things, led to aggregate reductions to Medicare payments to providers of up to 2% per fiscal year that started in 2013 and will stay in effect through 2024 unless additional Congressional action is taken, and the American Taxpayer Relief Act of 2012, which, among other things, reduced Medicare payments to several types of providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These new laws may result in additional reductions in Medicare and other healthcare funding and otherwise affect the prices we may obtain for any of our product candidates for which we may obtain regulatory approval or the frequency with which any such product candidate is prescribed or used. Further, there have been several recent U.S. congressional inquiries and proposed state and federal legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the costs of drugs under Medicare and reform government program reimbursement methodologies for drug products.

These healthcare reforms, as well as other healthcare reform measures that may be adopted in the future, may result in additional reductions in Medicare and other healthcare funding, more rigorous coverage criteria, new payment methodologies and additional downward pressure on the price for any approved product and/or the level of reimbursement physicians receive for administering any approved product. Reductions in reimbursement levels may negatively impact the prices or the frequency with which products are prescribed or administered. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. Since enactment of the ACA, there have been numerous legal challenges and

Congressional actions to repeal and replace provisions of the law. In May 2017, the U.S. House of Representatives passed legislation known as the American Health Care Act of 2017. Thereafter, the Senate Republicans introduced and then updated a bill to replace the ACA known as the Better Care Reconciliation Act of 2017. The Senate Republicans also introduced legislation to repeal the ACA without companion legislation to replace it, and a "skinny" version of the Better Care Reconciliation Act of 2017. In addition, the Senate considered proposed healthcare reform legislation known as the Graham-Cassidy bill. None of these measures was passed by the U.S. Senate.

The Trump Administration has also taken executive actions to undermine or delay implementation of the ACA. In January 2017, President Trump signed an Executive Order directing federal agencies with authorities and responsibilities under the ACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the ACA that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. In October 2017, the President signed a second Executive Order allowing for the use of association health plans and short-term health insurance, which may provide fewer health benefits than the plans sold through the ACA exchanges. At the same time, the Administration announced that it will discontinue the payment of cost-sharing reduction (CSR) payments to insurance companies until Congress approves the appropriation of funds for such CSR payments. The loss of the CSR payments is expected to increase premiums on certain policies issued by qualified health plans under the ACA. A bipartisan bill to appropriate funds for CSR payments was introduced in the Senate, but the future of that bill is uncertain.

More recently, with enactment of the Tax Cuts and Jobs Act of 2017, which was signed by the President on December 22, 2017, Congress repealed the "individual mandate." The repeal of this provision, which requires most Americans to carry a minimal level of health insurance, will become effective in 2019. According to the Congressional Budget Office, the repeal of the individual mandate will cause 13 million fewer Americans to be insured in 2027 and premiums in insurance markets may rise. Additionally, on January 22, 2018, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so-called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. The Congress will likely consider other legislation to replace elements of the ACA, during the next Congressional session.

Further, there have been several recent U.S. congressional inquiries and proposed federal and proposed and enacted state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the costs of drugs under Medicare and reform government program reimbursement methodologies for drug products. At the federal level, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, individual states are increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In addition, regional health care authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other health care programs. These measures could reduce the ultimate demand for our products, once approved, or put pressure on our product pricing.

Foreign Regulation

In addition to regulations in the United States, we are subject to a variety of foreign regulations governing clinical trials and may become subject to additional foreign regulations pertaining to commercial sales and distribution of our drug candidates to the extent we choose to clinically evaluate or sell any products outside of the United States. Whether or not we obtain FDA approval for a product, we must obtain approval of a product by the comparable regulatory authorities of foreign countries before we can commence clinical trials or marketing of the product in those countries. The approval process varies from country to country and the time may be longer or shorter than that required for FDA approval. The requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary greatly from country to country. As in the United States, post-approval regulatory requirements, such as those regarding product manufacture, marketing, or distribution would apply to any product that is approved for sale outside the United States.

On June 23, 2016, the electorate in the United Kingdom voted in favor of leaving the European Union ("EU") (commonly referred to as "Brexit"). Thereafter, on March 29, 2017, the country formally notified the EU of its intention to withdraw pursuant to Article 50 of the Lisbon Treaty. The withdrawal of the United Kingdom from the EU will take effect either on the effective date of the withdrawal agreement or, in the absence of agreement, two years after the United Kingdom provides a notice of withdrawal pursuant to the EU Treaty. Since the regulatory framework for pharmaceutical products in the United Kingdom. covering quality, safety and efficacy of pharmaceutical products, clinical trials, marketing authorization, commercial sales and distribution of pharmaceutical products is derived from EU directives and regulations, Brexit could materially impact the future regulatory regime which applies to products and the approval of product candidates in the United Kingdom. It remains to be seen how, if at all, Brexit will impact regulatory requirements for product candidates and products in the United Kingdom.

Employees

As of December 31, 2017, we had 56 employees, of which at least 23 hold graduate degrees (including 17 doctorate degrees) and 37 are engaged in full-time research and development activities. None of our employees are represented by a labor union, and we consider our employee relations to be good.

Our Corporate Information

We were incorporated under the laws of the State of Delaware in 2015. Our principal executive offices are located at 4170 Mendenhall Oaks Pkwy, High Point, NC 27265, and our telephone number is (336) 841-0300. We also maintain a corporate website, www.vtvtherapeutics.com, where stockholders and other interested persons may review, without charge, among other things, corporate governance materials and certain SEC filings, which are generally available on the same business day as the filing date with the SEC on the SEC's website http://www.sec.gov. The contents of our website are not made a part of this Annual Report on Form 10-K.

ITEM 1A. RISK FACTORS

Risks Relating to Our Financial Position and Need for Additional Capital

We have incurred significant losses since inception and anticipate that we will incur continued losses for the foreseeable future. We may never achieve or maintain profitability.

We are a clinical-stage biopharmaceutical company with limited operating history. We have never been profitable and do not expect to be profitable in the foreseeable future. We have incurred net losses in each year since beginning to develop our drug candidates, including net losses of approximately $16.1 million, $16.4 million and $27.5 million for the years ended December 31, 2017, 2016 and 2015, respectively. As of December 31, 2017, we had a total members' deficit of approximately $279.1 million. In addition, we have not commercialized any products and have never generated any revenue from the commercialization of any product. We have devoted most of our financial resources to research and development, including our preclinical development activities and clinical trials. We expect to incur significant additional operating losses for the next several years, at least, as we conduct our research and development activities, advance drug candidates through clinical development, complete clinical trials, seek regulatory approval and, if we receive FDA approval, commercialize our products. Furthermore, the costs of advancing drugs into each succeeding clinical phase tend to increase substantially over time. The total costs to advance any of our drug candidates to marketing approval in even a single jurisdiction would be substantial. Because of the numerous risks and uncertainties associated with pharmaceutical product development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to begin generating revenue from the commercialization of products or achieve or maintain profitability. We expect to continue to incur significant additional expenses as we continue the STEADFAST Study and other trials, begin outsourcing of the commercial manufacturing of *azeliragon* for any indications for which we receive regulatory approval, advance our other drug candidates and expand our research and development programs. Furthermore, our ability to successfully develop, commercialize and license our products and generate product revenue is subject to substantial additional risks and uncertainties, as described under "—Risks Relating to the Discovery, Development and Regulatory Approval of Our Drug Candidates" and "—Risks Relating to the Commercialization of Our Drug Candidates." As a result, we expect to continue to incur net losses and negative cash flows for the foreseeable future. These net losses and negative cash flows have had, and will continue to have, an adverse effect on our stockholders' equity and working capital. The amount of our future net losses will depend, in part, on the rate of future growth of our expenses and our ability to generate revenues. In addition, we may not be able to enter into any collaborations that will generate significant cash. If we are unable to develop and commercialize one or more of our drug candidates either alone or with collaborators, or if revenues from any drug candidate that receives marketing approval are insufficient, we will not achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability. If we are unable to achieve and then maintain profitability, the value of our equity securities will be materially and adversely affected.

Currently, we have no products approved for commercial sale, and to date we have not generated any revenue from product sales. As a result, our ability to generate revenue from products, curtail our losses and reach profitability is unproven, and we may never generate substantial product revenue.

We have no products approved for commercialization and have never generated any revenue from the commercialization of any product. Our ability to generate revenue and achieve profitability depends on our ability, alone or with strategic collaboration partners, to successfully complete the development of, and obtain the regulatory and marketing approvals necessary to commercialize one or more of our product candidates. We do not anticipate generating revenue from product sales for several years. Our ability to generate future revenue from product sales depends heavily on our success in many areas, including but not limited to:

- completing research and nonclinical and clinical development of our product candidates;
- obtaining regulatory and marketing approvals for product candidates for which we complete clinical studies;
- establishing collaborations for the development of certain of our drug candidates;
- establishing and maintaining supply and manufacturing relationships with third parties that can provide adequate, in both amount and quality, products and services to support clinical development and the market demand for our product candidates, if approved;
- launching and commercializing product candidates for which we obtain regulatory and marketing approval, either directly or with a collaborator or distributor;
- obtaining market acceptance of our product candidates as viable treatment options;
- obtaining favorable formulary placement with government and third party payors that allows for favorable reimbursement;
- addressing any competing technological and market developments;
- negotiating favorable terms in any collaboration, licensing, or other arrangements into which we may enter;
- maintaining, protecting and expanding our portfolio of intellectual property rights; and
- attracting, hiring and retaining qualified personnel.

Even if one or more of the product candidates that we develop is approved for commercial sale, we anticipate incurring significant costs associated with commercializing any approved product candidate. Our expenses could increase beyond expectations if we are required by the FDA or other regulatory authorities to perform clinical and other studies in addition to those that we currently anticipate. Even if we are able to generate revenues from the sale of any approved products, we may not become profitable and may need to obtain additional funding to continue operations.

We will need additional capital to complete the STEADFAST Study and to complete the development and commercialization of azeliragon and our other drug candidates, and there is a substantial doubt about our ability to continue as a going concern. If we are unable to raise sufficient capital for these purposes, we would be forced to delay, reduce or eliminate our product development programs.

Developing pharmaceutical products, including conducting preclinical studies and clinical trials, is expensive. We expect our research and development expenses to increase in connection with our ongoing activities, particularly as we continue the STEADFAST Study, undertake additional clinical trials of our other drug candidates and continue to work on our other research programs. Our current capital and the funds available to us under the letter agreement (the "Letter Agreement") with MacAndrews & Forbes Group LLC, an affiliate of MacAndrews & Forbes Incorporated (together with its affiliates "MacAndrews"), a related party, for its commitment to invest up to $10.0 million over a one-year period will not be sufficient for us to complete the STEADFAST Study and the development of our other drug candidates. As such, we will need to raise substantial additional capital to complete the development and commercialization of *azeliragon*, as well as the portion of the clinical trial costs imposed upon us by the Huadong License Agreement and the JDRF Agreement for *TTP273* and *TTP399*, respectively. We are seeking possible additional partnering opportunities for our GKA, GLP-1r and other drug candidates which we believe may provide additional cash for use in our operations and the continuation of the clinical trials for our drug candidates. We may also pursue other sources of financing to provide flexibility to our operating plan. The timing and availability of such financing are not yet known.

If the FDA or other regulators require that we perform additional studies beyond those we currently expect, or if there are any delays in completing our clinical trials or the development of any of our drug candidates, our expenses could increase beyond what we currently anticipate and the timing of any potential product approval may be delayed. We have no commitments or arrangements for any additional financing to fund our research and development programs other than those available to us through our Letter Agreement. We also will need to raise substantial additional capital in the future to complete the development and commercialization of *azeliragon* for additional indications and for developing our other drug candidates. Because successful development of our drug candidates is uncertain,

we are unable to estimate the actual funds required to complete research and development and commercialize and license our products under development.

Until we can generate a sufficient amount of revenue from our drug candidates, if ever, we expect to finance future cash needs through equity offerings, debt financings, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements. We may seek to access the public or private capital markets whenever conditions are favorable, even if we do not have an immediate need for additional capital at that time. If worldwide economic conditions and the international equity and credit markets deteriorate and return to depressed states, it will be more difficult for us to obtain additional equity or credit financing, when needed.

Our recurring losses, accumulated deficit and our current levels of cash and cash equivalents raise substantial doubt about our ability to continue as a going concern as of the date of this report. If we are unable to continue as a going concern, we may have to liquidate our assets and it is likely that investors will lose all or a significant part of their investments. If we seek additional financing to fund our business activities in the future and there remains substantial doubt about our ability to continue as a going concern, investors or other financing sources may be unwilling to provide additional funding to us on commercially reasonable terms or at all, and such additional funding may cause substantial dilution to our existing investors. Further, if adequate funds are not available, we may be required to delay, reduce the scope of or eliminate one or more of our research or development programs.

Our future capital requirements will depend on many factors, including:

- the progress, costs, results and timing of the STEADFAST Study, and the clinical development of *azeliragon*;
- the willingness of the FDA to accept the STEADFAST Study, as well as our other completed and planned clinical and preclinical studies and other work, as the basis for review and approval of *azeliragon*;
- the outcome, costs and timing of seeking and obtaining FDA and any other regulatory approvals;
- the number and characteristics of drug candidates that we pursue, including our drug candidates in preclinical development;
- the ability of our drug candidates to progress through clinical development successfully;
- our need to expand our research and development activities;
- the costs associated with securing, establishing and maintaining commercialization capabilities;
- the costs of acquiring, licensing or investing in businesses, products, drug candidates and technologies;
- our ability to maintain, expand and defend the scope of our intellectual property portfolio, including the amount and timing of any payments we may be required to make, or that we may receive, in connection with the licensing, filing, prosecution, defense and enforcement of any patents or other intellectual property rights;
- our need and ability to hire additional management and scientific and medical personnel;
- the effect of competing technological and market developments;
- our need to implement additional internal systems and infrastructure, including financial and reporting systems;
- the economic and other terms, timing and success of our existing licensing arrangements and any collaboration, licensing or other arrangements into which we may enter in the future; and
- the amount of any payments we are required to make to M&F TTP Holdings Two LLC in the future under the Tax Receivable Agreement.

Raising additional capital may cause dilution to our stockholders, restrict our operations or require us to relinquish rights to our technologies or drug candidates.

Until such time, if ever, as we can generate substantial revenue, we may finance our cash needs through a combination of equity offerings, debt financings, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements. We do not currently have any committed external source of funds other than those available to us through our Letter Agreement. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the interest of our stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders. Debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends.

Under the Letter Agreement, until December 5, 2018, we have the right to sell MacAndrews shares of our Class A common stock at a per share price of $4.38 per share, and MacAndrews also has the right to require us to sell it shares of our Class A common stock at the same per share price. Any shares of our Class A common stock that are sold pursuant to the Letter Agreement will dilute the interest of our stockholders. An aggregate of $10.0 million worth of Class A common stock may be sold to MacAndrews under the Letter Agreement (whether at our or MacAndrews' option). In addition, in connection with the Letter Agreement, we also issued MacAndrews warrants to purchase 198,267 shares of our Class A common stock at a price of $5.04 per share, exercisable until December 5, 2024. Sales of Class A common stock under the Letter Agreement or the related warrants may result in substantial dilution to existing investors.

If we raise additional funds through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may be required to relinquish valuable rights to our technologies, future revenue streams or drug candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market drug candidates that we would otherwise prefer to develop and market ourselves.

Our significant amount of debt could adversely affect our business, operating results and financial condition and prevent us from fulfilling our debt-related obligations.

We have a significant amount of debt. As of December 31, 2017, the total principal amount of our debt was $20.0 million, all of which was incurred under the Loan Agreement.

The Loan Agreement is secured by a first priority security interest in substantially all of our assets other than our intellectual property. Subject to certain conditions related to our Phase 3 clinical trial of *azeliragon*, we may be required to grant a security interest in our intellectual property. We have agreed not to pledge or otherwise encumber our intellectual property assets, subject to certain exceptions. The level and nature of our indebtedness could, among other things:

- make it difficult for us to obtain any necessary financing in the future;
- limit our flexibility in planning for or reacting to changes in our business;
- reduce funds available for use in our operations and other strategic initiatives;
- impair our ability to incur additional debt because of restrictive covenants or the liens on our assets that secure our current debt;
- hinder our ability to raise equity capital, because in the event of a liquidation of our business, debt holders receive a priority before equity holders;
- make us more vulnerable in the event of a downturn in our business; and
- place us at a possible competitive disadvantage relative to less leveraged competitors and competitors that have better access to capital resources.

We may also incur significantly more debt in the future, which will increase each of the risks described above related to our indebtedness.

Restrictions and covenants in the Loan Agreement limit our ability to take certain actions and impose consequences in the event of failure to comply.

The Loan Agreement contains a number of significant restrictions and covenants that limit our ability (subject in each case to limited exceptions) to, among other things,

- convey, sell, lease, transfer or otherwise dispose of certain of our assets;
- maintain a minimum cash balance of $2.5 million in a deposit account pledged to secure the Loan Agreement and subject to an account control agreement;
- engage in any business other than the businesses we currently engage in or reasonably related thereto;
- liquidate or dissolve;
- make certain management changes;
- undergo certain change of control events;
- create, incur, assume or be liable with respect to certain indebtedness;

- grant certain liens;
- pay dividends and make certain other restricted payments;
- make certain investments; and
- enter into any material transactions with any affiliates, with certain exceptions.

These covenants affect our operating flexibility by, among other things, restricting our ability to incur expenses and indebtedness that could otherwise be used to fund the costs of executing our business strategy and to grow our business, as well as to fund general corporate purposes. Our ability to comply with these covenants may be affected by events beyond our control and we may not be able to meet these covenants. A breach under the Loan Agreement would permit our lenders to accelerate amounts outstanding thereunder. We may not have sufficient funds at the time of any such breach to repay, in full or in part, the borrowings under the Loan Agreement.

We have a limited operating history, and we expect a number of factors to cause our operating results to fluctuate on a quarterly and annual basis, which may make it difficult to predict our future performance.

We are a clinical stage biopharmaceutical company with a limited operating history. Our operations to date have been primarily limited to developing our technology and undertaking preclinical studies and clinical trials of *azeliragon* and our other drug candidates. We have not yet obtained regulatory approvals for *azeliragon* or any of our other drug candidates. Consequently, any statements about our future success or viability are not based on any substantial operating history or commercialized products. Our financial condition and operating results have varied significantly in the past and will continue to fluctuate from quarter-to-quarter or year-to-year due to a variety of factors, many of which are beyond our control. As a result, we may never successfully develop and commercialize a product, which could lead to a material adverse effect on the value of any investment in our securities.

Risks Relating to the Discovery, Development and Regulatory Approval of Our Drug Candidates

Clinical drug development involves a lengthy and expensive process with an uncertain outcome, and failure can occur at any stage of clinical development. Because the results of earlier clinical trials are not necessarily predictive of future results, any drug candidate we advance through various stages of clinical trials or development may not have favorable results in later stages of clinical trials or development or receive regulatory approval.

Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any stage of clinical development. Clinical trials may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical or preclinical trials. In addition, data obtained from trials are susceptible to varying interpretations, and regulators may not interpret our data as favorably as we do, which may delay, limit or prevent regulatory approval. For example, although treatment in our Phase 2b clinical trial in mild-to-moderate AD patients was discontinued early due to the findings of an interim futility analysis conducted approximately 12 months after all subjects were randomized, subsequent statistical analyses conducted in accordance with the protocol-specified statistical analysis plan found a statistically significant improvement, as described further under "Business—Our Alzheimer's Program − *Azeliragon*—Completed Phase 2b Trial (TTP488-203)." Furthermore, an analysis of *azeliragon* in the subgroup of AD patients with MMSE scores of 21-26 (which are the mild AD patients that are the subjects of our Phase 3 STEADFAST Study) found that *azeliragon* had more pronounced efficacy in that subgroup. While we have reached an agreement with the FDA for our Phase 3 trial of *azeliragon* under a special protocol assessment, or SPA, there can be no assurance that the results of this Phase 3 trial will be consistent with the findings of our analyses from the Phase 2b trial. Success in preclinical testing and early clinical trials does not ensure that later clinical trials will generate the same results or otherwise provide adequate data to demonstrate the efficacy and safety of a drug candidate. Frequently, drug candidates that have shown promising results in early clinical trials have subsequently suffered significant setbacks in later clinical trials. In addition, the design of a clinical trial can determine whether its results will support approval of a product and flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced. While members of our management team have experience in designing clinical trials, our company has limited experience in designing clinical trials, and we may be unable to design and execute a clinical trial to support regulatory approval. Further, clinical trials of potential products often reveal that it is not practical or feasible to continue development efforts. For example, if the results of the STEADFAST Study do not achieve the primary efficacy endpoints or demonstrate safety, the prospects for approval of *azeliragon* would be materially and adversely affected. If *azeliragon* or our other drug candidates are found to be unsafe or lack efficacy, we will not be able to obtain regulatory approval for them and our business would be materially harmed.

While we have negotiated a special protocol assessment, or SPA, agreement with the FDA relating to the STEADFAST Study, this agreement does not guarantee approval of azeliragon or any other particular outcome from regulatory review of the study or the drug candidate.

We have reached agreement with the FDA to conduct the STEADFAST Study, our Phase 3 trial of *azeliragon* pursuant to an SPA agreement. The FDA's SPA process is designed to facilitate the FDA's review and approval of drugs by allowing the FDA to evaluate

the proposed design and size of Phase 3 trials that are intended to form the primary basis for determining a drug product's efficacy. Upon specific request by a clinical trial sponsor, the FDA will evaluate the protocol and respond to a sponsor's questions regarding, among other things, primary efficacy endpoints, trial design and data analysis plans, within 45 days of receipt of the request. The FDA ultimately assesses whether the protocol design and planned analysis of the trial are acceptable to support regulatory approval of the drug candidate with respect to its effectiveness against the indication studied. All agreements and disagreements between the FDA and the sponsor regarding an SPA must be clearly documented in an SPA letter or the minutes of a meeting between the sponsor and the FDA. Nevertheless, an SPA agreement does not guarantee approval of a drug candidate, and even if the FDA agrees to the design, execution and analysis proposed in protocols reviewed under the SPA process, the FDA may revoke or alter its agreement in certain circumstances. In particular, an SPA agreement is not binding on the FDA if public health concerns emerge that were unrecognized at the time of the SPA agreement, other new scientific concerns regarding product safety or efficacy arise, the sponsor company fails to comply with the agreed upon trial protocols, or the relevant data, assumptions or information provided by the sponsor in a request for the SPA change or are found to be false or omit relevant facts. In addition, even after an SPA agreement is finalized, the SPA agreement may be modified, and such modification will be deemed binding on the FDA review division, except under the circumstances described above, if the FDA and the sponsor agree in writing to modify the protocol and such modification is intended to improve the study. The FDA retains significant latitude and discretion in interpreting the terms of the SPA agreement and the data and results from any study that is the subject of the SPA agreement.

In addition to the risk that the FDA may decide that we have not met conditions for approval notwithstanding the terms of the SPA, our Phase 3 trial of *azeliragon* may not be completed in material accordance with the SPA agreement and the data generated may not meet the endpoints that have been agreed in the SPA to represent adequate evidence of effectiveness, and, for those or other reasons, may not result in any FDA approval for *azeliragon*. We expect that the FDA will review our compliance with the protocol under our SPA agreement and that it will conduct inspections of some of the more than 100 sites where the clinical trial will be conducted. Each of the clinical trial sites may not pass such FDA inspections, and negative inspection results could significantly delay or prevent any potential approval for *azeliragon*. Even if we believe that the data collected from the Phase 3 trial demonstrate adequate evidence of efficacy in accordance with the SPA, if the FDA revokes or alters its agreement under the SPA, or if the FDA interprets the data collected from the clinical trial differently than we do, the FDA may not deem the data sufficient to support an application for regulatory approval, which could materially adversely affect our business, financial condition and results of operations.

Fast Track designation for one or more of our product candidates may not actually lead to a faster development or regulatory review or approval process.

If a product is intended for the treatment of a serious condition and nonclinical or clinical data demonstrate the potential to address unmet medical need for this condition, a product sponsor may apply for FDA Fast Track designation. The FDA granted Fast Track designation to azeliragon. Fast Track designation does not ensure that we will receive marketing approval or that approval will be granted within any particular timeframe. We may not experience a faster development or regulatory review or approval process with Fast Track designation compared to conventional FDA procedures. In addition, the FDA may withdraw Fast Track designation if it believes that the designation is no longer supported by data from our clinical development program. Fast Track designation alone does not guarantee qualification for the FDA's priority review procedures.

We cannot be certain that azeliragon or any of our other drug candidates will receive regulatory approval, and without regulatory approval we will not be able to market our drug candidates and generate revenue from products. Any delay in the regulatory review or approval of azeliragon or any of our other drug candidates will materially and adversely affect our business.

We have invested a significant portion of our efforts and financial resources in the development of *azeliragon*, our most advanced drug candidate. Our ability to generate revenue related to product sales, which we do not expect will occur for at least the next several years, if ever, will depend on the successful development and regulatory approval of our drug candidates. We may conduct the STEADFAST Study only to learn that *azeliragon* is not a safe or effective treatment, in which case the STEADFAST Study may not lead to regulatory approval for *azeliragon*. Similarly, our clinical development programs for our other drug candidates may not lead to regulatory approval from the FDA and similar foreign regulatory agencies. This failure to obtain regulatory approvals would prevent our drug candidates from being marketed and would prevent us from generating revenue from our drug candidates, which would have a material and adverse effect on our business.

All of our drug candidates require regulatory review and approval prior to commercialization, and generally, only a small percentage of pharmaceutical products under development are ultimately approved for commercial sale. This is particularly true in the area of treatments for Alzheimer's disease, where pharmaceutical development has been particularly challenging. Moreover, any delays in the regulatory review or approval of our drug candidates would delay market launch, increase our cash requirements and result in additional operating losses.

The process of obtaining FDA and other required regulatory approvals, including foreign approvals, often takes many years and can vary substantially based upon the type, complexity and novelty of the products involved. Furthermore, this approval process is extremely complex, expensive and uncertain, and failure to comply with applicable regulatory requirements can, among other things, result in the suspension of regulatory approval as well as possible civil and criminal sanctions. We may be unable to submit any new drug application, or an NDA, in the United States or any marketing approval application in foreign jurisdictions for any of our products. If we submit an NDA including any amended NDA or supplemental NDA, to the FDA seeking marketing approval for any of our drug candidates, the FDA must decide whether to accept or reject the submission for filing. We cannot be certain that any of these submissions will be accepted for filing and reviewed by the FDA, or that the marketing approval application submissions to any other regulatory authorities will be accepted for filing and review by those authorities. We cannot be certain that we will be able to respond to any regulatory requests during the review period in a timely manner, or at all, without delaying potential regulatory action. We also cannot be certain that any of our drug candidates will receive favorable recommendations from any FDA advisory committee or foreign regulatory bodies or be approved for marketing by the FDA or foreign regulatory authorities. In addition, delays in approvals or rejections of marketing applications may be based upon many factors, including regulatory requests for additional analyses, reports, data and studies, regulatory questions regarding data and results, changes in regulatory policy during the period of product development and the emergence of new information regarding *azeliragon* or our other drug candidates.

Data obtained from preclinical studies and clinical trials are subject to different interpretations, which could delay, limit or prevent regulatory review or approval of any of our drug candidates. Furthermore, regulatory attitudes towards the data and results required to demonstrate safety and efficacy can change over time and can be affected by many factors, such as the emergence of new information, including on other products, policy changes and agency funding, staffing and leadership. We do not know whether future changes to the regulatory environment will be favorable or unfavorable to our business prospects.

In addition, the environment in which our regulatory submissions may be reviewed changes over time. For example, average review times at the FDA for NDAs have fluctuated over the last ten years, and we cannot predict the review time for any of our submissions with any regulatory authorities. Review times can be affected by a variety of factors, including budget and funding levels and statutory, regulatory and policy as well as personnel changes at the FDA. Moreover, in light of widely publicized events concerning the safety risk of certain drug products, regulatory authorities, members of the U.S. Government Accountability Office, medical professionals and the general public have raised concerns about potential drug safety issues. These events have resulted in the withdrawal of drug products, revisions to drug labeling that further limit use of the drug products and establishment of REMS, measures that may, for instance, place restrictions on the distribution of new drug products. The increased attention to drug safety issues may result in a more cautious approach by the FDA to clinical trials. Data from clinical trials may receive greater scrutiny with respect to safety, which may make the FDA or other regulatory authorities more likely to delay or terminate clinical trials before completion, or require longer or additional clinical trials that may result in substantial additional expense and a delay or failure in obtaining approval or may result in approval for a more limited indication than originally sought.

In addition, approval policies, regulations, or the type and amount of clinical data necessary to gain approval may change during the course of a drug candidate's clinical development and may vary among jurisdictions, and approval in one jurisdiction does not guarantee approval in any other jurisdiction. Our drug candidates could fail to receive regulatory approval for many reasons, including the following:

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that a drug candidate is safe and effective for its proposed indication;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- we may be unable to demonstrate that a drug candidate's clinical and other benefits outweigh its safety risks;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- the data collected from clinical trials of our drug candidates may not be sufficient to support the submission of an NDA or other submission or to obtain regulatory approval in the United States or elsewhere;
- the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of third-party manufacturers with which we contract for clinical and commercial supplies;

- the FDA or comparable foreign regulatory authorities may fail to approve the companion diagnostics we contemplate developing with partners; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

This lengthy approval process as well as the unpredictability of future clinical trial results may result in our failing to obtain regulatory approval to market our drug candidates, which would significantly harm our business, results of operations and prospects.

In addition, even if we were to obtain approval, regulatory authorities may approve any of our drug candidates for fewer or more limited indications than we request, may not approve the price we intend to charge for our products, may grant approval contingent on the performance of costly post-marketing clinical trials, or may approve a drug candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that drug candidate. For example, even if *azeliragon* receives regulatory approval, it may not be approved by the FDA as a disease modifying treatment. To date, the FDA has not approved any drugs for the treatment of AD as disease modifying. Any of the foregoing scenarios could materially harm the commercial prospects for our drug candidates.

The results of previous clinical trials may not be predictive of future results, and the results of our current and planned clinical trials may not satisfy the requirements of the FDA or non-U.S. regulatory authorities.

We currently have no drugs approved for sale and we cannot guarantee that we will ever have marketable drugs. Clinical failure can occur at any stage of clinical development. Clinical trials may produce negative or inconclusive results, and we or any collaborators may decide, or regulators may require us, to conduct additional clinical trials or preclinical studies. We will be required to demonstrate with substantial evidence through well-controlled clinical trials that our drug candidates are safe and effective for use in a diverse population before we can seek regulatory approvals for their commercial sale. Success in early-stage clinical trials does not mean that future larger registration clinical trials will be successful because drug candidates in later-stage clinical trials may fail to demonstrate sufficient safety and efficacy to the satisfaction of the FDA and non-U.S. regulatory authorities despite having progressed through early-stage clinical trials. Drug candidates that have shown promising results in early-stage clinical trials may still suffer significant setbacks in subsequent registration clinical trials. Additionally, the outcome of preclinical studies and early-stage clinical trials may not be predictive of the success of later-stage clinical trials, and interim results of a clinical trial are not necessarily indicative of final results.

The FDA or non-U.S. regulatory authorities may disagree with our and/or our clinical trial investigators' interpretation of data from clinical trials in determining if serious adverse or unacceptable side effects are drug-related.

We, and our clinical trial investigators, currently determine if serious adverse or unacceptable side effects are drug-related. The FDA or non-U.S. regulatory authorities may disagree with our or our clinical trial investigators' interpretation of data from clinical trials and the conclusion by us or our clinical trial investigators that a serious adverse effect or unacceptable side effect was not drug-related. The FDA or non-U.S. regulatory authorities may require more information, including additional preclinical or clinical data to support approval, which may cause us to incur additional expenses, delay or prevent the approval of one of our drug candidates, and/or delay or cause us to change our commercialization plans, or we may decide to abandon the development or commercialization of the drug candidate altogether.

Changes in law could have a negative impact on the approval of our drug candidates.

The FDA has established regulations, guidelines and policies to govern the drug development and approval process, as have foreign regulatory authorities. Any change in regulatory requirements resulting from the adoption of new legislation, regulations or policies may require us to amend existing clinical trial protocols or add new clinical trials to comply with these changes. Such amendments to existing protocols or clinical trial applications or the need for new ones, may significantly and adversely affect the cost, timing and completion of the clinical trials for our drug candidates. In addition, the FDA's policies may change and additional government regulations may be issued that could prevent, limit or delay regulatory approval of our drug candidates, or impose more stringent product labeling and post-marketing testing and other requirements. If we are slow or unable to adapt to any such changes, our business, prospects and ability to achieve or sustain profitability would be adversely affected.

Under the CURES Act and the Trump Administration's regulatory reform initiatives, the FDA's policies, regulations and guidance may be revised or revoked and that could prevent, limit or delay regulatory approval of our product candidates, which would impact our ability to generate revenue.

In December 2016, the 21st Century Cures Act, or Cures Act, was signed into law. The Cures Act, among other things, is intended to modernize the regulation of drugs and spur innovation, but its ultimate implementation is unclear. If we are slow or unable to adapt to

changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability, which would adversely affect our business, prospects, financial condition and results of operations.

We also cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative or executive action, either in the United States or abroad. For example, certain policies of the Trump administration may impact our business and industry. Namely, the Trump administration has taken several executive actions, including the issuance of a number of Executive Orders, that could impose significant burdens on, or otherwise materially delay, the FDA's ability to engage in routine regulatory and oversight activities such as implementing statutes through rulemaking, issuance of guidance, and review and approval of marketing applications. An under-staffed FDA could result in delays in the FDA's responsiveness or in its ability to review submissions or applications, issue regulations or guidance, or implement or enforce regulatory requirements in a timely fashion or at all. Moreover, on January 30, 2017, President Trump issued an Executive Order, applicable to all executive agencies, including the FDA, which requires that for each notice of proposed rulemaking or final regulation to be issued in fiscal year 2017, the agency shall identify at least two existing regulations to be repealed, unless prohibited by law. These requirements are referred to as the "two-for-one" provisions. This Executive Order includes a budget neutrality provision that requires the total incremental cost of all new regulations in the 2017 fiscal year, including repealed regulations, to be no greater than zero, except in limited circumstances. For fiscal years 2018 and beyond, the Executive Order requires agencies to identify regulations to offset any incremental cost of a new regulation and approximate the total costs or savings associated with each new regulation or repealed regulation. In interim guidance issued by the Office of Information and Regulatory Affairs within OMB on February 2, 2017, the administration indicates that the "two-for-one" provisions may apply not only to agency regulations, but also to significant agency guidance documents. In addition, on February 24, 2017, President Trump issued an executive order directing each affected agency to designate an agency official as a "Regulatory Reform Officer" and establish a "Regulatory Reform Task Force" to implement the two-for-one provisions and other previously issued executive orders relating to the review of federal regulations, however it is difficult to predict how these requirements will be implemented, and the extent to which they will impact the FDA's ability to exercise its regulatory authority. If these executive actions impose constraints on the FDA's ability to engage in oversight and implementation activities in the normal course, our business may be negatively impacted.

Delays in the commencement, enrollment and completion of our clinical trials could result in increased costs to us and delay or limit our ability to obtain regulatory approval for azeliragon and our other drug candidates.

Delays in the commencement, enrollment and completion of clinical trials could increase our product development costs or limit the regulatory approval of our drug candidates. We commenced the STEADFAST Study in April 2015 and have successfully completed the enrollment of both of its sub-studies; however, this clinical trial and reports of data from the study may not be completed on schedule, if at all. In addition, we do not know whether planned clinical trials of *azeliragon* in additional indications and of our other drug candidates will begin on time or will be completed on schedule or at all. The commencement, enrollment and completion of the STEADFAST Study or other clinical trials can be delayed for a variety of reasons, including:

- inability to reach agreements on acceptable terms with prospective CROs and trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- regulatory objections to commencing a clinical trial;
- inability to identify and maintain a sufficient number of trial sites, many of which may already be engaged in other clinical trial programs, including some that may be for the same indication as our drug candidates;
- withdrawal of clinical trial sites from our clinical trials as a result of changing standards of care or the ineligibility of a site to participate in our clinical trials;
- inability to obtain institutional review board, or IRB, approval to conduct a clinical trial;
- difficulty recruiting and enrolling subjects to participate in clinical trials for a variety of reasons, including willingness of subjects to undergo required study procedures, meeting the enrollment criteria for our study and competition from other clinical trial programs for the same indication as our drug candidates;
- inability to recruit and retain subjects in clinical trials due to the treatment protocol, personal issues, side effects from the therapy or lack of efficacy; and
- difficulty in importing and exporting clinical trial materials and study samples.

Patient enrollment, a significant factor in the timing of clinical trials, is affected by many factors including the size and nature of the patient population, the proximity of patients to clinical sites, the eligibility criteria for the trial, the design of the clinical trial, competing clinical trials and clinicians' and patients' perceptions as to the potential advantages of the drug being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating. Furthermore, we rely

on CROs and clinical trial sites to ensure the proper and timely conduct of our clinical trials and while we have agreements governing their committed activities, we have limited influence over their actual performance.

We could also encounter delays if a clinical trial is suspended or terminated by us, by the IRBs of the institutions in which such trials are being conducted, by the DSMB, for such trial or by the FDA or other regulatory authorities. Such authorities may impose such a suspension or termination due to a number of factors, including:

- failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols;
- failure to pass inspection of the clinical trial operations or trial sites by the FDA or other regulatory authorities;
- failure of any contract manufacturing organizations, or CMOs, that we use to comply with current Good Manufacturing Practices, or cGMPs;
- unforeseen safety issues or any determination that a clinical trial presents unacceptable health risks;
- failure to demonstrate benefit from using the drug;
- changes in the regulatory requirement and guidance; or
- lack of adequate funding to continue the clinical trial due to unforeseen costs resulting from enrollment delays, requirements to conduct additional trials and studies, increased expenses associated with the services of our CROs and other third parties or other reasons.

Moreover, principal investigators for our clinical trials may serve as scientific advisors or consultants to us from time to time and receive compensation in connection with such services. Under certain circumstances, we may be required to report some of these relationships to the FDA. The FDA may conclude that a financial relationship between us and a principal investigator has created a conflict of interest or otherwise affected interpretation of the study. The FDA may therefore question the integrity of the data generated at the applicable clinical trial site and the utility of the clinical trial itself may be jeopardized. This could result in a delay in approval, or rejection, of our marketing applications by the FDA and may ultimately lead to the denial of marketing approval of one or more of our product candidates.

If we experience delays in the completion of, or termination of, any clinical trial of our drug candidates, the commercial prospects of our drug candidates will be harmed, and our ability to generate product revenues from any of these drug candidates will be delayed. In addition, any delays in completing our clinical trials will increase our costs, slow down our drug candidate development and approval process and jeopardize our ability to commence product sales and generate revenues. Any of these occurrences may harm our business, financial condition and prospects significantly. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our drug candidates.

We have never completed a Phase 3 clinical trial or submitted an NDA before and may be unable to do so for azeliragon and other drug candidates we are developing.

The conduct of Phase 3 clinical trials and the submission of a successful NDA is a complicated process. As a team, we have never conducted a Phase 3 clinical trial before, have limited experience in preparing, submitting and prosecuting regulatory filings, and have not submitted an NDA before. Consequently, we may be unable to successfully and efficiently execute and complete these planned clinical trials in a way that leads to NDA submission and approval of *azeliragon* and other drug candidates we are developing. We may require more time and incur greater costs than our competitors and may not succeed in obtaining regulatory approvals of drug candidates that we develop. Failure to commence or complete, or delays in, our planned clinical trials would prevent or delay commercialization of *azeliragon* and other drug candidates we are developing.

Our drug candidates may cause serious adverse events or undesirable side effects which may delay or prevent marketing approval, or, if approval is received, require them to be taken off the market, require them to include safety warnings or otherwise limit their sales.

Serious adverse events or undesirable side effects from *azeliragon* or any of our other drug candidates could arise either during clinical development or, if approved, after the approved product has been marketed. The results of future clinical trials, including the STEADFAST Study, may show that our drug candidates cause serious adverse events or undesirable side effects, which could interrupt, delay or halt clinical trials, resulting in delay of, or failure to obtain, marketing approval from the FDA and other regulatory authorities or could result in a more restrictive label if our drug candidates are approved. For example, in a Phase 2 study, patients treated with *azeliragon* at a dose of 20 mg/day experienced a higher level of adverse events including confusion and falls that ultimately led to discontinuation of the study at that dose, but such elevated levels of adverse events were not observed at the 5 mg/day dose.

If *azeliragon* or any of our other drug candidates cause serious adverse events or undesirable side effects either during clinical development, or after marketing approval, if obtained:

- regulatory authorities, IRBs, or the DSMB may impose a clinical hold, or we may decide on our own to suspend or terminate a study, which could result in substantial delays and adversely impact our ability to continue development of the product;
- regulatory authorities may require the addition of labeling statements, specific warnings, contraindications or field alerts to study subjects, investigators, physicians or pharmacies;
- we may be required to change the product design or the way the product is administered, conduct additional clinical trials or change the labeling of the product;
- we may be required to implement a REMS, which could result in substantial cost increases or signification limitations on distribution or have a negative impact on our ability to successfully commercialize the product;
- we may be required to limit the patients who can receive the product;
- we may be subject to limitations on how we promote the product;
- sales of the product may decrease significantly;
- regulatory authorities may require us to take our approved product off the market;
- we may be subject to litigation or product liability claims; and
- our reputation may suffer.

Any of these events could prevent us from obtaining approval, or achieving or maintaining market acceptance of the affected product, if approved, or could substantially increase commercialization costs and expenses, which in turn could delay or prevent us from generating significant revenues from the sale of our products.

Azeliragon and our other drug candidates employ novel mechanisms of action and may never be approved or accepted by their intended markets.

Azeliragon and a number of our other drug candidates have novel mechanisms of action. *Azeliragon* targets RAGE, a novel mechanism of action for the treatment of AD. We are not aware of any other products under development that target RAGE. Our future success depends on our ability to complete the STEADFAST Study of *azeliragon* successfully, obtain market approval for and successfully commercialize *azeliragon*, as well as our ability to develop and market other drug candidates. The scientific discoveries that form the basis of our drug candidates are relatively new. We are not aware of any other drugs for the treatment of AD that have the same mechanism of action as *azeliragon* and even if *azeliragon* is approved, physicians may not be willing to use it. If we do not successfully develop and commercialize drug candidates based upon our technological approach, we may not become profitable and the value of our common stock may decline.

Evidence of the effectiveness of *azeliragon* in humans is limited to data generated in a single Phase 2b study and to the group of patients in that study receiving the lower, 5 mg/day, dose of the drug. Patients in that study who received the higher, 20 mg/day, dose of the drug tended to experience adverse events. The FDA has granted Fast Track designation to our *azeliragon* development program based on our pre-clinical (animal) studies and not based on our Phase 2b study. The results of the Phase 2b study may not be replicated in our Phase 3 STEADFAST Study, and the FDA may not approve *azeliragon* for commercial use.

In addition, regulatory approval of novel drug candidates such as *azeliragon* and our other drug candidates using novel mechanisms of action can be more expensive and take longer than other, more well-known or extensively studied pharmaceutical or biopharmaceutical products, due to our and regulatory agencies' lack of experience with them. We are not aware of the FDA reviewing any other products targeting RAGE as a mechanism of action to date. This lack of experience may lengthen the regulatory review process, require us to conduct additional studies or clinical trials, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of these drug candidates or lead to significant post-approval limitations or restrictions.

We have conducted, and may in the future conduct, clinical trials for certain of our product candidates at sites outside the United States, and the FDA may not accept data from trials conducted in such locations.

We are conducting a portion of the STEADFAST Study outside the United States. Also, we are required to conduct a portion of the Phase 2 MRCT outside the United States pursuant to the Huadong License Agreement. We may in the future choose to conduct

additional clinical trials outside the United States. Although the FDA may accept data from clinical trials conducted outside the United States, acceptance of this data is subject to certain conditions imposed by the FDA. For example, the clinical trial must be well designed and conducted and performed by qualified investigators in accordance with ethical principles. The trial population must also adequately represent the U.S. population, and the data must be applicable to the U.S. population and U.S. medical practice in ways that the FDA deems clinically meaningful. Generally, the patient population for any clinical trials conducted outside of the United States must be representative of the population for whom we intend to seek approval in the United States. In addition, while these clinical trials are subject to the applicable local laws, FDA acceptance of the data will be dependent upon its determination that the trials also complied with all applicable U.S. laws and regulations. There can be no assurance that the FDA will accept data from trials conducted outside of the United States. If the FDA does not accept the data from any of our clinical trials that we determine to conduct outside the United States, it would likely result in the need for additional trials, which would be costly and time-consuming and could delay or permanently halt the development of a product candidate.

In addition, the conduct of clinical trials outside the United States could have a significant impact on us. Risks inherent in conducting international clinical trials include:

- foreign regulatory requirements that could restrict or limit our ability to conduct our clinical trials;
- administrative burdens of conducting clinical trials under multiple foreign regulatory schema;
- foreign exchange fluctuations; and
- diminished protection of intellectual property in some countries, particularly in Asia.

Risks Relating to the Commercialization of Our Drug Candidates

If any of our drug candidates for which we receive regulatory approval do not achieve broad market acceptance, the revenues that are generated from their sales will be limited.

The commercial success of *azeliragon* and our other drug candidates, if approved, will depend upon the acceptance of these products among physicians, healthcare payors, patients and others in the medical community. The degree of market acceptance of our drug candidates will depend on a number of factors, including:

- limitations or warnings contained in a product's FDA-approved labeling;
- changes in the standard of care or the availability of alternative therapies for the targeted indications for any of our drug candidates;
- limitations in the approved indications for our drug candidates;
- demonstrated clinical safety and efficacy compared to other products;
- lack of significant adverse side effects;
- education, sales, marketing and distribution support;
- availability and degree of coverage and reimbursement from third-party payors;
- timing of market introduction and perceived effectiveness of competitive products;
- cost-effectiveness;
- availability of alternative therapies at similar or lower cost, including generics, biosimilar and over-the-counter products;
- adverse publicity about our drug candidates or favorable publicity about competitive products;
- convenience and ease of administration of our products;
- potential product liability claims; and
- government-imposed pricing restrictions.

If our drug candidates are approved, but do not achieve an adequate level of acceptance by physicians, healthcare payors, patients and others in the medical community, sufficient revenue may not be generated from these products, and we may not become or remain profitable. In addition, efforts to educate the medical community and third-party payors on the benefits of our drug candidates may require significant resources and may not be successful.

If, in the future, we are unable to establish sales and marketing capabilities or enter into agreements with third parties to sell and market our drug candidates, we may not be successful in commercializing our drug candidates if and when they are approved.

We do not have a sales or marketing infrastructure and have no experience in the sale or marketing of pharmaceutical drugs. To achieve commercial success for any approved drug for which sales and marketing is not the responsibility of any strategic collaborator that we may have in the future, we must either develop a sales and marketing organization or outsource these functions to other third parties. In the future, we may choose to build a sales and marketing infrastructure to market our drug candidates, if and when they are approved, or enter into collaborations with respect to the sale and marketing of our drug candidate.

There are risks involved with both establishing our own sales and marketing capabilities and entering into arrangements with third parties to perform these services. For example, recruiting and training a sales force is expensive and time-consuming and could delay any commercial launch of a drug candidate. If the commercial launch of a drug candidate for which we recruit a sales force and establish marketing capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

Factors that may inhibit our efforts to commercialize our drugs on our own include:

- our inability to recruit and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe any future drugs;
- the lack of complementary drugs to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive drug lines;
- unforeseen costs and expenses associated with creating an independent sales and marketing organization; and
- inability to obtain sufficient coverage and reimbursement from third-party payors and governmental agencies.

Entering into arrangements with third parties to perform sales and marketing services may result in lower revenues from the sale of drug or the profitability of these revenues to us than if we were to market and sell any drugs that we develop ourselves. In addition, we may not be successful in entering into arrangements with third parties to sell and market our drug candidates or may be unable to do so on terms that are favorable to us. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our drugs effectively. If we do not establish sales and marketing capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our drug candidates.

Even if our drug candidates receive regulatory approval, we will still be subject to ongoing obligations and continued regulatory review, which may result in significant additional expense, and we may still face future development and regulatory difficulties.

Even if regulatory approval is obtained for any of our drug candidates, regulatory authorities may still impose significant restrictions on a product's indicated uses or marketing or impose ongoing requirements for potentially costly post-approval studies. Given the number of high profile adverse safety events with certain drug products, regulatory authorities may require, as a condition of approval, costly REMS, which may include safety surveillance, restricted distribution and use, patient education, enhanced labeling, expedited reporting of certain adverse events, pre-approval of promotional materials and restrictions on direct-to-consumer advertising. For example, any labeling approved for any of our drug candidates may include a restriction on the term of its use, or it may not include one or more of our intended indications or patient populations. Furthermore, any new legislation addressing drug safety issues could result in delays or increased costs during the period of product development, clinical trials and regulatory review and approval, as well as increased costs to assure compliance with any new post-approval regulatory requirements.

Our drug candidates will also be subject to ongoing regulatory requirements for the labeling, packaging, storage, advertising, promotion, record-keeping and submission of safety and other post-market information. In addition, sellers of approved products, manufacturers and manufacturers' facilities are required to comply with extensive FDA requirements, including ensuring that quality control and manufacturing procedures conform to cGMP. As such, we and our CMOs are subject to continual review and periodic inspections to assess compliance with cGMP and the terms and conditions of approvals. Accordingly, we and others with whom we work must continue to expend time, money and effort in all areas of regulatory compliance, including manufacturing, production and quality control. We will also be required to report certain adverse reactions and production problems, if any, to the FDA, and to comply with certain requirements concerning advertising and promotion for our products. Promotional communications with respect to prescription drugs are subject to a variety of legal and regulatory restrictions and must be consistent with the information in the product's approved label. As such, we may not promote our products for indications or uses for which they do not have approval.

If a regulatory agency discovers problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, or objects to the promotion, marketing or labeling of a product, it may

impose restrictions on that product or us, including requiring withdrawal of the product from the market. If our drug candidates fail to comply with applicable regulatory requirements, a regulatory agency may:

- issue warning letters or untitled letters;
- mandate modifications to promotional materials or require us to disseminate corrective information to healthcare practitioners or other parties;
- require us to enter into a consent decree or permanent injunction, which can include imposition of various fines, reimbursements for inspection costs, required due dates for specific actions and penalties for noncompliance;
- impose other civil or criminal penalties;
- suspend or withdraw regulatory approval;
- suspend any ongoing clinical trials;
- refuse to approve pending applications or supplements to approved applications filed by us;
- impose restrictions on operations, including costly new manufacturing requirements; or
- seize or detain products or require a product recall.

The FDA's policies may change, and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our drug candidates. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained, which would adversely affect our business, prospects and ability to achieve or sustain profitability.

We expect that our existing and future drug candidates will face competition, and most of our competitors have significantly greater resources than we do.

The biopharmaceutical industry is characterized by intense competition and rapid innovation. Our potential competitors include large pharmaceutical and biotechnology companies, specialty pharmaceutical companies, generic or biosimilar drug companies, universities and other research institutions. Our drug candidates, if successfully developed and approved, will compete in crowded and competitive markets. In order to compete with approved products, our drug candidates will need to demonstrate compelling advantages. We believe the key competitive factors that will affect the development and commercial success of our drug candidates are efficacy, safety and tolerability profile, mechanism of action, control and predictability, convenience of dosing and price and reimbursement. Our most advanced drug candidate, *azeliragon*, is being developed for use in the treatment of patients with mild AD receiving a standard of care with an aceytlcholinesterase inhibitor and/or memantine. If approved for this indication, new competitors may emerge and *azeliragon* may face competition from several therapies currently in clinical development that address different mechanisms of action than *azeliragon*.

Potential competitors with products in late stage clinical development are Biogen Inc, with its drug candidate aducanumab and Roche with its drug candidate gantenerumab.

Our drug candidates TTP399 and TTP273, compounds for treating type 2 diabetes, would compete with both marketed non-insulin anti-diabetic medications and non-insulin anti-diabetic agents that are in clinical development. Competition is high among novel drug classes for the treatment of type 2 diabetes. Products that are currently available that may compete with TTP399 and TTP273 include DPP-4 inhibitors, such as sitagliptin or saxagliptin, SGLT-2 inhibitors, such as dapagliflozin and canagliflozin, and GLP-1 agonists, such as liraglutide and exenatide. Companies with GKAs in early clinical development that may compete with TTP399 include Hua Medicine Ltd., Yabao Pharmaceutical Co, Inc., Pegbio Co. Ltd. and Teijin Pharma Limited. Oral GLP-1 agonists in clinical development that may compete with TTP273 include oral semaglutide being developed by Novo Nordisk A/S and ORMD-0901 being developed by Oramed.

In type 1 diabetes, oral non-insulin agents that are currently being developed that may compete with TTP399 include SGLT-1/2 inhibitors, such as sotagliflozin, being developed by Sanofi/Lexicon and SGLT-2 inhibitors such as AstraZeneca's dapagliflozin and Eli Lilly/ Boehringer Ingelheim's empagliflozin.

Many of our potential competitors have substantially greater:

- resources, including capital, personnel and technology;
- research and development capability;
- clinical trial expertise;

- regulatory expertise;
- intellectual property rights, including patent rights;
- expertise in obtaining, maintaining, defending and enforcing intellectual property rights, including patent rights;
- manufacturing and distribution expertise; and
- sales and marketing expertise.

In addition, academic and government institutions are increasingly likely to enter into exclusive licensing agreements with commercial enterprises, including our competitors, to market commercial products based on technology developed at such institutions. Many of these competitors have significant products approved or in development that could be competitive with our products.

Accordingly, our competitors may be more successful than us in obtaining regulatory approval for drugs and achieving widespread market acceptance. Our competitors' drugs may be more effective, less costly, or more effectively marketed and sold, than any drug candidate we may commercialize and may render our drug candidates obsolete or non-competitive before we can recover the expenses of their development and commercialization. We anticipate that we will face intense and increasing competition as new drugs enter the market and advanced technologies become available. Finally, the development of new treatment methods for the diseases we are targeting could render our drug candidates non-competitive or obsolete.

Healthcare cost containment initiatives and the growth of managed care may limit our revenues and profitability.

Our ability to commercialize our products successfully may be negatively affected by the ongoing efforts of governmental and third-party payors to contain the cost of health care. In the United States, there have been and continue to be a number of legislative initiatives to contain healthcare costs. For example, in March 2010, the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act, or collectively, the Affordable Care Act, was passed, which substantially changes the way health care is financed by both governmental and private insurers, and significantly impacts the U.S. pharmaceutical industry. The Affordable Care Act, among other things, addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected, increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extended the rebate program to individuals enrolled in Medicaid managed care organizations, established annual fees and taxes on manufacturers of certain branded prescription drugs, and established a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D.

In addition, other legislative changes have been proposed and adopted in the United States since the Affordable Care Act was enacted. On August 2, 2011, the Budget Control Act of 2011 among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. These automatic reductions include aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in April 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2024 unless additional Congressional action is taken. On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our drug candidates or additional pricing pressures.

Both governmental and third-party payers are challenging the cost of healthcare products and services, denying or limiting coverage and reimbursement amounts for new therapeutic products, for FDA-approved products considered experimental or investigational or used for disease indications without FDA marketing approval. Any restrictions in coverage or reductions in reimbursement rates under government programs often result in reductions in reimbursement rates by insurance companies and other third-party payors.

Even if we succeed in bringing *azeliragon* or any of our other drug candidates to the market, we may not be considered cost-effective, and governmental or third-party payor coverage and reimbursement might not be available or sufficient. If adequate governmental or third-party coverage or reimbursement is not available, we may not be able to maintain price levels sufficient to realize an appropriate return on our investment in research and product development. In addition, legislation and regulations affecting the pricing of pharmaceuticals may change in ways adverse to us before or after any of our proposed products are approved for marketing.

Therefore, adverse changes in third-party payor coverage and reimbursement and/or new state and federal healthcare reform measures that may be adopted in the future could have a material adverse effect on our businesses, financial conditions and results of operations.

Current and future legislation may increase the difficulty and cost for us and any future collaborators to obtain marketing approval of our other drug candidates and affect the prices we, or they, may obtain.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could, among other things, prevent or delay marketing approval of our drug candidates, restrict or regulate post-approval activities and affect our ability, or the ability of any collaborators, to profitably sell any products for which we, or they, obtain marketing approval. We expect that current laws, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we, or any future collaborators, may receive for any approved products.

The costs of prescription pharmaceuticals in the United States has also been the subject of considerable discussion in the United States, and members of Congress and the Administration have stated that they will address such costs through new legislative and administrative measures. The pricing of prescription pharmaceuticals is also subject to governmental control outside the United States. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost effectiveness of our product candidates to other available therapies. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our ability to generate revenues and become profitable could be impaired. In the European Union, similar political, economic and regulatory developments may affect our ability to profitably commercialize our products. In addition to continuing pressure on prices and cost containment measures, legislative developments at the European Union or member state level may result in significant additional requirements or obstacles that may increase our operating costs.

Moreover, legislative and regulatory proposals have also been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical drugs. We cannot be sure whether additional legislative changes will be enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals of our drug candidates, if any, may be. In addition, increased scrutiny by the United States Congress of the FDA's approval process may significantly delay or prevent marketing approval, as well as subject us and any future collaborators to more stringent drug labeling and post-marketing testing and other requirements.

Product liability lawsuits against us could cause us to incur substantial liabilities and to limit commercialization of any drugs that we may develop.

We face an inherent risk of product liability exposure related to the testing of our drug candidates in human clinical trials and will face an even greater risk if we commercially sell any drugs that we may develop. If we cannot successfully defend ourselves against claims that our drug candidates or drugs caused injuries, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any drug candidates or drugs that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend the related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue;
- reduced resources of our management to pursue our business strategy; and
- the inability to commercialize any drugs that we may develop.

We currently hold clinical trial liability insurance coverage, but that coverage may not be adequate to cover any and all liabilities that we may incur. We would need to increase our insurance coverage when we begin the commercialization of our drug candidates, if ever. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

Our current and future relationships with healthcare professionals, principal investigators, consultants, customers (actual and potential) and third-party payors in the United States and elsewhere may be subject, directly or indirectly, to applicable healthcare laws and regulations.

Healthcare providers, physicians and third-party payors in the United States and elsewhere will play a primary role in the recommendation and prescription of any drug candidates for which we obtain marketing approval. Our current and future arrangements with healthcare professionals, principal investigators, consultants, customers (actual and potential) and third-party payors may expose us to broadly applicable fraud and abuse and other healthcare laws, including, without limitation:

- the Food, Drug and Cosmetic Act ("FDCA") is the statute that provides the FDA with authority to oversee the safety and approval of pharmaceutical products. The FDCA vests authority with FDA to conduct inspections sponsors conducting pharmaceutical development, such as vTv, to protect the rights, safety and welfare of clinical trial subjects, ensure the accuracy and reliability of clinical trial data, and verify compliance with FDA regulations. The FDCA sets forth the standards for approval of new and generic drugs, as well as setting forth the prohibition on marketing investigational products that have not been approved by the FDA as safe and effective. The government (FDA and SEC) use the FDCA to ensure that companies do not mislead the medical, patient or investor communities about investigational products prior to their approval. To that end, the FDCA prohibits "off-label promotion" of any investigational or approved product for any uses, doses or populations, except that set forth in the full prescribing information approved by the FDA. While physicians can prescribe a product for any dose, purpose or population in their medical judgment, manufacturers can only market products for their FDA-approved dose, purpose and population. There are significant civil and criminal penalties that attach to violations of the FDCA, including strict liability misdemeanors for responsible corporate officers, even if such officers were not involved in or aware of the underlying wrongdoing;
- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, lease, order or recommendation of, any good, facility, item or service, for which payment may be made, in whole or in part, under federal and state healthcare programs such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation. In addition, the Affordable Care Act provided that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;
- federal civil and criminal false claims laws, including the federal False Claims Act, which impose criminal and civil penalties, including civil whistleblower actions, against individuals or entities for, among other things, knowingly presenting, or causing to be presented, to the federal government, including the Medicare and Medicaid programs, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;
- the Foreign Corrupt Practices Act that prohibits payments to foreign public officials relating to official acts. In addition to its prohibition on bribery of foreign government officials, the Act requires companies to maintain accurate records and have vigorous internal controls. The DOJ and SEC have made FCPA enforcement a high priority. In addition, other anti-corruption laws such as the UK Bribery Act are even broader than the FCPA in that they apply to bribes offered to any person, not just government officials. There are significant criminal and civil penalties and fines that attach to violations of the FCPA;
- the civil monetary penalties statute, which imposes penalties against any person or entity who, among other things, is determined to have presented or caused to be presented a claim to a federal health program that the person knows or should know is for an item or service that was not provided as claimed or is false or fraudulent;
- HIPAA, which created new federal criminal statutes that prohibit knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or obtain, by means of false or fraudulent pretenses, representations or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private), knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of, or payment for, healthcare benefits, items or services relating to healthcare matters. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation;
- HIPAA, as amended by HITECH, and their respective implementing regulations, which impose obligations on covered entities, including healthcare providers, health plans, and healthcare clearinghouses, as well as their respective business associates that create, receive, maintain or transmit individually identifiable health information for or on behalf of a covered entity, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;

- the federal Physician Payments Sunshine Act and its implementing regulations, which imposed annual reporting requirements for certain manufacturers of drugs, devices, biologicals and medical supplies for payments and "transfers of value" provided to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members; and
- analogous state and foreign laws, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers; state and foreign laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Efforts to ensure that our future business arrangements with third parties will comply with applicable healthcare laws and regulations may involve substantial costs. It is possible that governmental authorities will conclude that our business activities, including our relationships with physician consultants, some of whom may prescribe our product candidates, if approved, in the future, may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, including, without limitation, damages, fines, imprisonment, exclusion from participation in government healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations, which could significantly harm our business.

If we try to obtain approval to commercialize any products outside the United States, many of the same risks that apply to obtaining approvals in the United States will likely apply to such a process, and even if we obtain approval to commercialize any such products outside of the United States, a variety of risks associated with international operations could materially adversely affect our business.

If we try to obtain approval to commercialize any of our products outside the United States, many of the same risks with respect to obtaining such approvals in the United States will apply to that process. If *azeliragon* or any of our other drug candidates are approved for commercialization outside of the United States, we intend to enter into agreements with third parties to market them on a worldwide basis or in more limited geographical regions. In that event, we expect that we will be subject to additional risks related to entering into international business relationships, including:

- different regulatory requirements for drug approvals;
- reduced protection for intellectual property rights, including trade secret and patent rights;
- existing tariffs, trade barriers and regulatory requirements and expected or unexpected changes;
- economic weakness, including inflation, or political instability in foreign economies and markets;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- foreign taxes, including withholding of payroll taxes;
- foreign currency fluctuations, which could result in increased operating expenses and reduced revenues, and other obligations incident to doing business in another country;
- workforce uncertainty in countries where labor unrest is more or less common than in the United States;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad;
- business interruptions resulting from geopolitical actions, including war and terrorism, or natural disasters including earthquakes, hurricanes, floods and fires; and
- difficulty in importing and exporting clinical trial materials and study samples.

Risks Relating to Our Dependence on Third Parties

We may not succeed in establishing and maintaining collaborative relationships, which may significantly limit our ability to develop and commercialize our drug candidates successfully, if at all.

We intend to seek collaborative relationships for the development and commercialization of our drug candidates, including *azeliragon*. Failure to obtain a collaborative relationship for *azeliragon*, particularly in the European Union and for other markets

requiring extensive sales efforts, may significantly impair the potential for this drug candidate. We also will need to enter into collaborative relationships to provide funding to support our other research and development programs. The process of establishing and maintaining collaborative relationships is difficult, time-consuming and involves significant uncertainty, including:

- a collaboration partner may shift its priorities and resources away from our drug candidates due to a change in business strategies, or a merger, acquisition, sale or downsizing;
- a collaboration partner may seek to renegotiate or terminate their relationships with us due to unsatisfactory clinical results, manufacturing issues, a change in business strategy, a change of control or other reasons;
- a collaboration partner may cease development in therapeutic areas which are the subject of our strategic collaboration;
- a collaboration partner may not devote sufficient capital or resources towards our drug candidates;
- a collaboration partner may change the success criteria for a drug candidate thereby delaying or ceasing development of such candidate;
- a significant delay in initiation of certain development activities by a collaboration partner will also delay payment of milestones tied to such activities, thereby impacting our ability to fund our own activities;
- a collaboration partner could develop a product that competes, either directly or indirectly, with our drug candidate;
- a collaboration partner with commercialization obligations may not commit sufficient financial or human resources to the marketing, distribution or sale of a product;
- a collaboration partner with manufacturing responsibilities may encounter regulatory, resource or quality issues and be unable to meet demand requirements;
- a partner may exercise a contractual right to terminate a strategic alliance;
- a dispute may arise between us and a partner concerning the research, development or commercialization of a drug candidate resulting in a delay in milestones, royalty payments or termination of an alliance and possibly resulting in costly litigation or arbitration which may divert management attention and resources; and
- a partner may use our products or technology in such a way as to invite litigation from a third party.

For example, we previously licensed the development of *azeliragon* to Pfizer Inc. in 2006, before Pfizer determined not to pursue the development of the program, and we reacquired *azeliragon* in 2011, and Forest Laboratories had previously licensed our GKA programs, including *TTP399*, but decided to return the GKA programs to us in 2013, shortly before its acquisition by Actavis plc. Any collaborative partners we enter into agreements with in the future may also shift their priorities and resources away from our drug candidates or seek to renegotiate or terminate their relationships with us.

If any collaborator fails to fulfill its responsibilities in a timely manner, or at all, our research, clinical development, manufacturing or commercialization efforts related to that collaboration could be delayed or terminated, or it may be necessary for us to assume responsibility for expenses or activities that would otherwise have been the responsibility of our collaborator. If we are unable to establish and maintain collaborative relationships on acceptable terms or to successfully transition terminated collaborative agreements, we may have to delay or discontinue further development of one or more of our drug candidates, undertake development and commercialization activities at our own expense or find alternative sources of capital.

We rely on third parties to conduct, supervise and monitor certain of our clinical trials, and if those third parties perform in an unsatisfactory manner, it may harm our business.

We rely on contract research organizations (“CROs”) and clinical trial sites to ensure the proper and timely conduct of certain of our clinical trials, including the STEADFAST Study. While we have agreements governing their activities, and continue to monitor their compliance with those agreements as well as federal standards and regulations, we have limited influence over their actual performance. We will control only certain aspects of our CROs’ activities. Nevertheless, we will be responsible for ensuring that our clinical trials are conducted in accordance with the applicable protocol, legal, regulatory and scientific standards and our reliance on the CROs does not relieve us of our regulatory responsibilities.

We and our CROs are required to comply with the FDA’s good clinical practices requirements (“GCPs”) for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of clinical trial participants are protected. The FDA enforces these GCPs through periodic inspections of trial sponsors, principal investigators and clinical trial sites. If we or our CROs fail to comply with applicable GCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA may require us to perform additional clinical trials before

approving any marketing applications. Upon inspection, the FDA may determine that our clinical trials did not comply with GCPs. In addition, our clinical trials conducted by third parties will require a sufficiently large number of test subjects to evaluate the safety and effectiveness of a drug candidate. Accordingly, if our CROs fail to comply with these regulations or fail to recruit a sufficient number of patients, our clinical trials may be delayed or we may be required to repeat such clinical trials, which would delay the regulatory approval process.

Our CROs are not our employees, and although we monitor their activities related to our trials, we are not able to control whether or not they devote sufficient time and resources to our clinical trials. If our CROs do not successfully carry out their contractual duties or obligations, fail to meet expected deadlines, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements, or for any other reasons, our clinical trials may be extended, delayed or terminated, and we may not be able to obtain regulatory approval for, or successfully commercialize our drug candidates. As a result, our financial results and the commercial prospects for such drug candidates would be harmed, our costs could increase, and our ability to generate revenues could be delayed.

We also rely on other third parties to store and distribute drug products for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our drug candidates or commercialization of our products, if approved, producing additional losses and depriving us of potential product revenue.

We do not have multiple sources of supply for the components used in azeliragon and our other drug candidates. If we were to lose a supplier, it could have a material adverse effect on our ability to complete the development of azeliragon or our other drug candidates. If we obtain regulatory approval for azeliragon or our other drug candidates we would need to expand the supply of its components in order to commercialize them.

We do not have multiple sources of supply for the components used in *azeliragon* and our other drug candidates. We also do not have long-term supply agreements with any of our suppliers. We are currently evaluating drug manufacturers that will produce the commercial supply of both the drug substance and drug product of *azeliragon*. It is our expectation that only one supplier of drug substance and one supplier of product will be qualified as vendors with the FDA. If for any reason we are unable to obtain drug substance or drug product from the manufacturers we select, we would have to seek to obtain these from other manufacturers. We may not be able to establish additional sources of supply for our drug candidates, or may be unable to do so on acceptable terms. Such suppliers are subject to regulatory requirements, covering manufacturing, testing, quality control and record keeping relating to our drug candidates and subject to ongoing inspections by the regulatory agencies. Failure by any of our suppliers to comply with applicable regulations may result in long delays and interruptions.

The number of suppliers of the raw material components of our drug candidates is limited. In the event it is necessary or desirable to acquire supplies from an alternative supplier, we might not be able to obtain them on commercially reasonable terms, if at all. It could also require significant time and expense to redesign our manufacturing processes to work with another company.

As part of any marketing approval, a manufacturer and its processes are required to be qualified by the FDA prior to commercialization. If supply from the approved supplier is interrupted, there could be a significant disruption in commercial supply. An alternative vendor would need to be qualified through an NDA amendment or supplement which could result in further delay. The FDA or other regulatory agencies outside of the United States may also require additional studies if a new supplier is relied upon for commercial production. Switching vendors may involve substantial costs and is likely to result in a delay in our desired clinical and commercial timelines.

If we are unable to obtain the supplies we need at a reasonable price or on a timely basis, it could have a material adverse effect on our ability to complete the development of *azeliragon* and our other drug candidates or, if we obtain regulatory approval for *azeliragon* or our other drug candidates, to commercialize them.

We intend to rely on third-party manufacturers to produce our drug candidates. If we experience problems with any of these suppliers, the manufacturing of our drug candidates or products could be delayed.

We do not have the capability to manufacture our drug candidates and do not intend to develop that capability. In order to continue to develop our drug candidates, apply for regulatory approvals and ultimately commercialize products, we need to develop, contract for or otherwise arrange for the necessary manufacturing capabilities. The facilities used by our CMOs to manufacture our drug candidates must be approved by the FDA pursuant to inspections that will be conducted after we submit our NDA to the FDA. We do not control the manufacturing process of, and are completely dependent on, our contract manufacturing partners for compliance with the regulatory requirements, known as cGMPs, for manufacture of both active drug substances and finished drug products. If our CMOs cannot successfully manufacture material that conforms to our specifications and the regulatory requirements of the FDA or others, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. In addition, although we monitor our

suppliers and their compliance with our contractual terms and federal laws and regulations, we do not control the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our drug candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our drug candidates, if approved.

In addition, there are a limited number of manufacturers that operate under the FDA's cGMP regulations capable of manufacturing our drug candidates. As a result, we may have difficulty finding manufacturers for our drug candidates with adequate capacity for our needs. If we are unable to arrange for third-party manufacturing of our drug candidates on a timely basis, or to do so on commercially reasonable terms, we may not be able to complete development of our drug candidates or market them.

Reliance on third-party manufacturers entails risks to which we might not be subject if we manufactured drug candidates ourselves, including:

- the limited number of manufacturers that could produce our drug candidates for us;
- the inability to meet our product specifications and quality requirements consistently;
- inability to access production facilities on a timely basis;
- inability or delay in increasing manufacturing capacity;
- manufacturing and product quality issues related to scale-up of manufacturing;
- costs and validation of new equipment and facilities required for commercial level activity;
- a failure to satisfy the FDA's cGMP requirements and similar foreign standards on a consistent basis;
- the inability to negotiate manufacturing agreements with third parties under commercially reasonable terms;
- termination or nonrenewal of manufacturing agreements with third parties in a manner or at a time that is costly or damaging to us;
- the reliance on a single source of supply which, if unavailable, would delay our ability to complete our clinical trials or to sell any product for which we have received marketing approval;
- the lack of qualified backup suppliers for supplies that are currently purchased from a single source supplier;
- carrier disruptions or increased costs that are beyond our control; and
- the failure to deliver products under specified storage conditions and in a timely manner.

Any of these risks could cause the delay of clinical trials, regulatory submissions, required approvals or commercialization of our products, cause us to incur higher costs and prevent us from commercializing our drug candidates successfully. Manufacturing of our drug candidates and any approved products could be disrupted or halted if our third-party manufacturers do not comply with cGMP or foreign manufacturing standards, even if the compliance failure does not relate to our drug candidates or approved products. Furthermore, if any of our drug candidates are approved and our third-party manufacturers fail to deliver the required commercial quantities of finished product on a timely basis and at commercially reasonable prices and we are unable to find one or more replacement manufacturers capable of production at a substantially equivalent cost, in substantially equivalent volumes and quality and on a timely basis, we would likely be unable to meet demand for our products and could lose potential revenue. It may take several years to establish an alternative source of supply for our drug candidates and to have any such new source approved by the FDA or a foreign regulator.

Risks Relating to Our Intellectual Property

It is difficult and costly to protect our proprietary rights, and we may not be able to ensure their protection.

Our commercial success will depend in part on our ability to:

- apply for, obtain, maintain and enforce patents;
- protect trade secrets and other confidential and proprietary information; and
- operate without infringing upon the proprietary rights of others.

We will be able to protect our proprietary technology from unauthorized use by third parties only to the extent that such proprietary rights are covered by regulatory exclusivity, valid and enforceable patents or are effectively maintained as trade secrets. Any

non-confidential disclosure to or misappropriation by third parties of our confidential or proprietary information could enable competitors to quickly duplicate or surpass our technological achievements, thus eroding our competitive position in our market.

As of December 31, 2017, we were the owner of record of 64 issued U.S. patents and at least 252 issued non-U.S. patents, as well as the licensee of at least 4 issued U.S. patents and at least 32 issued non-U.S. patents. As of December 31, 2017, we were actively pursuing 14 U.S. patent applications, of which one is provisional and 13 are non-provisional, two Patent Cooperation Treaty applications and at least 97 non-U.S. patent applications in twelve or more jurisdictions as the owner of record, in addition to one non-U.S. patent application under license.

The patent application process, also known as patent prosecution, is expensive and time-consuming, and we and our current or future licensors and licensees may not be able to prepare, file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we or our current licensors or licensees, or any future licensors or licensees, will fail to identify patentable aspects of inventions made in the course of development and commercialization activities before it is too late to obtain patent protection on them. Therefore, these and any of our patents and patent applications may not be prosecuted and enforced in a manner consistent with the best interests of our business. It is possible that defects of form in the preparation or filing of our patents or patent applications may exist, or may arise in the future, for example with respect to proper priority claims or inventorship. If we or our current licensors or licensees, or any future licensors or licensees, fail to establish, maintain or protect such patents and other intellectual property rights, such rights may be reduced or eliminated. If our current licensors or licensees, or any future licensors or licensees, are not fully cooperative or disagree with us as to the prosecution, maintenance or enforcement of any patent rights, such patent rights could be compromised. If there are material defects in the form or preparation of our patents or patent applications, such patents or applications may be invalid and unenforceable. Any of these outcomes could impair our ability to prevent competition from third parties, which may harm our business.

The patent applications that we own or license may fail to result in issued patents in the United States or in other countries. Even if patents do issue on such patent applications, third parties may challenge the validity, enforceability or scope thereof, which may result in such patents being narrowed, invalidated or held unenforceable. For example, U.S. patents can be challenged by any person before the United States Patent and Trademark Office ("USPTO") Patent Trial and Appeals Board at any time within the one year period following that person's receipt of an allegation of infringement of the patents. Patents granted by the European Patent Office may be similarly opposed by any person within nine months from the publication of the grant. Similar proceedings are available in other jurisdictions, and in the United States, Europe and other jurisdictions third parties can raise questions of validity with a patent office even before a patent has granted. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property or prevent others from designing around our claims. If the breadth or strength of protection provided by the patents and patent applications we hold or pursue with respect to our product candidates is successfully challenged, then our ability to commercialize such product candidates could be negatively affected, and we may face unexpected competition that could harm our business. Further, if we encounter delays in our clinical trials, the period of time during which we or our collaborators could market our product candidates under patent protection would be reduced.

The degree of future protection of our proprietary rights is uncertain. Patent protection may be unavailable or severely limited in some cases and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- we might not have been the first to invent or the first to file the inventions covered by each of our pending patent applications and issued patents;
- others may be able to make, use, sell, offer to sell or import products that are similar to our products or product candidates but that are not covered by the claims of our patents; others may independently develop similar or alternative technologies or duplicate any of our technologies;
- the proprietary rights of others may have an adverse effect on our business;
- any proprietary rights we do obtain may not encompass commercially viable products, may not provide us with any competitive advantages or may be challenged by third parties;
- any patents we obtain or our in-licensed issued patents may not be valid or enforceable; or
- we may not develop additional technologies or products that are patentable or suitable to maintain as trade secrets.

If we or our current licensors or licensees, or any future licensors or licensees, fail to prosecute, maintain and enforce patent protection for our product candidates, our ability to develop and commercialize our product candidates could be harmed and we might not be able to prevent competitors from making, using and selling competing products. This failure to properly protect the intellectual property rights relating to our product candidates could harm our business, financial condition and operating results. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how.

Even where laws provide protection, costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and the outcome of such litigation would be uncertain. If we or one of our collaborators were to initiate legal proceedings against a third party to enforce a patent covering the product candidate, the defendant could assert an affirmative defense or counterclaim that our patent is not infringed, invalid and/or unenforceable. In patent litigation in the United States, defendant defenses and counterclaims alleging noninfringement, invalidity and/or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, anticipation or obviousness, and lack of written description, definiteness or enablement. Patents may be unenforceable if someone connected with prosecution of the patent withheld material information from the USPTO, or made a misleading statement, during prosecution. The outcomes of proceedings involving assertions of invalidity and unenforceability are unpredictable. It is possible that prior art of which we and the patent examiner were unaware during prosecution exists, which would render our patents invalid. Moreover, it is also possible that prior art may exist that we are aware of, but that we do not believe are relevant to our current or future patents, that could nevertheless be determined to render our patents invalid. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability of our patents covering one of our product candidates, we would lose at least part, and perhaps all, of the patent protection on such product candidate. Such a loss of patent protection would harm our business. Moreover, our competitors could counterclaim in any suit to enforce our patents that we infringe their intellectual property. Furthermore, some of our competitors have substantially greater intellectual property portfolios, and resources, than we do.

Our ability to stop third parties from using our technology or making, using, selling, offering to sell or importing our products is dependent upon the extent to which we have rights under valid and enforceable patents that cover these activities. If any patent we currently or in the future may own or license is deemed not infringed, invalid or unenforceable, it could impact our commercial success. We cannot predict the breadth of claims that may be issued from any patent applications we currently or may in the future own or license from third parties.

To the extent that consultants or key employees apply technological information independently developed by them or by others to our product candidates, disputes may arise as to who has the proprietary rights to such information and product candidates, and certain of such disputes may not be resolved in our favor. Consultants and key employees that work with our confidential and proprietary technologies are required to assign all intellectual property rights in their inventions and discoveries created during the scope of their work to our company. However, these consultants or key employees may terminate their relationship with us, and we cannot preclude them indefinitely from dealing with our competitors.

If we are unable to prevent disclosure of our trade secrets or other confidential information to third parties, our competitive position may be impaired.

We also may rely on trade secrets to protect our technology, especially where we do not believe patent protection is appropriate or obtainable. Our ability to stop third parties from obtaining the information or know-how necessary to make, use, sell, offer to sell or import our products or practice our technology is dependent in part upon the extent to which we prevent disclosure of the trade secrets that cover these activities. Trade secret rights can be lost through disclosure to third parties. Although we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors, outside scientific collaborators and other advisors may unintentionally or willfully disclose our trade secrets to third parties, resulting in loss of trade secret protection. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how, which would not constitute a violation of our trade secret rights. Enforcing a claim that a third party is engaged in the unlawful use of our trade secrets is expensive, difficult and time consuming, and the outcome is unpredictable. In addition, recognition of rights in trade secrets and a willingness to enforce trade secrets differs in certain jurisdictions.

Changes to the patent laws in the United States and other jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involve both technological and legal complexity and is therefore costly, time consuming and inherently uncertain. Recent patent reform legislation in the United States and other countries, including the Leahy-Smith America Invents Act, or Leahy-Smith Act, signed into law on September 16, 2011, could increase those uncertainties and costs. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted, redefine prior art and provide more efficient and cost-effective avenues for competitors to challenge the validity of patents. In addition, the Leahy-Smith Act has transformed the U.S. patent system into a “first to file” system. The first-to-file provisions, however, only became effective on March 16, 2013. Accordingly, it is not yet clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could make it more difficult to obtain patent protection for our inventions and increase the uncertainties and costs surrounding the prosecution of our or our collaborators’ patent applications and the enforcement or defense of our or our collaborators’ issued patents, all of which could harm our business, results of operations and financial condition.

The U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. Additionally, there have been recent proposals for additional changes to the patent laws of the United States and other countries that, if adopted, could impact our ability to obtain patent protection for our proprietary technology or our ability to enforce our proprietary technology. Depending on future actions by the U.S. Congress, the U.S. courts, the USPTO and the relevant law-making bodies in other countries, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

If we are sued for infringing intellectual property rights of third parties, it will be costly and time consuming, and an unfavorable outcome in that litigation could harm our business.

Our commercial success depends significantly on our ability to operate without infringing, violating or misappropriating the patents and other proprietary rights of third parties. Our own technologies may infringe, violate or misappropriate the patents or other proprietary rights of third parties, or we may be subject to third-party claims of such infringement. Numerous U.S. and foreign issued patents and pending patent applications owned by third parties, exist in the fields in which we are developing our product candidates. Because some patent applications may be maintained in secrecy until the patents are issued, because publication of patent applications is often delayed, and because publications in the scientific literature often lag behind actual discoveries, we cannot be certain that we were the first to invent the technology or that others have not filed patent applications for technology covered by our pending applications. We may not be aware of patents that have already issued that a third party might assert are infringed by our product candidates. It is also possible that patents of which we are aware, but which we do not believe are relevant to our product candidates, could nevertheless be found to be infringed by our product candidates. Moreover, we may face Inter Partes Review ("IPR") proceedings before the USPTO or patent infringement claims from non-practicing entities that have no relevant product revenue and against whom our own patent portfolio may thus have no deterrent effect. In the future, we may agree to indemnify our manufacturing partners against certain intellectual property claims brought by third parties.

Intellectual property litigation involves many risks and uncertainties, and there is no assurance that we will prevail in any lawsuit brought against us. Third parties making claims against us for infringement, violation or misappropriation of their intellectual property rights may seek and obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize our product candidates. Further, if a patent infringement suit were brought against us, we could be forced to stop or delay research, development, manufacturing or sales of the product or product candidate that is the subject of the suit. Defense of these claims, regardless of their merit, would cause us to incur substantial expenses and, would be a substantial diversion of resources from our business. In the event of a successful claim of any such infringement, violation or misappropriation, we may need to obtain licenses from such third parties and we and our partners may be prevented from pursuing product development or commercialization and/or may be required to pay damages. We cannot be certain that any licenses required under such patents or proprietary rights would be made available to us, or that any offer to license would be made available to us on commercially reasonable terms. If we cannot obtain such licenses, we and our collaborators may be restricted or prevented from manufacturing and selling products employing our technology. These adverse results, if they occur, could adversely affect our business, results of operations and prospects, and the value of our shares.

We may become involved in lawsuits to protect or enforce our patents or other intellectual property, which could be expensive, time consuming and unsuccessful.

The biotechnology and pharmaceutical industries have been characterized by extensive litigation regarding patents and other intellectual property rights. The defense and prosecution of contractual or intellectual property lawsuits, USPTO interference or derivation proceedings, European Patent Office oppositions and related legal and administrative proceedings in the United States, Europe and other countries, involve complex legal and factual questions. As a result, such proceedings may be costly and time-consuming to pursue and their outcome is uncertain.

Litigation may be necessary to:

- protect and enforce our patents and any future patents issuing on our patent applications;
- enforce or clarify the terms of the licenses we have granted or been granted or may grant or be granted in the future;
- protect and enforce trade secrets, know-how and other proprietary rights that we own or have licensed, or may license in the future; or
- determine the enforceability, scope and validity of the proprietary rights of third parties and defend against alleged patent infringement.

Competitors may infringe our intellectual property. As a result, we may be required to file infringement claims to stop third-party infringement or unauthorized use. This can be expensive, particularly for a company of our size, and time-consuming. In addition, in an infringement proceeding, a court may decide that a patent of ours is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patent claims do not cover its technology or that the factors necessary to grant an injunction against an infringer are not satisfied. An adverse determination of any litigation or other proceedings could put one or more of our patents at risk of being invalidated, interpreted narrowly, or amended such that they do not cover our product candidates. Moreover, such adverse determinations could put our patent applications at risk of not issuing, or issuing with limited and potentially inadequate scope to cover our product candidates or to prevent others from marketing similar products.

IPR, interference, derivation or other proceedings brought at the USPTO, may be necessary to determine the priority or patentability of inventions with respect to our patent applications or those of our licensors or potential collaborators. Litigation or USPTO proceedings brought by us may fail or may be invoked against us by third parties. Even if we are successful, domestic or foreign litigation or USPTO or foreign patent office proceedings may result in substantial costs and distraction to our management. We may not be able, alone or with our licensors or potential collaborators, to prevent misappropriation of our proprietary rights, particularly in countries where the laws may not protect such rights as fully as in the United States.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation or other proceedings, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation or other proceedings. In addition, during the course of this kind of litigation or proceedings, there could be public announcements of the results of hearings, motions or other interim proceedings or developments or public access to related documents. If investors perceive these results to be negative, the market price for our common stock could be significantly harmed.

Some of our competitors may be able to sustain the costs of patent-related disputes, including patent litigation, more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations.

We may not be able to enforce our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on our product candidates in all countries throughout the world would be prohibitively expensive. The requirements for patentability may differ in certain countries, particularly in developing countries. Moreover, our ability to protect and enforce our intellectual property rights may be adversely affected by unforeseen changes in foreign intellectual property laws. Additionally, laws of some countries outside of the United States do not afford intellectual property protection to the same extent as the laws of the United States. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of some countries, particularly developing countries, do not favor the enforcement of patents and other intellectual property rights. This could make it difficult for us to stop the infringement of our patents or the misappropriation of our other intellectual property rights. For example, many foreign countries have compulsory licensing laws under which a patent owner must grant licenses to third parties. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection, if our ability to enforce our patents to stop infringing activities is inadequate. These products may compete with our products, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Proceedings to enforce our patent rights in foreign jurisdictions, whether or not successful, could result in substantial costs and divert our efforts and resources from other aspects of our business. Furthermore, while we intend to protect our intellectual property rights in major markets for our products, we cannot ensure that we will be able to initiate or maintain similar efforts in all jurisdictions in which we may wish to market our products. Accordingly, our efforts to protect our intellectual property rights in such countries may be inadequate.

If we do not obtain patent term extensions for our drug candidates, the length of our patent exclusivity will be shorter which may harm our business materially.

Depending upon the timing, duration and specifics of any FDA marketing approval of our drug candidates, one or more of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, or Hatch-Waxman Act. The Hatch-Waxman Act permits a patent extension term of up to five years as compensation for patent term lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent applicable to each regulatory review period may be granted an extension, and only those claims covering the approved drug, a method for using it or a method for manufacturing it may be extended. However, we may not be granted an extension because of, for example, failing to exercise due diligence during the testing phase or regulatory

review process, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents or otherwise failing to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. For example, patents providing composition of matter protection for *azeliragon* are scheduled to expire in 2023, but if we obtain the maximum possible extension in the United States, a period of patent extension for the approved *azeliragon* product could extend into 2029. If we are unable to obtain patent term extension or the term of any such extension is less than we request, our competitors may obtain approval of competing products following the original expiration dates of our patents, and our business may be materially harmed.

Risks Relating to Employee Matters and Managing Growth

We will need to expand our operations and increase the size of our company, and we may experience difficulties in managing growth.

As we advance our drug candidates through preclinical studies and clinical trials and develop new drug candidates, we will need to increase our product development, scientific and administrative headcount to manage these programs. If we commercialize our products, we may need to expand our staff further, particularly in sales and marketing. See "—Risks Relating to the Commercialization of Our Drug Candidates." We do not presently have the capability to sell, distribute and market our drug candidates. If we are unable to establish an effective sales force and marketing infrastructure, or enter into acceptable third-party sales and marketing or licensing arrangements, we may not be able to commercialize our drug candidates successfully. In addition, to meet our obligations as a public company, we will need to increase our general and administrative capabilities. Our management, personnel and systems currently in place may not be adequate to support this future growth. Our need to effectively manage our operations, growth and various projects requires that we:

- successfully attract and recruit new employees with the expertise and experience we will require;
- manage our clinical programs effectively, which we anticipate being conducted at numerous clinical sites;
- develop a marketing, distribution and sales infrastructure if we seek to market our products directly, or successfully partner with a third party organization that will oversee those efforts; and
- continue to improve our operational, manufacturing, financial and management controls, reporting systems and procedures.

If we are unable to successfully manage this growth and increased complexity of operations, our business may be adversely affected.

We may not be able to manage our business effectively if we are unable to attract and retain key personnel.

We may not be able to attract or retain qualified management, finance, scientific and clinical personnel in the future due to the intense competition for qualified personnel among biotechnology, pharmaceutical and other businesses. If we are not able to attract and retain necessary personnel to accomplish our business objectives, we may experience constraints that will significantly impede the achievement of our development objectives, our ability to raise additional capital and our ability to implement our business strategy.

Our industry has experienced a high rate of turnover of management personnel in recent years. We are highly dependent on the development, regulatory, commercialization and business development expertise of our executive officers and key employees. If we lose one or more of our executive officers or key personnel, our ability to implement our business strategy successfully could be seriously harmed. Any of our executive officers or key employees may terminate their employment at any time. Replacing executive officers and key employees may be difficult, will be costly and may take an extended period of time because of the limited number of individuals in our industry with the mix of skills and experience required to develop, gain regulatory approval of and commercialize products successfully. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these additional key personnel. Our failure to attract and retain key personnel could materially harm our business.

Failure to build our finance infrastructure and improve our accounting systems and controls could impair our ability to comply with the financial reporting and internal controls requirements for publicly traded companies.

As a public company, we will operate in an increasingly demanding regulatory environment, which requires us to comply with applicable provisions of the Sarbanes-Oxley Act of 2002 and the related rules and regulations of the Securities and Exchange Commission, expanded disclosure requirements, accelerated reporting requirements and more complex accounting rules. Company responsibilities required by the Sarbanes-Oxley Act include establishing corporate oversight and adequate internal control over financial reporting and disclosure controls and procedures. Effective internal controls are necessary for us to produce reliable financial reports and are important to help prevent financial fraud.

We may not be able to prepare and disclose, in a timely manner, our financial statements and other required disclosures or comply with the applicable provisions of the Sarbanes-Oxley Act or existing or new reporting requirements. If we cannot provide reliable financial reports or prevent fraud, our business and results of operations could be harmed and investors could lose confidence in our reported financial information.

Our employees, independent contractors, principal investigators, CROs, consultants and collaborators may engage in misconduct or other improper activities, including noncompliance with legal, compliance or regulatory standards and requirements.

We are exposed to the risk that our employees, independent contractors, principal investigators, CROs, consultants and collaborators may engage in fraudulent conduct or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or unauthorized activities that violate the regulations of the FDA and non-U.S. regulators, including those laws requiring the reporting of true, complete and accurate information to the FDA and non-U.S. regulators, healthcare fraud and abuse laws and regulations in the United States and abroad, or laws that require the reporting of true and accurate financial information and data. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing, pre-market promotion, and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. These activities also include the improper use or disclosure of information obtained in the course of clinical trials, which could result in regulatory sanctions and cause serious harm to our reputation. We have adopted new comprehensive compliance policies, and revised our code of conduct, but it is not always possible to identify and deter employee or non-employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant civil, criminal and administrative penalties, damages, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations.

Other Risks Relating to Our Business

We may use our financial and human resources to pursue a particular research program or drug candidate and fail to capitalize on programs or drug candidates that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and human resources, we intend to focus primarily on the regulatory approval of *azeliragon*, including the completion of the STEADFAST Study. As a result, we may forego or delay pursuit of opportunities with other drug candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on existing and future drug candidates for specific indications may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular drug candidate, we may relinquish valuable rights to that drug candidate through strategic alliance, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such drug candidate, or we may allocate internal resources to a drug candidate in a therapeutic area in which it would have been more advantageous to enter into a partnering arrangement.

If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to limit commercialization of any future products we develop.

We face an inherent risk of product liability as a result of the clinical testing of our drug candidates and will face an even greater risk if we commercialize any products. For example, we may be sued if any product we develop allegedly causes injury or is found to be otherwise unsuitable during product testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability and a breach of warranties. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our products. Even a successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for *azeliragon* or any future drug candidates or products we develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants or delay or cancellation of clinical trials;
- costs to defend the related litigation;

- a diversion of management's time and our resources;
- substantial monetary awards to trial participants or patients;
- regulatory investigations, product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue;
- the inability or delay in our ability to commercialize any products we develop; and
- a decline in our share price.

Our inability to obtain and maintain sufficient product liability insurance at an acceptable cost and scope of coverage to protect against potential product liability claims could prevent or inhibit the commercialization of *azeliragon* or any future products we develop. We currently carry clinical trial liability insurance in the amount of $10.0 million in the aggregate. Although we maintain such insurance, any claim that may be brought against us could result in a court judgment or settlement in an amount that is not covered, in whole or in part, by our insurance or that is in excess of the limits of our insurance coverage. Our insurance policies also have various exclusions and deductibles, and we may be subject to a product liability claim for which we have no coverage. We will have to pay any amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, and we may not have, or be able to obtain, sufficient capital to pay such amounts. Moreover, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses. If and when we obtain approval for marketing *azeliragon*, or another product, we intend to expand our insurance coverage to include the sale of *azeliragon*, or the other new product, however, we may be unable to obtain this liability insurance on commercially reasonable terms.

Our operations involve hazardous materials, which could subject us to significant liabilities.

Our research and development processes involve the controlled use of hazardous materials, including medical waste. Our operations produce hazardous waste products. We cannot eliminate the risk of accidental contamination or discharge or injury from these materials. Federal, state and local laws and regulations govern the use, manufacture, storage, handling and disposal of these materials. We could be subject to civil damages in the event of exposure of individuals to hazardous materials. In addition, claimants may sue us for injury or contamination that results from our use of these materials and our liability may exceed our total assets. We have general liability and umbrella insurance of up to $6.0 million per occurrence, with an annual aggregate limit of $7.0 million, which excludes pollution liability. This coverage may not be adequate to cover all claims related to our hazardous materials. Furthermore, if we were to be held liable for a claim involving hazardous materials, this liability could exceed our insurance coverage, if any, and our other financial resources. Compliance with environmental and other laws and regulations may be expensive and current or future regulations may impair our research, development or production efforts.

Our insurance policies are expensive and protect us only from some business risks, which will leave us exposed to significant uninsured liabilities.

We do not carry insurance for all categories of risk that our business may encounter. Some of the policies we currently maintain include general liability, employment practices liability, property, auto, workers' compensation, umbrella, clinical trial and directors' and officers' insurance. We do not know, however, if we will be able to maintain existing insurance with adequate levels of coverage. Any significant uninsured liability may require us to pay substantial amounts, which would adversely affect our cash position and results of operations.

The market for our proposed products is rapidly changing and competitive, and new drugs and new treatments that may be developed by others could impair our ability to maintain and grow our businesses and remain competitive.

The pharmaceutical and biotechnology industries are subject to rapid and substantial technological change. Developments by others may render proposed products noncompetitive or obsolete, or we may be unable to keep pace with technological developments or other market factors. Technological competition from pharmaceutical and biotechnology companies, universities, governmental entities and others diversifying into the field is intense and is expected to increase.

As a company with nominal revenues engaged in the development of drug technologies, our resources are limited, and we may experience technical challenges inherent in such technologies. Competitors have developed or are in the process of developing technologies that are, or in the future may be, the basis for competition. Some of these technologies may have an entirely different approach or means of accomplishing similar therapeutic effects compared to our proposed products. Our competitors may develop drugs that are safer, more effective or less costly than our proposed products and, therefore, present a serious competitive threat to us.

The potential widespread acceptance of therapies that are alternatives to ours may limit market acceptance of our drug candidates, even if commercialized. Some of our targeted diseases and conditions can also be treated by other medication. These treatments may be widely accepted in medical communities and have a longer history of use or be offered at a more competitive price. The established use of these competitive drugs may limit the potential for our technologies, formulations and products to receive widespread acceptance if commercialized.

Therefore, changes in the market for our products and the availability of new or alternative treatments could have a material adverse effect on our businesses, financial conditions and results of operations.

Our business and operations would suffer in the event of computer system failures, cyber-attacks or a deficiency in our cyber-security.

Despite the implementation of security measures, our internal computer systems, and those of third parties on which we rely, are vulnerable to damage from computer viruses, malware, natural disasters, terrorism, war, telecommunication and electrical failures, cyber-attacks or cyber-intrusions over the Internet, attachments to emails, persons inside our organization or persons with access to systems inside our organization. The risk of a security breach or disruption, particularly through cyber-attacks or cyber-intrusion, including by computer hackers, foreign governments and cyber terrorists, has generally increased as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased. If such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our drug development programs. For example, the loss of clinical trial data from completed or ongoing or planned clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Also, confidential patient and other information may be compromised in a cyber-attack or cyber-intrusion. To the extent that any disruption or security breach was to result in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur material legal claims and liability, damage to our reputation, and the further development of our drug candidates could be delayed.

We may be subject to foreign exchange fluctuations.

Our functional and reporting currency is the United States dollar. A portion of our expenditures are in foreign currencies, most notably in Canadian dollars, and therefore we are subject to foreign currency fluctuations, which may, from time to time, impact our financial position and results.

Risks Related to our Common Stock

MacAndrews has substantial influence over our business, and their interests may differ from our interests or those of our other stockholders.

MacAndrews holds, directly or indirectly, a majority of our combined voting power. Due to its ownership and rights under our investor rights agreement, amended and restated certificate of incorporation and amended and restated bylaws, MacAndrews has the power to control us and our subsidiaries, including the power to:

- nominate a majority of our directors, elect a majority of our directors and appoint our executive officers, set our management policies and exercise overall control over our company and subsidiaries;
- determine the composition of the committees on our Board of Directors;
- agree to sell or otherwise transfer a controlling stake in our company; and
- determine the outcome of substantially all actions requiring stockholder approval, including transactions with related parties, corporate reorganizations, acquisitions and dispositions of assets and dividends.

The interests of MacAndrews may differ from our interests or those of our other stockholders and the concentration of control in MacAndrews will limit other stockholders' ability to influence corporate matters. The concentration of ownership and voting power with MacAndrews may also delay, defer or even prevent an acquisition by a third party or other change of control of our company and may make some transactions more difficult or impossible without the support of MacAndrews, even if such events are in the best interests of our other stockholders. The concentration of voting power with MacAndrews may have an adverse effect on the price of our Class A common stock. Our company may take actions that our other stockholders do not view as beneficial, which may adversely affect our results of operations and financial condition and cause the value of our Class A common stock to decline.

Our directors who have relationships with MacAndrews may have conflicts of interest with respect to matters involving our company.

Half of our directors are affiliated with MacAndrews. These persons will have fiduciary duties to us and in addition will have duties to MacAndrews. In addition, our amended and restated certificate of incorporation provides that none of MacAndrews, any of our non-employee directors who are employees, affiliates or consultants of MacAndrews or its affiliates (other than us or our subsidiaries) or any of their respective affiliates will be liable to us or our stockholders for breach of any fiduciary duty by reason of the fact that any such individual directs a corporate opportunity to MacAndrews or its affiliates instead of us, or does not communicate information regarding a corporate opportunity to us that such person or affiliate has directed to MacAndrews or its affiliates. As a result, such circumstances may entail real or apparent conflicts of interest with respect to matters affecting both us and MacAndrews, whose interests, in some circumstances, may be adverse to ours. In addition, as a result of MacAndrews' indirect ownership interest, conflicts of interest could arise with respect to transactions involving business dealings between us and MacAndrews or their affiliates, including potential business transactions, potential acquisitions of businesses or properties, the issuance of additional securities, the payment of dividends by us and other matters.

We do not anticipate paying cash dividends on our Class A common stock, and accordingly, stockholders must rely on stock appreciation for any return on their investment.

We have never declared or paid any cash dividend on our Class A common stock and do not anticipate paying cash dividends on our Class A common stock in the future. In addition, our Loan Agreement includes restrictive covenants which prevent us from paying dividends to our stockholders. As a result, the only return to stockholders will be appreciation in the price of our Class A common stock, which may never occur. Investors seeking cash dividends should not invest in our Class A common stock.

Our share price may be volatile, which could subject us to securities class action litigation and result in substantial losses for our stockholders.

The market price of shares of our Class A common stock could be subject to wide fluctuations in response to many risk factors listed in this section, and others beyond our control, including:

- results and timing of our clinical trials and receipt of data from the trials;
- results of clinical trials of our competitors' products;
- failure or discontinuation of any of our research programs;
- delays in the development or commercialization of our potential products;
- regulatory actions with respect to our products or our competitors' products;
- actual or anticipated fluctuations in our financial condition and operating results;
- actual or anticipated changes in our growth rate relative to our competitors;
- actual or anticipated fluctuations in our competitors' operating results or changes in their growth rate;
- competition from existing products or new products that may emerge;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures, collaborations or capital commitments;
- issuance of new or updated research or reports by securities analysts;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- additions or departures of key management or scientific personnel;
- disputes or other developments related to proprietary rights, including patents, litigation matters and our ability to obtain, maintain, defend or enforce proprietary rights relating to our products and technologies;
- announcement or expectation of additional financing efforts;
- sales of our Class A common stock by us, our insiders or our other stockholders;
- issues in manufacturing our potential products;
- market acceptance of our potential products;

- market conditions for biopharmaceutical stocks in general; and
- general economic and market conditions.

Furthermore, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or international currency fluctuations, may negatively impact the market price of shares of our Class A common stock. In addition, such fluctuations could subject us to securities class action litigation, which could result in substantial costs and divert our management's attention from other business concerns, which could potentially harm our business. As a result of this volatility, our stockholders may not be able to sell their common stock at or above the price at which they purchased their shares.

An active trading market for our Class A common stock may not be sustained.

Our shares of Class A common stock began trading on The NASDAQ Global Market on July 30, 2015. Given the limited trading history of our Class A common stock, there is a risk that an active trading market for our shares will not be sustained, which could put downward pressure on the market price of our Class A common stock and thereby affect the ability of our stockholders to sell their shares.

The trading market for our Class A common stock will be influenced by the research and reports that equity research analysts publish about us and our business.

The price of our stock could decline if one or more equity research analysts downgrade our stock or issue other unfavorable commentary or research. If one or more equity research analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our stock could decrease, which in turn could cause our stock price or trading volume to decline.

A substantial portion of our total outstanding shares may be sold into the market at any time. This could cause the market price of our Class A common stock to drop significantly, even if our business is doing well.

The market price of our Class A common stock could decline as a result of sales of a large number of shares of our Class A common stock or the perception that such sales could occur. These sales, or the possibility that these sales may occur, also might make it more difficult for us to sell equity securities in the future at a time and price that we deem appropriate.

As of December 31, 2017, MacAndrews and its affiliates hold 23,084,267 non-voting common units of vTv LLC ("vTv Units") and the same number of shares of vTv Therapeutics Inc. Class B common stock as well as an aggregate of 2,615,666 shares of our Class A common stock. As a result, MacAndrews and its affiliates hold shares representing approximately 78.3% of the combined voting power of our outstanding common stock. Pursuant to the terms of the Exchange Agreement among the Company, vTv LLC and the holders of vTv Units party thereto (the "Exchange Agreement"), vTv Units (along with the corresponding number of shares of our Class B common stock) will be exchangeable for (i) shares of our Class A common stock on a one-for-one basis or (ii) cash (based on the market price of the shares of Class A common stock), at our option (as the managing member of vTv Therapeutics LLC). Shares of our Class A common stock issuable upon an exchange of vTv Units as described above would be considered "restricted securities," as that term is defined in Rule 144 under the Securities Act, unless the exchange is registered under the Securities Act.

In December 2017, we entered into the Letter Agreement with MacAndrews. Under the Letter Agreement, until December 5, 2018, we have the right to sell to MacAndrews shares of our Class A common stock at a price equal to $4.38 per share, and MacAndrews has the right (exercisable up to three times) to require us to sell to it shares of Class A common stock at the same price. An aggregate of $10.0 million worth of Class A common stock may be sold under the Letter Agreement (whether at our or MacAndrews' option). In addition, in connection with the Letter Agreement, we also issued MacAndrews warrants to purchase 198,267 shares of our Class A common stock at a price of $5.04 per share, exercisable until December 5, 2024. Sales of shares of Class A common stock to MacAndrews under the Letter Agreement or pursuant to the exercise of the related warrants (or resales by MacAndrews of such shares) could negatively affect our stock price, as could the anticipation of such sales or resales.

On August 13, 2015, we filed a registration statement under the Securities Act registering 3,250,000 shares of our Class A common stock reserved for issuance under our 2015 Plan. As part of our Loan Agreement, we issued warrants to purchase 190,586 shares of our Class A common stock to our lenders.

Further, we have entered into an investor rights agreement with an affiliate of MacAndrews providing certain governance and registration rights.

Future sales and issuances of our Class A common stock or rights to purchase Class A common stock, including pursuant to our equity incentive plans, the exercise of outstanding warrants or pursuant to the Loan Agreement or the Letter Agreement, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.

We expect that significant additional capital will be needed in the future to continue our planned operations. To the extent we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution. We may sell Class A common stock, convertible securities or other equity securities, including under the Letter Agreement and related warrants, and such sales could result in substantial dilution to existing investors.

In addition, under the Loan Agreement the Lenders have the right to purchase shares of our Class A common stock from us, at a discounted price, with a value up to $1.0 million in the event that we conduct a public offering in which we receive cash proceeds of at least $10.0 million. If we sell Class A common stock, convertible securities or other equity securities, the percentage ownership of our stockholders will be diluted. In addition, new investors could gain rights superior to our existing stockholders.

We are an "emerging growth company," and are taking advantage of reduced disclosure requirements applicable to "emerging growth companies," which could make our Class A common stock less attractive to investors.

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"), and, for as long as we continue to be an "emerging growth company," we intend to take advantage of certain exemptions from various reporting requirements applicable to other public companies but not to "emerging growth companies," including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We could be an "emerging growth company" for up to five years from the date of our initial public offering, or until the earliest of (i) the last day of the first fiscal year in which our annual gross revenues exceed $1.07 billion, (ii) the date that we become a "large accelerated filer" as defined in Rule 12b-2 under the Exchange Act, which would occur if the market value of our Class A common stock that is held by non-affiliates exceeds $700 million as of the last business day of our most recently completed second fiscal quarter, or (iii) the date on which we have issued more than $1 billion in non-convertible debt during the preceding three year period. We cannot predict if investors will find our Class A common stock less attractive if we choose to rely on these exemptions. If some investors find our Class A common stock less attractive as a result of any choices to reduce future disclosure, there may be a less active trading market for our Class A common stock and our stock price may be more volatile.

We will incur significantly increased costs and devote substantial management time as a result of operating as a public company particularly after we are no longer an "emerging growth company."

As a public company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. For example, we are required to comply with certain of the requirements of the Sarbanes-Oxley Act and the Dodd-Frank Wall Street Reform and Consumer Protection Act, as well as rules and regulations subsequently implemented by the Securities and Exchange Commission, and NASDAQ, our stock exchange, including the establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. We expect that compliance with these requirements will increase our legal and financial compliance costs and will make some activities more time consuming and costly. In addition, our management and other personnel will need to divert attention from operational and other business matters to devote substantial time to these public company requirements. In particular, we expect to incur significant expenses and devote substantial management effort toward ensuring compliance with the requirements of Section 404 of the Sarbanes-Oxley Act. In that regard, we currently do not have an internal audit function.

However, for as long as we remain an "emerging growth company" as defined in the JOBS Act, we intend to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not "emerging growth companies" including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We intend to take advantage of these reporting exemptions until we are no longer an "emerging growth company."

Under the JOBS Act, "emerging growth companies" can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not "emerging growth companies."

After we are no longer an "emerging growth company," we expect to incur additional management time and cost to comply with the more stringent reporting requirements applicable to companies that are deemed accelerated filers or large accelerated filers, including complying with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act.

We are exempt from certain corporate governance requirements since we are a "controlled company" within the meaning of the NASDAQ rules, and as a result our stockholders will not have the protections afforded by these corporate governance requirements.

MacAndrews controls more than 50% of our combined voting power. As a result, we are considered a "controlled company" for the purposes of NASDAQ rules and corporate governance standards, and therefore are permitted to elect not to comply with certain NASDAQ corporate governance requirements, including those that would otherwise require our Board of Directors to have a majority of independent directors and require that we either establish compensation and nominating and corporate governance committees, each comprised entirely of independent directors, or otherwise ensure that the compensation of our executive officers and nominees for directors are determined or recommended to the Board of Directors by the independent members of the Board of Directors. Accordingly, holders of our Class A common stock do not have the same protections afforded to stockholders of companies that are subject to all of the NASDAQ rules and corporate governance standards, and the ability of our independent directors to influence our business policies and affairs may be reduced.

Provisions in our charter and bylaws and provisions of Delaware law may delay or prevent our acquisition by a third party, which might diminish the value of our common stock.

Our amended and restated certificate of incorporation and amended and restated bylaws contain several provisions that may make it more difficult or expensive for a third party to acquire control of us without the approval of the Board of Directors. These provisions also may delay, prevent or deter a merger, acquisition, tender offer, proxy contest or other transaction that might otherwise result in our stockholders receiving a premium over the market price for their common stock. The provisions include, among others:

- a prohibition on actions by written consent of the stockholders;
- authorized but unissued shares of common stock and preferred stock that will be available for future issuance;
- the ability of our Board of Directors to increase the size of the Board of Directors and fill vacancies without a stockholder vote;
- provisions that have the same effect as a modified version of Section 203 of the Delaware General Corporation Law, an antitakeover law (as further described below); and
- advance notice requirements for stockholder proposals and director nominations.

Section 203 of the Delaware General Corporation Law may affect the ability of an "interested stockholder" to engage in certain business combinations, including mergers, consolidations or acquisitions of additional shares, for a period of three years following the time that the stockholder becomes an "interested stockholder." An "interested stockholder" is defined to include persons owning directly or indirectly 15% or more of the outstanding voting stock of a corporation. We have elected in our amended and restated certificate of incorporation not to be subject to Section 203 of the Delaware General Corporation Law. Nevertheless, the amended and restated certificate of incorporation contains provisions that have the same effect as Section 203 of the Delaware General Corporation Law, except that they provide that MacAndrews and its various successors and affiliates (and transferees of any of them) will not be deemed to be "interested stockholders," regardless of the percentage of our stock owned by them, and accordingly will not be subject to such restrictions.

The provisions of our amended and restated certificate of incorporation and amended and restated bylaws, the significant common stock ownership of MacAndrews and the ability of the Board of Directors to create and issue a new series of preferred stock or implement a stockholder rights plan could discourage potential takeover attempts and reduce the price that investors might be willing to pay for shares of our common stock in the future, which could reduce the market price of our common stock.

We will be required to pay M&F TTP Holdings Two LLC ("M&F") for certain tax benefits we may claim. In certain circumstances, payments under the Tax Receivable Agreement may be accelerated and/or significantly exceed the actual tax benefits we realize.

The only asset of the Company is its interest in vTv LLC. Class B common stock, together with the corresponding number of vTv Units, may be exchanged for shares of our Class A common stock, or for cash, at our option (as the managing member of vTv LLC). These exchanges of Class B common stock, together with the corresponding number of vTv LLC Units, may result in increases in the tax basis of the assets of vTv LLC that otherwise would not have been available. Such increases in tax basis are likely to increase (for tax purposes) depreciation and amortization deductions and therefore reduce the amount of income tax we would otherwise be required to pay in the future and may also decrease gain (or increase loss) on future dispositions of certain assets to the extent the increased tax

basis is allocated to those assets. The IRS may challenge all or part of these tax basis increases and a court could sustain such a challenge.

We have entered into a Tax Receivable Agreement with vTv Therapeutics Holdings (an entity which was dissolved in October 2015, but to which M&F became a successor) that will provide for the payment by us to M&F (or certain of its transferees or other assignees) of 85% of the amount of cash savings, if any, in U.S. federal, state and local income tax or franchise tax that we actually realize (or, in some circumstances, we are deemed to realize) as a result of (a) the exchange of Class B common stock, together with the corresponding number of vTv Units, for shares of our Class A common stock (or for cash), (b) tax benefits related to imputed interest deemed to be paid by us as a result of the Tax Receivable Agreement and (c) certain tax benefits attributable to payments under the Tax Receivable Agreement. Although the actual increase in tax basis and the amount and timing of any payments under the Tax Receivable Agreement will vary depending upon a number of factors, including the timing of exchanges, the price of shares of our Class A common stock at the time of the exchange, the nature of the assets, the extent to which such exchanges are taxable, the tax rates then applicable, and the amount and timing of our income, we expect that the payments that we may make to M&F could be substantial.

M&F generally will not reimburse us for any payments that may previously have been made under the Tax Receivable Agreement even if the IRS subsequently disallows the tax basis increase or any other relevant tax item. Instead, any excess cash payments made by us to M&F will be netted against any future cash payments that we might otherwise be required to make under the terms of the Tax Receivable Agreement. However, we might not determine that we have effectively made an excess cash payment to M&F for a number of years following the initial time of such payment. As a result, in certain circumstances we could make payments to M&F under the Tax Receivable Agreement in excess of our cash tax savings. Our ability to achieve benefits from any tax basis increase and the payments to be made under the Tax Receivable Agreement, will depend upon a number of factors, including the timing and amount of our future income and the nature of our assets.

To the extent that we are unable to make payments under the Tax Receivable Agreement for any reason, such payments will be deferred and will accrue interest until paid. In addition, the Tax Receivable Agreement provides that, upon a merger, asset sale or other form of business combination or certain other changes of control or if, at any time, we elect an early termination of the Tax Receivable Agreement, our (or our successor's) obligations under the Tax Receivable Agreement with respect to exchanged or acquired Class B common stock, together with the corresponding number of vTv Units (whether exchanged or acquired before or after such change of control or early termination), would be required to be paid significantly in advance of the actual realization, if any, of any future tax benefits and would be based on certain assumptions, including that we would have sufficient taxable income to fully utilize the deductions arising from the increased tax deductions and tax basis and other benefits related to entering into the Tax Receivable Agreement, and, in the case of certain early termination elections, that any Class B common stock, together with the corresponding number of vTv Units, that have not been exchanged will be deemed exchanged for the market value of the Class A common stock at the time of termination. Consequently, it is possible that the actual cash tax savings realized by us may be significantly less than the corresponding Tax Receivable Agreement payments.

The only asset of the Company is its interest in vTv LLC, and accordingly it will depend on distributions from vTv LLC to pay taxes and expenses, including payments under the Tax Receivable Agreement. vTv LLC's ability to make such distributions may be subject to various limitations and restrictions.

The Company is a holding company, has no material assets other than its ownership of vTv Units and has no independent means of generating revenue or cash flow. vTv LLC is treated as a partnership for U.S. federal income tax purposes and, as such, is not subject to any entity-level U.S. federal income tax. Instead, taxable income will be allocated to holders of its common units, including us. As a result, we will incur U.S. federal, state and local income taxes on our allocable share of any net taxable income of vTv LLC. Under the terms of vTv LLC's Amended and Restated LLC Agreement, vTv LLC will be obligated to make tax distributions to holders of its common units, including us. In addition to tax expenses, we will also incur expenses related to our operations, including expenses under the Tax Receivable Agreement, which could be significant. We intend, as its managing member, to cause vTv LLC to make distributions in an amount sufficient to allow us to pay our taxes and operating expenses, including any payments due under the Tax Receivable Agreement. However, vTv LLC's ability to make such distributions may be subject to various limitations and restrictions including, but not limited to, restrictions on distributions that would either violate any contract or agreement to which vTv LLC is then a party, including the Loan Agreement or any other potential debt agreements, or any applicable law, or that would have the effect of rendering vTv LLC insolvent. If vTv LLC does not distribute sufficient funds for us to pay our taxes or other liabilities, we may have to borrow funds, which could adversely affect our liquidity and subject us to various restrictions imposed by any such lenders. To the extent that we are unable to make payments under the Tax Receivable Agreement for any reason, such payments will be deferred and will accrue interest until paid.

Our organizational structure confers certain benefits upon M&F and certain of its successors and assigns that will not benefit Class A common stockholders to the same extent as it will benefit M&F.

Our organizational structure, including the fact that M&F owns more than 50% of the voting power of our outstanding voting stock and owns part of its economic interest in our business through vTv LLC, confers certain benefits upon M&F that will not benefit the holders of our Class A common stock to the same extent as it will benefit M&F. For example, the Tax Receivable Agreement will provide for the payment by us to M&F (or certain of its transferees or other assignees) of 85% of the amount of cash savings, if any, in U.S. federal, state and local income tax or franchise tax that we actually realize (or, in some circumstances, we are deemed to realize) as a result of (a) the exchange of Class B common stock, together with the corresponding number of vTv Units, for shares of our Class A common stock (or for cash), (b) tax benefits related to imputed interest deemed to be paid by us as a result of the Tax Receivable Agreement and (c) certain tax benefits attributable to payments under the Tax Receivable Agreement. Although we will retain 15% of the amount of such tax benefits, it is possible that the interests of M&F may in some circumstances conflict with our interests and the interests of our other stockholders. For example, M&F may have different tax positions from us, especially in light of the Tax Receivable Agreement, that could influence their decisions regarding whether and when we should dispose of assets, whether and when we should incur new or refinance existing indebtedness, and whether and when we should terminate the Tax Receivable Agreement and accelerate our obligations thereunder. In addition, the determination of future tax reporting positions, the structuring of future transactions and the handling of any future challenges by any taxing authority to our tax reporting positions may take into consideration M&F's tax or other considerations, which may differ from the considerations of us or our other stockholders. To the extent that M&F is dissolved or liquidated, MacAndrews and/or its affiliates will succeed to the rights and obligations of M&F under the Tax Receivable Agreement, and the same considerations described above apply to any such successor parties.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our corporate headquarters and lab facilities are located in High Point, North Carolina, where we lease 32,776 square feet of mixed laboratory and office space in the Mendenhall Oaks office park. The lease agreement for this space continues through December 2019.

We believe that our existing facilities are adequate for our current and expected future needs. We may seek to negotiate new leases or look for additional or alternate space for our operations. We believe that appropriate alternative space is readily available at similar rents.

ITEM 3. LEGAL PROCEEDINGS

We are not currently a party to any material legal proceedings.

ITEM 4. MINE SAFETY DISCLOSURES

None.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Our Class A common stock is listed on the NASDAQ Global Select Market under the symbol "VTVT". The following table sets forth the high and low sale prices per share for our Class A common stock, as reported on the NASDAQ Global Select Market for the periods indicated:

	High	Low
Calendar Quarter – 2016		
First Quarter	$ 7.68	$ 5.00
Second Quarter	7.06	4.84
Third Quarter	7.50	5.28
Fourth Quarter	7.25	4.65

	High	Low
Calendar Quarter – 2017		
First Quarter	$ 6.65	$ 4.79
Second Quarter	6.80	4.56
Third Quarter	6.16	3.57
Fourth Quarter	8.09	3.84

Dividend Policy

No cash dividends have ever been declared or paid on the common equity to date by the Company. Our ability to pay dividends is restricted by our Loan Agreement. See "Management's Discussion and Analysis of Financial Conditions and Results of Operations – Liquidity and Capital Resources" in Item 7.

Holders

As of February 23, 2018, there were approximately 21 holders of record of our Class A common stock and 9 holders of record of our Class B common stock. Because almost all of the shares of our Class A common stock are held by brokers, nominees and other institutions on behalf of shareholders, we are unable to estimate the total number of shareholders represented by these record holders.

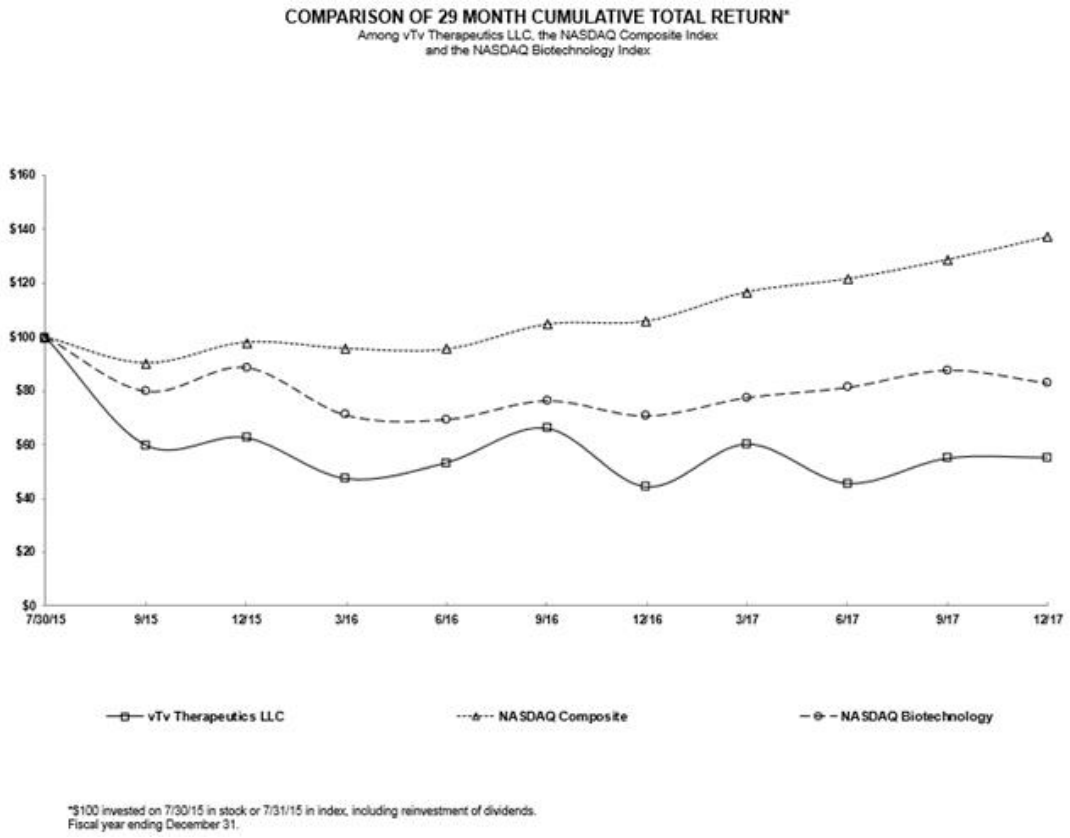
Securities Authorized for Issuance under Equity Compensation Plans

The following table summarizes information about our equity compensation plans as of December 31, 2017. The only awards that have been granted under the plan below are in the form of option and restricted stock unit awards related to our Class A common stock:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted-average Exercise Price of Outstanding Options, Warrants and Rights (b)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders			
2015 Omnibus Equity Incentive Plan	1,960,732	$ 8.50	1,289,268
Equity compensation plans not approved by security holders			
Total	1,960,732		1,289,268

Performance Graph

The following graph shows a comparison from July 30, 2015 (the date our Class A common stock commenced trading on The NASDAQ Global Market) through December 31, 2017 of the cumulative total return for our Class A common stock, the NASDAQ Biotechnology Index and the NASDAQ Composite Index. The graph assumes an initial investment of $100 on July 30, 2015. The comparisons in the graph are not intended to forecast or be indicative of possible future performance of our common stock.



Issuer Purchases of Equity Securities

There have been no repurchases of the Company's common stock during the fourth fiscal quarter of fiscal 2017.

ITEM 6. SELECTED FINANCIAL DATA

The following selected financial data should be read together with the information under "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and the notes to those financial statements included elsewhere in this Annual Report on Form 10-K. The selected statements of operations data for the years ended December 31, 2017, 2016 and 2015 and balance sheet data as of December 31, 2017 and 2016 set forth below have been derived from our audited financial statements included elsewhere in this Annual Report on Form 10-K. The selected statements of operations data for the years ended December 31, 2014 and 2013 and the selected balance sheet data as of December 31, 2015, 2014 and 2013 set forth below has been derived from the audited financial statements for such year not included in this Annual Report on Form 10-K. The historical periods presented here are not necessarily indicative of future results.

	Year Ended December 31,				
(dollars in thousands, except for per share data)	**2017**	**2016**	**2015**	**2014**	**2013**
Statement of operations data:					
Revenue	$ 291	$ 634	$ 519	$ 1,549	$ 976
Research and development	39,640	45,748	29,584	18,729	25,434
General and administrative	11,333	9,906	9,077	11,717	11,375
Total operating expenses	50,973	55,654	38,661	30,446	36,809
Loss from operations	(50,682)	(55,020)	(38,142)	(28,897)	(35,833)
Other expense, net	(3,165)	(333)	(2,965)	(7,204)	(12,370)
Income tax provision	800	—	—	—	—
Net loss attributable to noncontrolling interest	(38,503)	(39,001)	(13,609)	—	—
Net loss attributable to vTv Therapeutics Inc.	(16,144)	(16,352)	(27,498)	(36,101)	(48,203)
Net loss per share, basic and diluted (1)	$ (1.67)	$ (1.71)	$ (3.32)		
Weighted average number of shares outstanding, basic and diluted	9,693,254	9,545,527	8,276,520		

Balance sheet data:	**2017**	**2016**	**2015**	**2014**	**2013**
Cash and cash equivalents	$ 11,758	$ 51,505	$ 88,003	$ 1,384	$ 1,089
Working capital	(6,567)	40,683	81,460	(5,253)	(85,160)
Total assets	27,917	54,495	91,532	12,951	15,504
Current liabilities	26,929	11,434	7,726	6,864	87,584
Long-term debt, net of current portion	15,316	11,058	—	29,420	2,265
Deferred revenue, net of current portion	4,497	—	—	—	—
Other liabilities, net of current portion	782	433	245	37,387	18
Redeemable convertible preferred units	—	—	—	438,086	229,370
Redeemable noncontrolling interest	131,440	122,515	161,531	—	—
Total stockholders'/members' deficit	(151,047)	(90,945)	(77,970)	(498,806)	(303,733)

(1) Loss per share is not presented for the years ended December 31, 2014 and 2013 as the Company did not have any economic interests prior to the date of the IPO and Reorganization Transactions through which it was given ownership in vTv LLC. Losses prior to the IPO and Reorganization Transactions would have been allocated to the original members of TTP and HPP. Loss per share for the year ended December 31, 2015 includes the 2015 losses recognized both prior and subsequent to the IPO and Reorganization Transactions. See "Management's Discussion and Analysis of Financial Condition and Results of Operations" for additional information regarding the IPO and Refinancing Transactions.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis should be read in conjunction with "Selected Financial Data" and our consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. This discussion and analysis contains forward-looking statements based upon current beliefs, plans and expectations that involve risks, uncertainties and assumptions, such as statements regarding our plans, objectives, expectations, intentions and projections. Our actual results and the timing of selected events could differ materially from those anticipated in these forward-looking statements as a result of several factors, including those set forth in Part I, Item 1A, "Risk Factors" in this Annual Report on Form 10-K. See the sections entitled "Risk Factors" and "Cautionary Note Regarding Forward-Looking Statements."

Company Overview

We are a clinical-stage biopharmaceutical company engaged in the discovery and development of orally administered small molecule drug candidates to fill significant unmet medical needs. We have a powerful pipeline of clinical drug candidates, led by our programs for the treatment of mild Alzheimer's disease ("AD") and diabetes. Our drug candidate for the treatment of mild AD, *azeliragon* (*TTP488*), is an orally administered, small molecule antagonist targeting the receptor for advanced glycation endproducts ("RAGE"), for which we have completed enrollment of both sub-studies for a Phase 3 clinical trial (the "STEADFAST Study") under a Food and Drug Administration ("FDA") agreed Special Protocol Assessment ("SPA").

Our diabetes drug candidates include *TTP399*, an orally administered, liver-selective glucokinase activator ("GKA"), for which we have completed our Phase 2b clinical trial in type 2 diabetes (the "AGATA Study"), and *TTP273*, an orally administered, non-peptide agonist that targets the glucagon-like peptide-1 receptor ("GLP-1r"), for which we have completed a Phase 2 clinical trial in type 2 diabetes (the "LOGRA Study") in December 2016.

In August 2017, we entered into a research, development and commercialization agreement with JDRF International ("JDRF") (the "JDRF Agreement") to support the funding of the simplici-T1 Study, an adaptive Phase 1b/2 study to explore the effects of *TTP399* in type 1 diabetics. This trial was initiated in the fourth quarter of 2017. According to the terms of the JDRF Agreement, JDRF will provide research funding of up to $3.0 million based on the achievement of research and development milestones, with the total funding provided by JDRF not to exceed approximately one-half of the total cost of the project. Additionally, we have the obligation to make certain milestone payments to JDRF upon the commercialization, licensing, sale or transfer of *TTP399* as a treatment for type 1 diabetes.

In December 2017, we entered into a License Agreement with Hangzhou Zhongmei Huadong Pharmaceutical Co., Ltd. ("Huadong") (the "Huadong License Agreement"), under which Huadong obtained an exclusive and sublicensable license to develop and commercialize our glucagon-like peptide-1 receptor agonist ("GLP-1r") program, including the compound *TTP273*, in China and certain other Pacific Rim countries, including Australia and South Korea.

We also entered into a License Agreement with Reneo Pharmaceuticals, Inc. ("Reneo") (the "Reneo License Agreement") in December 2017, under which Reneo obtained an exclusive, worldwide, sublicensable license to develop and commercialize our peroxisome proliferation activated receptor delta agonist program, including the compound HPP593.

For more information regarding the JDRF Agreement, the Huadong License Agreement and Reneo License Agreement, see Item 1 – "Business – Intellectual Property – License and Research Agreements".

In addition to the above, we also have two additional programs in various stages of preclinical and clinical development for the treatment of inflammatory disorders.

Subsequent to our initial public offering (the "IPO") and the related reorganization transactions (the "Reorganization Transactions"), vTv Therapeutics Inc. (the "Company", the "Registrant", "we" or "us") is a holding company, and its principal asset is a controlling equity interest in vTv Therapeutics LLC ("vTv LLC"), the Company's principal operating subsidiary. The Company has determined that vTv LLC is a variable-interest entity ("VIE") for accounting purposes and that vTv Therapeutics Inc. is the primary beneficiary of vTv LLC because (through its managing member interest in vTv LLC and the fact that the senior management of vTv Therapeutics Inc. is also the senior management of vTv LLC) it has the power to direct all of the activities of vTv LLC, which include those that most significantly impact vTv LLC's economic performance. vTv Therapeutics Inc. has therefore consolidated vTv LLC's results under the VIE accounting model in its Consolidated Financial Statements.

As the Reorganization Transactions were considered to be among entities under common control, the Consolidated Financial Statements for periods prior to the IPO and Reorganization Transactions have been adjusted to combine vTvx Holdings I LLC (formerly known as TransTech Pharma, LLC, "TTP" or "vTvx Holdings I") and vTvx Holdings II LLC (formerly known as and High Point Pharmaceuticals, LLC, "HPP" or "vTvx Holdings II" and, collectively with TTP or vTvx Holdings I, the "Predecessors") for presentation purposes.

To date, we have devoted substantially all of our resources to our research and development efforts relating to our investigational drug candidates, including conducting clinical trials with our drug candidates, providing general and administrative support for these operations and protecting our intellectual property. We do not have any products approved for sale and have not generated any revenue from drug sales. From our inception through December 31, 2017, we (including our Predecessors) have funded our operations primarily through:

- a series of private placements of preferred equity from 1999 through 2006 totaling $109.3 million;
- the receipt of $23.4 million from completed research collaborations with Novo Nordisk, A/S Merck and Boehringher Ingelheim from 2001 to 2006;
- the receipt of $169.2 million of upfront, milestone and research fees during 2006 to 2010 under a license and research agreement with Pfizer, Inc., which was terminated in 2011;

- the receipt of $55.7 million of upfront, milestone and research expense reimbursements from 2010 to 2013 under a license agreement for our GKA programs with an affiliate of Forest Laboratories, Inc., which was terminated in 2013;
- various borrowings totaling $114.7 million from November 2011 through March 2014 from entities affiliated with MacAndrews & Forbes Incorporated ("MacAndrews"), which were converted to Series F and Series B preferred units of TTP and HPP, our predecessors;
- borrowings of $46.6 million from April 2014 through June 2015 from entities affiliated with MacAndrews;
- the completion of the IPO in August 2015, which raised proceeds of $104.4 million from the sale of our Class A common stock, par value $0.01 per share (the "Class A Common Stock"), net of offering costs;
- borrowings totaling $20.0 million from a venture loan and security agreement (the "Loan Agreement") with Horizon Technology Finance Corporation and Silicon Valley Bank (together, the "Lenders") in October 2016 and March 2017; and
- a letter agreement (the "Letter Agreement") with MacAndrews in December 2017, under which, until December 5, 2018, we have the right to sell to MacAndrews shares of our Class A common stock at a price equal to $4.38 per share, and MacAndrews has the right (exercisable up to three times) to require us to sell to it shares of Class A common stock at the same price (subject to an aggregate maximum of $10.0 million worth of Class A common stock that may be sold under the Letter Agreement, whether at our option or MacAndrews').

We expect to continue to incur significant expenses and increasing operating losses for at least the next several years. We anticipate that our expenses will increase substantially as we:

- continue the development of our lead drug candidate, *azeliragon*, for the treatment of mild AD;
- seek to obtain regulatory approvals for *azeliragon*;
- prepare for the potential commercialization of *azeliragon*;
- begin outsourcing of the commercial manufacturing of *azeliragon* for any indications for which we receive regulatory approval;
- expand our research and development activities and advance our clinical programs, including our diabetes programs *TTP399* and *TTP273*; and
- maintain, expand and protect our intellectual property portfolio.

We do not expect to generate revenue from drug sales unless and until we successfully complete development and obtain marketing approval for one or more of our drug candidates, which we expect will take a number of years and will be subject to significant uncertainty. Accordingly, we will need to raise additional capital prior to the commercialization of *azeliragon* or any of our other drug candidates. Until such time that we can generate substantial revenue from product sales, we expect to finance our operating activities through a combination of equity offerings, debt financings, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements. Nevertheless, we may be unable to raise additional funds or enter into such other arrangements when needed, on favorable terms or at all, which would have a negative impact on our liquidity and financial condition and could force us to delay, reduce the scope or eliminate one or more of our research and development programs or commercialization efforts. Failure to receive additional funding could cause us to cease operations, in part or in full.

Financial Overview

Revenue

To date, we have not generated any revenue from drug sales. Our revenue has been primarily derived from up-front proceeds and research fees under collaboration and license agreements.

In the future, we may generate revenue from a combination of product sales, license fees, milestone payments and royalties from the sales of products developed under licenses of our intellectual property. We expect that any revenue we generate will fluctuate from quarter to quarter as a result of the timing and amount of license fees, milestone and other payments, and the amount and timing of payments that we receive upon the sale of our products, to the extent any are successfully commercialized. If we fail to complete the development of our drug candidates in a timely manner or obtain regulatory approval for them, our ability to generate future revenue and our results of operations and financial position will be materially adversely affected.

Research and Development Expenses

Since our inception, we have focused our resources on our research and development activities, including conducting preclinical studies and clinical trials, manufacturing development efforts and activities related to regulatory filings for our drug candidates. We recognize research and development expenses as they are incurred. Our direct research and development expenses consist primarily of external costs such as fees paid to investigators, consultants, central laboratories and clinical research organizations ("CRO(s)"), in connection with our clinical trials, and costs related to acquiring and manufacturing clinical trial materials. Our indirect research and development costs consist primarily of salaries, benefits and related overhead expenses for personnel in research and development functions and depreciation of leasehold improvements, laboratory equipment and computers. Since we typically use our employee and infrastructure resources across multiple research and development programs such costs are not allocated to the individual projects.

From the inception of our Predecessors, through December 31, 2017, we have incurred approximately $541.9 million in research and development expenses.

Our research and development expenses by project for the years ended December 31, 2017, 2016 and 2015 were as follows (in thousands):

	Years Ended December 31,		
	2017	2016	2015
Direct research and development expense:			
Azeliragon	$ 28,206	$ 29,430	$ 14,079
TTP399	418	2,598	4,114
TTP273	352	3,838	3,189
Other projects	1,001	1,353	1,149
Indirect research and development expense	9,663	8,529	7,053
Total research and development expense	$ 39,640	$ 45,748	$ 29,584

We plan to increase our research and development expenses for the foreseeable future as we continue the development of *azeliragon* and to further advance the development of our other drug candidates, subject to the availability of additional funding.

The successful development of our clinical and preclinical drug candidates is highly uncertain. At this time, we cannot reasonably estimate the nature, timing or costs of the efforts that will be necessary to complete the remainder of the development of any of our clinical or preclinical drug candidates or the period, if any, in which material net cash inflows from these drug candidates may commence. This is due to the numerous risks and uncertainties associated with the development of our drug candidates, including:

- the uncertainty of the scope, rate of progress and expense of our ongoing, as well as any additional, clinical trials and other research and development activities;
- the potential benefits of our candidates over other therapies;
- our ability to market, commercialize and achieve market acceptance for any of our drug candidates that we are developing or may develop in the future;
- future clinical trial results;
- our ability to enroll patients in our clinical trials;
- the timing and receipt of any regulatory approvals; and
- the filing, prosecuting, defending and enforcing of patent claims and other intellectual property rights, and the expense of doing so.

A change in the outcome of any of these variables with respect to the development of a drug candidate could mean a significant change in the costs and timing associated with the development of that drug candidate. For example, if the FDA or another regulatory authority were to require us to conduct clinical trials beyond those that we currently anticipate will be required for the completion of clinical development of a drug candidate, or if we experience significant delays in enrollment in any of our clinical trials, we could be required to expend significant additional financial resources and time with respect to the development of that drug candidate.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries, benefits and related costs for employees in executive, finance, corporate development, human resources and administrative support functions. Other significant general and administrative expenses

include accounting and legal services, expenses associated with obtaining and maintaining patents, cost of various consultants, occupancy costs and information systems.

Our general and administrative expenses have increased and will continue to increase as we operate as a public company and commercialize our drug candidates. Such increases have been driven by higher costs for director and officer liability insurance, costs related to the hiring of additional personnel and increased fees for outside consultants, lawyers and accountants.

Interest Expense, Net

For periods prior to the IPO and Reorganization Transactions, interest expense, net primarily consists of interest expense attributable to certain obligations that were not assumed by vTv Therapeutics Inc. through the Reorganization Transactions. Beginning in October 2016, interest expense, net primarily consists of our cash and non-cash interest expense related to our Loan Agreement. Cash interest on the Loan Agreement is recognized at a floating interest rate equal to 10.5% plus the amount by which the one-month London Interbank Offer Rate ("LIBOR") exceeds 0.5%. Non-cash interest expense represents the amortization of the costs incurred in connection with the Loan Agreement, the allocated fair value of the warrants to purchase shares of our Class A Common Stock issued in connection with the Loan Agreement (the "Warrants") and the accretion of the final interest payment (which will be paid in cash upon loan maturity), all of which are recognized in our Consolidated Statement of Operations using the effective interest method.

Other Income (Expense), Net

Other income (expense), net primarily consists of expenses related to our capital structure prior to the IPO and Reorganization Transactions, such as expense related to interest expense on related party debt obligations and the change in the fair value of an obligation to make distributions to a former officer in exchange for the repurchase of the officer's predecessor company units (the "Contingent Distributions"). Such expenses have not been recognized by us after fiscal 2015 as the related instruments were not assumed by vTv Therapeutics Inc. through the Reorganization Transactions.

Results of Operations

Comparison of the year ended December 31, 2017 and 2016

The following table sets forth certain information concerning our results of operations for the periods shown:

(dollars in thousands) Statement of operations data:	Year Ended 2017	2016	Change
Revenue	$ 291	$ 634	$ (343)
Operating expenses:			
Research and development	39,640	45,748	(6,108)
General and administrative	11,333	9,906	1,427
Total operating expenses	50,973	55,654	(4,681)
Operating loss	(50,682)	(55,020)	4,338
Interest income	117	87	30
Interest expense	(3,092)	(398)	(2,694)
Other expense, net	(190)	(22)	(168)
Loss before income taxes	(53,847)	(55,353)	1,506
Income tax provision	800	—	800
Net loss before noncontrolling interest	(54,647)	(55,353)	706
Less: net loss attributable to noncontrolling interest	(38,503)	(39,001)	498
Net loss attributable to vTv Therapeutics Inc.	$ (16,144)	$ (16,352)	$ 208

Revenues

Revenues were $0.3 million and $0.6 million for the years ended December 31, 2017 and 2016, respectively. The revenue earned during the year ended December 31, 2017 primarily relates to the Huadong and Reneo License Agreements, which were entered into in December 2017. The revenue earned during the year ended December 31, 2016 was primarily attributable to the global license agreement that we entered into with Calithera in March 2015. We recognize the portion of the consideration received allocated to the license deliverable for each of these agreements over the requisite knowledge transfer or research service periods. The portion of revenue allocated to the other deliverables under the license agreements will be recognized as performance occurs.

Research and Development Expenses

Research and development expenses were $39.6 million and $45.7 million for the years ended December 31, 2017 and 2016, respectively. The decrease in research and development expenses during the period of $6.1 million, or 13.4%, was primarily due to:

- A decrease in clinical trial costs of $1.2 million for *azeliragon* from 2016, which was mainly driven by decreases of $2.6 million related to the timing of drug-drug interaction and other supporting studies. These studies were conducted primarily in 2016 and were completed in early 2017. Additionally, we saw decreases of $0.9 million in compound manufacturing costs for drug product from 2016 as drug product was manufactured in 2016 for the support of the STEADFAST Study and the open-label extension ("OLE") trial. Such decreases were offset by an increase of $1.2 million in cost related to the OLE trial as patients completing the STEADFAST Study elect to continue in the OLE study and an increase of $0.9 million related to the cost of consultants engaged to assist primarily with the conduct of the STEADFAST Study;
- A decrease in clinical trial costs of $2.2 million for *TTP399* from 2016, which was mainly driven by lower costs for the AGATA Study due to its completion in August 2016, partially offset by spending on the simpliciT-1 trial which began in late 2017;
- A decrease in clinical trial costs of $3.5 million for *TTP273* from 2016, due to the completion of the LOGRA study in December 2016; and
- An increase in other research and development costs of $1.1 million, primarily driven by an increase in the expense related to share-based awards and other compensation costs.

General and Administrative Expenses

General and administrative expenses were $11.3 million and $9.9 million for the years ended December 31, 2017 and 2016, respectively. The increase in general and administrative expenses during this period of $1.4 million, or 14.4%, was primarily due to increases in professional and legal fees of $0.3 million primarily related to the license agreements entered into in 2017 coupled with increases in compensation costs of approximately $0.9 million due to grants of additional share-based compensation awards as well as the impact of additional personnel hired in both years.

Interest Expense, Net

Interest expense, net was $3.1 million and $0.4 million for the years ended December 31, 2017 and 2016, respectively. Interest expense primarily relates to our Loan Agreement which was entered into in late October 2016 and which bears interest at 10.5% plus the amount by which the one-month LIBOR exceeds 0.5%. The increase in such interest expense for the year ended December 31, 2017 relates to both the borrowing of the second tranche in March 2017 as well as the period of time for which the loan was outstanding in each year.

Comparison of the Years Ended December 31, 2016 and 2015

The following table sets forth certain information concerning our results of operations for the periods shown:

(dollars in thousands) Statement of operations data:	Year Ended 2016	2015	Change
Revenue	$ 634	$ 519	$ 115
Operating expenses:			
Research and development	45,748	29,584	16,164
General and administrative	9,906	9,077	829
Total operating expenses	55,654	38,661	16,993
Operating loss	(55,020)	(38,142)	(16,878)
Interest income	87	40	47
Interest expense	(398)	(108)	(290)
Other expense, net	(22)	(2,897)	2,875
Loss before income taxes	(55,353)	(41,107)	(14,246)
Income tax provision	—	—	—
Net loss before noncontrolling interest	(55,353)	(41,107)	(14,246)
Less: net loss attributable to noncontrolling interest	(39,001)	(13,609)	(25,392)
Net loss attributable to vTv Therapeutics Inc.	$ (16,352)	$ (27,498)	$ 11,146

Revenues

Revenues were $0.6 million and $0.5 million for the years ended December 31, 2016 and 2015, respectively. The revenue earned during the years ended December 31, 2016 and 2015 was primarily attributable to the global license agreement that we entered into with Calithera Biosciences, Inc. ("Calithera") in March 2015. In connection with this agreement we recognized as revenue an initial license fee of $0.6 million and reimbursement of costs associated with the time devoted by our employees to develop additional hexokinase inhibitors.

Research and Development Expenses

Research and development expenses were $45.7 million and $29.6 million for the years ended December 31, 2016 and 2015, respectively. The increase in research and development expenses during the period of $16.2 million, or 54.6%, was primarily due to:

- An increase in clinical trial costs of $15.4 million for *azeliragon* in 2016, which was mainly driven by an increase of $9.1 million related to the STEADFAST Study due to higher enrollment and related activities in 2016; an increase of $3.3 million in costs related to a drug-drug interaction and other supporting studies in 2016; and an increase of $2.5 million related to compound manufacturing costs for drug product to support the STEADFAST Study;
- A decrease in clinical trial costs of $1.5 million for *TTP399* in 2016, which was mainly driven by lower costs for the AGATA Study due to its completion in August 2016 and decreases in compound manufacturing costs from 2015 because the drug product for the AGATA Study was sourced in 2015;
- An increase in clinical trial costs of $0.6 million for *TTP273* in 2016, due to an increase of $2.5 million driven by the clinical trial costs incurred in 2016 related to the LOGRA Study, which began in January 2016, that outweighed the reduction in compound manufacturing costs of $1.9 million driven by the manufacture of the drug product for the trial in 2015; and
- An increase in other research and development costs of $1.5 million, primarily driven by an increase in compensation costs as headcount was increased to support the management of the clinical trials mentioned above, and the expense related to share-based awards.

General and Administrative Expenses

General and administrative expenses were $9.9 million and $9.1 million for the years ended December 31, 2016 and 2015, respectively. The increase in general and administrative expenses during this period of $0.8 million, or 9.1%, was primarily due to a $2.1 million increase in compensation costs related to the addition of personnel to support our compliance with public company requirements and the expense related to share-based awards. Such increase was offset by reductions in legal and professional service expenses of $1.4 million as such expenses were higher in 2015 as we prepared for our IPO.

Interest Expense, Net

Interest expense, net was $0.4 million and $0.1 million for the years ended December 31, 2016 and 2015, respectively. Interest expense recognized in 2016 relates to our Loan Agreement which was entered into in late October 2016 and which bears interest at 10.5% plus the amount by which the one-month LIBOR exceeds 0.5%.

Other Expense, Net

Other expense, net primarily consisted of expenses related to our capital structure prior to the IPO and Reorganization Transactions, such as related party interest expense and other expense related to the change in the fair value of contingent distribution liability. Such expenses will no longer be recognized by us after fiscal 2015 as many of the related instruments were not assumed by vTv Therapeutics Inc. through the Reorganization Transactions. Included in this amount is interest expense, net recognized for transactions with related parties under these prior agreements in 2015 was $1.7 million. In addition, we recognized other income of $0.7 million as a result of the decrease in the fair value of the contingent distribution liability during the year ended December 31, 2015.

Liquidity and Capital Resources

Liquidity and Going Concern

As of December 31, 2017, we had an accumulated deficit of $279.1 million. Since the inception of our Predecessors, we have experienced a history of negative cash flows from operating activities. We anticipate that we will continue to incur losses for the

foreseeable future as we continue our clinical trials. Further, we expect that we will need additional capital to continue to fund our operations. Our currently available sources of liquidity include our unrestricted balance of cash and cash equivalents of $11.8 million at December 31, 2017, the $7.2 million upfront payment receivable from our Huadong License Agreement, net of applicable foreign withholding taxes, and the $10.0 million of funds available under the Letter Agreement. Based on our current operating plan, we believe that our current cash and cash equivalents will allow us to meet our liquidity requirements through the receipt of top-line results for Subpart A of our STEADFAST Study which we anticipate receiving in April 2018. These factors raise substantial doubt regarding our ability to continue as a going concern. In addition to available cash and cash equivalents, we are seeking possible partnering opportunities for our GKA, GLP-1r and other drug candidates which we believe may provide additional cash for use in our operations and the continuation of the clinical trials for our drug candidates. We may also pursue other sources of additional financing to provide flexibility to our operating plan. The timing and availability of such additional financing is not yet known.

Equity Financing

In December 2017, we entered into the Letter Agreement with MacAndrews. Under the Letter Agreement, until December 5, 2018, we have the right to sell to MacAndrews shares of our Class A common stock at a price equal to $4.38 per share, and MacAndrews has the right (exercisable up to three times) to require us to sell to it shares of Class A common stock at the same price. An aggregate of $10.0 million worth of Class A common stock may be sold under the Letter Agreement (whether at our or MacAndrews' option). In addition, in connection with the Letter Agreement, we also issued to MacAndrews warrants to purchase 198,267 shares of our Class A common stock at a price of $5.04 per share, exercisable until December 5, 2024.

Debt Transaction

In October 2016, we and vTv LLC entered into the Loan Agreement with Horizon Technology Finance Corporation and Silicon Valley Bank, under which we have borrowed $20.0 million. Each loan tranche bears interest at a floating rate equal to 10.5% plus the amount by which the one-month LIBOR exceeds 0.5%.

We borrowed the first tranche of $12.5 million upon the close of the Loan Agreement in October 2016. The first tranche requires only monthly interest payments until May 1, 2018, followed by equal monthly payments of principal plus accrued interest through the scheduled maturity date on May 1, 2020. In addition, a final payment for the first tranche loan equal to $0.8 million will be due on May 1, 2020, or such earlier date specified in the Loan Agreement. We borrowed the second tranche of $7.5 million in March 2017. The second tranche requires only monthly interest payments until October 1, 2018, followed by equal monthly payments of principal plus accrued interest through the scheduled maturity date on October 1, 2020. In addition, a final payment for the second tranche loan equal to $0.5 million will be due on October 1, 2020, or such earlier date specified in the Loan Agreement. The availability of the third tranche of $5.0 million expired unused on June 30, 2017.

If we repay all or a portion of the loan prior to the applicable maturity date, we will pay the Lenders a prepayment penalty fee, based on a percentage of the then outstanding principal balance equal to 4.0% during the first 18 months following the funding of the second tranche and 2.0% thereafter.

In connection with the Loan Agreement, we have issued to the Lenders warrants to purchase shares of our Class A common stock (the "Warrants"). On October 28, 2016, we issued Warrants to purchase 152,580 shares of our Class A common stock at a per share exercise price of $6.39 per share, which aggregate exercise price represents 6.0% of the principal amount borrowed under the first tranche of the Loan Agreement and 3.0% of the amount available under the second tranche of the Loan Agreement. On March 24, 2017, in connection with the funding of the second tranche, we issued Warrants to purchase 38,006 shares of our Class A common stock at a per share exercise price of $5.92 per share, which aggregate exercise price represents 3.0% of the principal amount of the second tranche. In each instance, the Warrants have an exercise price equal to the lower of (a) the volume weighted average price per share of our Class A common stock, as reported on the principal stock exchange on which our Class A common stock is listed, for 10 trading days prior to the issuance of the applicable Warrants or (b) the closing price of a share of our Class A common stock on the trading day prior to the issuance of the applicable Warrants. The Warrants will expire seven years from their date of issuance.

The Loan Agreement includes customary affirmative and restrictive covenants, including, but not limited to, restrictions on the payment of dividends or other equity distributions and the incurrence of debt or liens upon the assets of the Company or its subsidiaries. The Loan Agreement does not contain any financial maintenance covenants other than a requirement to maintain a minimum cash balance of not less than $2.5 million in a deposit account pledged to secure the Loan Agreement and subject to an account control agreement. The minimum cash balance covenant was included as part of an amendment to the Loan Agreement in connection with our entry into the Huadong License Agreement in December 2017. The Loan Agreement includes customary events of default, including payment defaults, covenant defaults and material adverse change default. Upon the occurrence of an event of default and following any

applicable cure periods, a default interest rate of an additional 5% will be applied to the outstanding loan balances, and the Lenders may declare all outstanding obligations immediately due and payable and take such other actions as set forth in the Loan Agreement.

Cash Flows

(dollars in thousands)	Year Ended December 31, 2017	2016
Net cash used in operating activities	$ (44,560)	$ (48,209)
Net cash used in investing activities	(25)	(83)
Net cash provided by financing activities	7,500	11,794
Net decrease in cash and cash equivalents	$ (37,085)	$ (36,498)

Operating Activities

For the year ended December 31, 2017, our net cash used in operating activities decreased $3.6 million from the prior year. The decrease in uses of cash was primarily driven by lower spending on our clinical trials during 2017 offset by the impact of the receipt of funds from the Reneo License Agreement coupled with the impact of changes in working capital.

Investing Activities

For the years ended December 31, 2017 and 2016, net cash used in investing activities was insignificant.

Financing Activities

For the year ended December 31, 2017, net cash provided by financing activities was $7.5 million compared to net cash provided by financing activities of $11.8 million for the year ended December 31, 2016, resulting in a decrease of $4.3 million. This change was driven by the relative amounts borrowed under our Loan Agreement in each year.

Future Funding Requirements

To date, we have not generated any revenue from drug product sales. We do not know when, or if, we will generate any revenue from drug product sales. We do not expect to generate revenue from drug sales unless and until we obtain regulatory approval of and commercialize *azeliragon* or any of our other drug candidates. At the same time, we expect our expenses to continue to increase in connection with our ongoing development activities, particularly as we continue the research, development and clinical trials of, and seek regulatory approval for, our drug candidates. In addition, subject to obtaining regulatory approval of any of our drug candidates, we expect to incur significant commercialization expenses for product sales, marketing, manufacturing and distribution. We anticipate that we will need substantial additional funding in connection with our continuing operations.

Based on our current operating plan, we believe that our current cash and cash equivalents and other committed sources of funds under the Letter Agreement will allow us to meet our liquidity requirements through the receipt of top-line results for Subpart A of our STEADFAST Study which we anticipate receiving in April 2018. In addition to the available cash and cash equivalents and other sources of liquidity, we are seeking possible additional partnering opportunities for our GKA, GLP-1r and other drug candidates which we believe may provide additional cash for use in our operations and the continuation of the clinical trials for our drug candidates. We may also pursue other sources of financing to provide flexibility to our operating plan. The timing and availability of such financing is not yet known. We have based our estimates on assumptions that may prove to be wrong, and we may use our available capital resources sooner than we currently expect. Because of the numerous risks and uncertainties associated with the development and commercialization of our drug candidates, we are unable to estimate the amounts of increased capital outlays and operating expenditures necessary to complete the development of our drug candidates.

Our future capital requirements will depend on many factors, including:

- the progress, costs, results and timing of the STEADFAST Study, and the clinical development of *azeliragon;*
- the willingness of the FDA to accept the STEADFAST Study, as well as our other completed and planned clinical and preclinical studies and other work, as the basis for review and approval of *azeliragon*;
- the outcome, costs and timing of seeking and obtaining FDA and any other regulatory approvals;

- the number and characteristics of drug candidates that we pursue, including our drug candidates in preclinical development;
- the ability of our drug candidates to progress through clinical development successfully;
- our need to expand our research and development activities;
- the costs associated with securing, establishing and maintaining commercialization capabilities;
- the costs of acquiring, licensing or investing in businesses, products, drug candidates and technologies;
- our ability to maintain, expand and defend the scope of our intellectual property portfolio, including the amount and timing of any payments we may be required to make, or that we may receive, in connection with the licensing, filing, prosecution, defense and enforcement of any patents or other intellectual property rights;
- our need and ability to hire additional management and scientific and medical personnel;
- the effect of competing technological and market developments;
- our need to implement additional internal systems and infrastructure, including financial and reporting systems;
- the economic and other terms, timing and success of our existing licensing arrangements and any collaboration, licensing or other arrangements into which we may enter in the future; and
- the amount of any payments we are required to make to M&F TTP Holdings Two LLC in the future under the Tax Receivable Agreement.

Until such time, if ever, as we can generate substantial revenue from drug sales, we expect to finance our cash needs through a combination of equity offerings, debt financings, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements. We do not currently have any committed external source of funds other than those available through the Letter Agreement. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interests of our common stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders. Debt financing and preferred equity financing, if available, may involve agreements that include covenants that will further limit or restrict our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may be required to relinquish valuable rights to our technologies, future revenue streams or drug candidates or grant licenses on terms that may not be favorable to us. If we are unable to obtain additional funding, we could be forced to delay, reduce or eliminate our research and development programs or commercialization efforts, which could adversely affect our business prospects.

Disclosures About Contractual Obligations and Commitments

The following table summarizes our contractual obligations at December 31, 2017 (in thousands):

	Total	Less Than 1 Year	1 - 3 Years	3 - 5 Years	More Than 5 Years
Principal payments under Loan Agreement	$ 20,000	$ 4,271	$ 15,729	$ —	$ —
Interest on Loan Agreement (1)	4,688	2,130	2,558	—	—
Operating lease commitments	722	356	366	—	—
Total contractual obligations	$ 25,410	$ 6,757	$ 18,653	$ —	$ —

(1) Interest payments associated with the Loan Agreement are projected based on interest rates in effect as of December 31, 2017 assuming no variable rate fluctuations going forward. An increase in the interest rates applicable to our Loan Agreement by 1% would result in an additional $0.2 million of annual cash interest expense. In addition to the estimated monthly cash interest payments, the projected interest payments stated above also include the 6% final interest payment to be paid upon the maturity of the debt obligation.

We enter into contracts in the normal course of business with CROs for clinical trials and clinical supply manufacturing and with vendors for preclinical research studies and other services and products for operating purposes, which generally provide for termination or cancellation within 30 days of notice, and therefore are not included in the table above. We also have entered into employment agreements with our Chief Executive Officer, Chief Financial Officer and Chief Medical Officer that require the funding of specific payments, if certain events occur, such as a change in control or the termination of their employment without cause. These potential

payment obligations are not included in the table above. Further, we have the obligation to conduct clinical trials under both the JDRF Agreement and the Huadong License Agreement. Due to the uncertainty of the timing of these costs, such obligations have not been included in the table above.

Off-Balance Sheet Arrangements

In December 2017, we entered into the Letter Agreement with MacAndrews to provide additional funding for our operations. Under the Letter Agreement, until December 5, 2018, we have the right to sell to MacAndrews shares of our Class A common stock at a price equal to $4.38 per share, and MacAndrews has the right (exercisable up to three times) to require us to sell to it shares of Class A common stock at the same price. An aggregate of $10.0 million worth of Class A common stock may be sold under the Letter Agreement (whether at our or MacAndrews' option). In addition, in connection with the Letter Agreement, we also issued MacAndrews warrants to purchase 198,267 shares of our Class A common stock at a price of $5.04 per share, exercisable until December 5, 2024.

Discussion of Critical Accounting Policies

Our management's discussion and analysis of our financial condition and results of operations is based on our financial statements, which we have prepared in accordance with generally accepted accounting principles in the United States ("GAAP"). The preparation of our financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of our financial statements, as well as the reported revenues and expenses during the reported periods. We evaluate these estimates and judgments on an ongoing basis. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are more fully described in Note 2, "Summary of Significant Accounting Policies," to our audited financial statements, we believe that the following accounting policies related to revenue recognition, research and development, income taxes, and share-based compensation are the most critical for fully understanding and evaluating our financial condition and results of operations.

Basis of Presentation

Subsequent to our IPO and Reorganization Transactions, the Company is a holding company, and its principal asset is a controlling equity interest in vTv LLC, the Company's principal operating subsidiary. The Company has determined that vTv LLC is a VIE for accounting purposes and that the Company is the primary beneficiary of vTv LLC because (through its managing member interest in vTv LLC and the fact that the senior management of the Company is also the senior management of vTv LLC) it has the power to direct all of the activities of vTv LLC, which include those that most significantly impact vTv LLC's economic performance. The Company has therefore consolidated vTv LLC's results under the VIE accounting model in its consolidated financial statements.

As the Reorganization Transactions were considered to be among entities under common control, the Consolidated Financial Statements for periods prior to the IPO and Reorganization Transactions have been adjusted to combine vTvx Holdings I and vTvx Holdings II for presentation purposes.

Revenue Recognition

We use the revenue recognition guidance established by ASC Topic 605, "Revenue Recognition." We recognize revenue when there is persuasive evidence of an arrangement, the service has been provided to the customer, the collection of the fee is reasonably assured and the amount of the fee to be paid by the customer is fixed or determinable. In determining the accounting for collaboration and alliance agreements, we follow the provisions of ASC Topic 605, Subtopic 25, "Multiple Element Arrangements" ("ASC 605-25"). ASC 605-25 provides guidance on whether an arrangement that involves multiple revenue-generating activities or deliverables should be divided into separate units of accounting for revenue recognition purposes and, if division is required, how the arrangement consideration should be allocated among the separate units of accounting. If a deliverable has value on a standalone basis, we treat the deliverable as a separate unit of accounting. If the arrangement constitutes separate units of accounting according to the separation criteria of ASC 605-25, the consideration received is allocated among the separate units of accounting and the applicable revenue recognition criteria must be applied to each unit. We determine how to allocate amounts received under agreements among the separate units based on the respective selling price of each unit. If the arrangement constitutes a single unit of accounting, the revenue recognition policy must be determined for the entire arrangement and the consideration received is recognized over the period of inception through the date the last deliverable within the single unit of accounting is expected to be delivered.

Collaboration research and development revenue is earned and recognized as research is performed and related expenses are incurred. Non-refundable upfront fees are recorded as deferred revenue and recognized into revenue as license fees and milestones from collaborations on a straight-line basis over the estimated period of our substantive performance obligations. If we do not have substantive performance obligations, we recognize non-refundable upfront fees into revenue through the date the deliverable is satisfied.

Revenue for non-refundable payments based on the achievement of milestone events under collaboration agreements is recognized in accordance with ASC Topic 605, Subtopic 28, "Milestone Method" ("ASC 605-28"). Milestone events under our collaboration agreements may include research, development, regulatory, commercialization, or sales events. Under ASC 605-28, a milestone payment is recognized as revenue when the applicable event is achieved if the event meets the definition of a milestone and the milestone is determined to be substantive. ASC 605-28 defines a milestone event as an event having all of the following characteristics: (1) there is substantive uncertainty regarding achievement of the milestone event at the inception of the arrangement; (2) the event can only be achieved based, in whole or in part, on either our performance or a specific outcome resulting from our performance; and (3) if achieved, the event would result in additional payment due to us. We also treat events that can only be achieved based, in whole or in part, on either a third party's performance or a specific outcome resulting from a third party's performance as milestone events if the criteria of ASC 605-28 are otherwise satisfied.

Research and development costs that are reimbursable under collaboration agreements are recorded in accordance with ASC Topic 605, Subtopic 45, "Principal Agent Considerations." Amounts reimbursed under a cost sharing arrangement are reflected as a reduction of research and development expense.

See Note 2 "Summary of Significant Accounting Policies", to the Consolidated Financial Statements in Item 15 of Part IV of this Annual Report on Form 10-K for further information regarding the adoption of Accounting Standards Update No. 2014-09 and the related changes in the recognition of revenue that are effective beginning January 1, 2018.

Research and Development

Major components of research and development costs include cash compensation, depreciation and amortization expense on research and development property and equipment, costs of preclinical studies, clinical trials and related clinical manufacturing, costs of drug development, costs of materials and supplies, facilities cost, overhead costs, regulatory and compliance costs, and fees paid to consultants and other entities that conduct certain research and development activities on our behalf. Costs incurred in research and development are expensed as incurred.

We record accruals based on estimates of the services received, efforts expended and amounts owed pursuant to contracts with numerous contract research organizations. In the normal course of business, we contract with third parties to perform various clinical study activities in the ongoing development of potential products. The financial terms of these agreements are subject to negotiation and variation from contract to contract and may result in uneven payment flows. Payments under the contracts depend on factors such as the achievement of certain events and the completion of portions of the clinical study or similar conditions. The objective of our accrual policy is to match the recording of expenses in our financial statements to the actual services received and efforts expended. As such, expense accruals related to clinical studies are recognized based on our estimate of the degree of completion of the event or events specified in the specific clinical study.

We record nonrefundable advance payments we make for future research and development activities as prepaid expenses. Prepaid expenses are recognized as expense in the statements of operations as we receive the related goods or services.

Income Taxes

In connection with the IPO, vTv Therapeutics Inc. was formed. From August 1, 2015, vTv Therapeutics Inc. has been subject to corporate level income taxes. Prior to July 30, 2015, TTP and HPP were taxed as partnerships and all their income and deductions flowed through and were subject to tax at the partner level.

As a result of the Reorganization Transactions, vTv Therapeutics Inc. acquired vTv Units and is required to recognize deferred tax assets and liabilities for the difference between the financial reporting and tax basis of its investment in vTv LLC.

Our income tax expense, deferred tax assets and liabilities and reserves for unrecognized tax benefits reflect management's best assessment of estimated future taxes to be paid. We are subject to income taxes in both the United States and various state jurisdictions. Significant judgments and estimates are required in determining the consolidated income tax expense.

We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events included in the financial statements. Under this method, we determine

deferred tax assets and liabilities on the basis of differences between the financial statement and tax bases of assets and liabilities by using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period in which the enactment date occurs.

We recognize deferred tax assets to the extent we believe these assets are more-likely-than-not to be realized. In making such a determination, we consider all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax planning strategies and recent results of operations.

We record uncertain tax positions on the basis of a two-step process in which (1) we determine whether it is more-likely-than-not that the tax positions will be sustained on the basis of the technical merits of the position and (2) for those tax positions meeting the more-likely-than-not recognition threshold, we recognize the largest amount of tax benefit that is more than 50% likely to be realized upon ultimate settlement with the related tax authority.

Interest and penalties related to income taxes are included in the benefit (provision) for income taxes in our Consolidated Statement of Operations. We have not incurred any significant interest or penalties related to income taxes in any of the periods presented.

On December 22, 2017, the U.S. government enacted comprehensive tax reform commonly referred to as the Tax Cuts and Jobs Act ("TCJA"). Under ASC 740, the effects of changes in tax rates and laws are recognized in the period which the new legislation is enacted. Among other things, the TCJA (1) reduces the U.S. statutory corporate income tax rate from 35% to 21% effective January 1, 2018, (2) eliminates the corporate alternative minimum tax, (3) eliminates the Section 199 deduction, and (4) changes rules related to uses and limitations of net operating loss carryforwards beginning after December 31, 2017.

The SEC staff issued Staff Accounting Bulletin No. 118 ("SAB 118"), which provides guidance on accounting for the tax effects of TCJA. SAB 118 provides a measurement period that should not extend beyond one year from the TCJA enactment date for companies to complete the accounting under ASC 740. To the extent that a company's accounting for certain income tax effects of the TCJA is incomplete but is able to determine a reasonable estimate, it must record a provisional estimate in the financial statements.

The TCJA reduces the corporate tax rate to 21% effective January 1, 2018. We have recorded a provisional decrease in our deferred tax assets of $5.8 million with a corresponding adjustment to the valuation allowance for the year ended December 31, 2017. While we are able to make a reasonable estimate of the impact of the reduction in the corporate rate, it may be affected by other analyses related to the TCJA.

Share-Based Compensation

Compensation expense for share-based compensation awards issued is based on the fair value of the award at the date of grant, and compensation expense is recognized for those awards earned over the service period. The grant date fair value of stock option awards is estimated using the Black-Scholes option pricing formula. Due to the lack of sufficient historical trading information with respect to our own shares, we estimate expected volatility based on the volatility of our own stock coupled with a portfolio of selected stocks of companies believed to have market and economic characteristics similar to our own. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant. Due to a lack of historical exercise data, we estimate the expected life of our outstanding stock options using the simplified method specified under Staff Accounting Bulletin Topic 14.D.2. The fair value of restricted stock units ("RSU") grants are based on the market value of our Class A Common Stock on the date of grant. We also estimate the amount of share-based awards that are expected to be forfeited based on historical employee turnover rates.

Effect of Recent Accounting Pronouncements

See discussion of recent accounting pronouncements in Note 2, "Summary of Significant Accounting Policies", to the Consolidated Financial Statements in Item 15 of Part IV of this Annual Report on Form 10-K.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

Our Loan Agreement bears interest at a floating rate equal to 10.5% plus the amount by which the one-month London Interbank Offer Rate ("LIBOR") exceeds 0.5%. A one percent increase in the variable rate of interest on the Loan Agreement would increase interest expense by approximately $0.2 million annually based on the amounts currently outstanding. We do not currently hedge our interest rate exposure.

Market Risk

Our exposure to market risk is limited to our cash, cash equivalents and marketable securities, all of which have maturities of one year or less. The goals of our investment strategy are preservation of capital, fulfillment of liquidity needs and fiduciary control of cash and investments. We also seek to maximize income from our investments without assuming significant risk. To achieve our goals, we maintain a portfolio of cash equivalents and investments in a variety of securities that management believes to be of high credit quality. The securities in our investment portfolio are not leveraged, are classified as available for sale and are, due to their short-term nature, subject to minimal interest rate risk. Because of the short-term maturities of our investments, we do not believe that an increase in market rates would have a material negative impact on the value of our investment portfolio.

Foreign Currency Risk

We do not have any material foreign currency exposure.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The information required by this Item is included in our Financial Statements and Supplementary Data listed in Item 15 of Part IV of this Annual Report on Form 10-K.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, management has evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) or 15d-15(e) of the Securities Exchange Act of 1934) as of December 31, 2017. Based upon that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2017, our disclosure controls and procedures were effective in causing material information relating to us (including our consolidated subsidiaries) to be recorded, processed, summarized and reported by management on a timely basis and to ensure the quality and timeliness of our public disclosures with SEC disclosure obligations.

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, with the Company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple error and mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of controls.

The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, a control may become inadequate because of changes in conditions or because the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and may not be detected.

Management’s Annual Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rule 13a-15(f) under the Exchange Act. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with generally accepted accounting principles. Our internal control over financial reporting includes those written policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of assets;

- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles;
- provide reasonable assurance that receipts and expenditures are being made only in accordance with management and director authorization; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of assets that could have a material effect on the consolidated financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2017. Management based this assessment on criteria described in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, management determined that as of December 31, 2017, we maintained effective internal control over financial reporting.

Changes to Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting during our most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Website Availability of Reports and other Corporate Governance Information

The Company maintains a comprehensive corporate governance program, including Corporate Governance Guidelines for its Board of Directors, Board Guidelines for Assessing Director Independence and charters for its Audit Committee, Nominating and Corporate Governance Committee and Compensation Committee. The Company maintains a corporate website, www.vtvtherapeutics.com, where stockholders and other interested persons may review, without charge, among other things, corporate governance materials and certain SEC filings, which are generally available on the same business day as the filing date with the SEC on the SEC's website http://www.sec.gov. The contents of our website are not made a part of this Annual Report on Form 10-K.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Executive Officers

Our current executive officers are set forth below:

Name	Age	Position(s)
Jeffrey B. Kindler	62	Executive Chairman
Stephen L. Holcombe	61	President and Chief Executive Officer
Rudy C. Howard	60	Executive Vice President and Chief Financial Officer
Larry D. Altstiel, M.D., Ph.D.	68	Executive Vice President and Chief Medical Officer

Set forth below is certain additional information concerning our executive officers, including their respective positions with us and prior business experience (other than Mr. Kindler, for whom such information is provided in "Directors" below).

Stephen L. Holcombe—President and Chief Executive Officer

Stephen L. Holcombe has served as our President and Chief Executive Officer since April 2015. Mr. Holcombe was the President and Chief Financial Officer of TransTech Pharma, LLC and High Point Pharmaceuticals, LLC, our predecessors, from 2014 to March 2015, where he previously served as Senior Vice President and Chief Financial Officer from 2002 to 2014. Mr. Holcombe has over 35

years of experience in financial and managerial roles focusing on the execution of private and public financings, developing corporate alliance and partnership strategies and managing relationships with external constituents. Positions that Mr. Holcombe held prior to joining our predecessors include Executive Vice President and Chief Financial Officer of Vanguard Cellular Systems, Inc., one of the largest independent wireless operators in the United States, Executive Vice President and Chief Financial Officer of BuildNet Inc., an e-commerce software solutions provider, and various positions with KPMG Peat Marwick Mitchell. He holds a bachelor's degree in Accountancy from Wake Forest University.

Rudy C. Howard—Executive Vice President and Chief Financial Officer

Rudy C. Howard has served as our Chief Financial Officer since June 2015. Prior to joining vTv Therapeutics Inc., Mr. Howard served from January 2010 through May of 2015 as Chief Financial Officer of SciQuest, Inc., an international spend management software company. From November 2008 until joining SciQuest, Mr. Howard served as Senior Vice President and Chief Financial Officer of MDS Pharma Services, a pharmaceutical services company. From 2003 until joining MDS Pharma Services, Mr. Howard operated his own financial consulting company, Rudy C. Howard, CPA Consulting, in Wilmington, North Carolina, where his services included advising on merger and acquisition transactions, equity and debt issuances and other general management matters. From 2001 through 2003, Mr. Howard served as Chief Financial Officer for Peopleclick, Inc., an international human capital management software company. From 2000 until joining Peopleclick, Mr. Howard served as Chief Financial Officer for Marketing Services Group, Inc., a marketing and internet technology company. From 1995 until 2000, Mr. Howard served as Chief Financial Officer for PPD, Inc., a clinical research organization. Prior to joining PPD, Mr. Howard was a partner with PricewaterhouseCoopers. Mr. Howard holds a B.A. in Accounting from North Carolina State University, and he is a Certified Public Accountant.

Larry D. Altstiel—Executive Vice President and Chief Medical Officer

Larry D. Altstiel has served as our Chief Medical Officer since December 2015. Prior to joining vTv Therapeutics Inc., Dr. Altstiel was the founder and served as the Chief Executive Officer of Provectra Biotherapeutics, an early-stage biotechnology company, from 2013 through 2015. From 2007 to 2013, Dr. Altstiel was Vice President Neuroscience Clinical Development, Neuroscience Therapeutic Area Clinical Lead, at Pfizer Inc., a global pharmaceutical company. Dr. Altstiel's other positions included Senior Vice President, Head of Global Clinical Development, at Schwarz Biosciences, Inc., a scientific research company; Vice President for Research Operations at Eisai Medical Research Inc., a physical and biological research and development company and Schering-Plough, a global pharmaceutical company; and Senior Clinical Research Physician and Group Leader for Neurodegenerative Diseases Clinical and Discovery Research for Alzheimer's Disease, Parkinson's Disease and Stroke at Eli Lilly and Company, a global pharmaceutical company. Dr. Altstiel received his bachelor's degree in chemistry from the University of Illinois, a Ph.D in Virology, Cell Biology, and Physical Chemistry from the Rockefeller University and his M.D. from the University of Miami Miller School of Medicine. Dr. Altstiel was a NIH Postdoctoral Fellow at The Biological Laboratories, Harvard University and trained in Internal Medicine at The Harlem Hospital and in Neurology at the Neurological Institute, Columbia.

Directors

The current members of our Board of Directors are set forth below:

Name	Age	Position(s) with vTv Therapeutics Inc.	Director Since
Jeffrey B. Kindler	62	Executive Chairman of the Company and our Board of Directors	July 2015
Steven M. Cohen	54	Director	July 2015
John A. Fry	57	Director	March 2016
Paul M. Meister	65	Director	July 2015
Craig C. Parker	56	Director	July 2015
Paul G. Savas	55	Director	April 2015
Noel J. Spiegel	70	Director	July 2015
Howard L. Weiner	73	Director	July 2017

Jeffrey B. Kindler—Executive Chairman of the Company and our Board of Directors

Jeffrey B. Kindler has served as the Executive Chairman of our Board of Directors since July 2015 and as our Executive Chairman since April 2015. Mr. Kindler has served as Chief Executive Officer of Centrexion Corporation since 2014; as a Venture Partner at Lux Capital since 2012; and as a Managing Director at Starboard Capital Partners, since 2010. From 2006 to 2010, Mr. Kindler was the Chairman and Chief Executive Officer of Pfizer Inc. Prior to his appointment as Pfizer's CEO, Mr. Kindler served as Pfizer's Executive Vice President and General Counsel as well as a Vice Chairman of the company. Prior to joining Pfizer in 2002, he was Chairman of Boston Market Corporation from 2000 to 2001 and President of the Partner Brands group of McDonald's Corporation during 2001. Mr. Kindler previously served on the Board of Directors of Chipotle Mexican Grill, Inc., a chain of fast casual restaurants, from 2012 to 2014. He currently serves on the boards of directors of SIGA Technologies, Inc., a developer of novel antiviral therapeutics, Perrigo Company plc, a leading global over-the-counter consumer goods and specialty pharmaceutical company, and Intrexon Corporation, a synthetic biology company, as well as a number of privately held companies. Mr. Kindler is also a trustee of Tufts University. Mr. Kindler also provides consulting services to MacAndrews & Forbes Incorporated ("MacAndrews") on matters involving the life sciences industry. Mr. Kindler holds a bachelor's degree from Tufts University and a J.D. from Harvard Law School. We believe Mr. Kindler's experience as Chief Executive Officer of Centrexion Corporation, in addition to his years of experience in the healthcare industry, qualifies him to serve on our Board of Directors.

Steven M. Cohen—Director

Steven M. Cohen was appointed to our Board of Directors in July 2015. Mr. Cohen has served as Executive Vice President, General Counsel and Chief Administrative Officer of MacAndrews since 2013. In 2011, he was Secretary to New York State Governor Andrew M. Cuomo during the first year of Governor Cuomo's administration. Prior to that, Mr. Cohen served as Chief of Staff and Counselor to then-New York Attorney General Cuomo, holding both positions for the entire four years of Mr. Cuomo's tenure as Attorney General. Mr. Cohen has more than 25 years of experience as a lawyer in private practice and public service. He is a Trustee of New York University ("NYU"), a member of the board of Bank Leumi USA, and Chairman of the Board of the Brooklyn Bridge Park Development Corporation. He holds a bachelor's degree from New York University and a J.D. from the University of Pennsylvania Law School. Mr. Cohen brings extensive experience in leadership, corporate strategy and public service. For these reasons, we believe he is well qualified to serve on our Board of Directors.

John A. Fry—Director

John A. Fry was appointed to our Board of Directors in March 2016. Mr. Fry has served as President of Drexel University since 2010. From 2002 to 2010, Mr. Fry served as the President of Franklin & Marshall College and from 1995 to 2002, he served as Executive Vice President of the University of Pennsylvania. Prior to joining the University of Pennsylvania, Mr. Fry was a management consultant for the higher education and nonprofit sectors. He worked closely with some of the nation's premier colleges and universities, first with KPMG Peat Marwick and then with Coopers & Lybrand's National Higher Education Consulting Practice where he was elected a partner in the firm and eventually became partner-in-charge of the national practice. Mr. Fry is a member of the Board of Directors of Community Health Systems, a leading operator of general acute care hospitals, Drexel Morgan, a registered investment advisor and bank holding company, and Macquarie Investment Management (formerly Delaware Investments), a U.S. based asset management firm. Mr. Fry holds a bachelor's degree from Lafayette College and a master's degree in business administration from the New York University Stern School of Business. Mr. Fry brings extensive experience in leadership and corporate governance. For these reasons, we believe he is well qualified to serve on our Board of Directors.

Paul M. Meister—Director

Paul M. Meister was appointed to our Board of Directors in July 2015. Mr. Meister has served as President of MacAndrews since 2014. Mr. Meister is currently serving as Executive Vice Chairman of the Board of Revlon, Inc., overseeing day-to-day operations of the company on an interim basis. He is also Co-Founder, and since 2008, Chief Executive Officer, of Liberty Lane Partners, a private investment company with investments in healthcare, technology and distribution-related industries, and Co-Founder and, since 2007, Vice Chair, at Perspecta Trust, a trust company that provides trust and investment services. From 2010 to 2014, Mr. Meister served as Chairman, and from 2011 to 2014 also as Chief Executive Officer, of inVentiv Health, a leading provider of commercial, consulting and clinical research services to the pharmaceutical and biotech industries. Until 2007, he was Chairman of the Board of Thermo Fisher Scientific Inc., a provider of products and services to businesses and institutions in the field of science, which was formed by the merger of Fisher Scientific International Inc. and Thermo Electron Corporation in November 2006. Mr. Meister was Vice Chairman of Fisher Scientific International, Inc. from 2001 to 2006 and served as its Chief Financial Officer from 1991 to 2001. Mr. Meister is a member of the Board of Directors of LKQ Corporation, Inc., a leading distributor of vehicle products, Scientific Games Corporation, which provides customized, end-to-end solutions to the gaming industry, Quanterix Corporation, a developer of ground-breaking tools in high definition diagnostics, and Revlon, Inc. During the past five years, he has also served as a member of the Board of Directors of M & F

Worldwide Corp., a holding company that holds various businesses that is controlled by affiliates of MacAndrews. Mr. Meister is a member of the University of Michigan's Life Sciences Institute Scientific Advisory Board. He holds a bachelor's degree from the University of Michigan and an M.B.A. from Northwestern University. Mr. Meister has held several executive positions in prominent firms and provides our Board of Directors extensive leadership, management and board experience in the healthcare industry. For these reasons, we believe he is well qualified to serve on our Board of Directors.

Craig C. Parker—Director

Craig C. Parker was appointed to our Board of Directors in July 2015. Mr. Parker has served as Senior Vice President and Head of Corporate Development at Jazz Pharmaceuticals PLC, an international biopharmaceutical company, since 2014. Previously, Mr. Parker was Executive Vice President, Corporate Development and Scientific Affairs, at Geron Corporation, a clinical stage biopharmaceutical company, from 2012 to 2014. From 2011 to 2012, he served as Senior Vice President, Strategy and Corporate Development, at Human Genome Sciences, Inc., a biopharmaceutical company, until its sale to GlaxoSmithKline. Mr. Parker was Co-Founder, and from 2009 to 2011, Chief Executive Officer, of Vega Therapeutics, Inc., a drug discovery stage biotechnology start-up in the emerging field of inflammation, insulin resistance and energy balance. Mr. Parker currently serves on the Scientific Advisory Board of the University of Michigan's Life Sciences Institute. He holds a bachelor's degree from the University of Chicago, an M.B.A from the University of Michigan, and attended the Georgetown University School of Medicine. Mr. Parker has more than ten years of experience as an executive in the biotechnology industry, including serving as an executive officer at two public companies, Chief Financial Officer of Proteolix, Inc., a private biotechnology company, and business unit head of a division of Immunex Corporation, a large biotechnology company. He provides extensive experience in biotechnology industry strategy, finance and accounting, clinical development and business development. For these reasons, we believe he is well qualified to serve on our Board of Directors.

Paul G. Savas—Director

Paul G. Savas has served on our Board of Directors since April 2015. Mr. Savas is Executive Vice President and Chief Financial Officer at MacAndrews. He joined MacAndrews in 1994 as Director of Corporate Finance, served in various positions of increasing responsibility and became Chief Financial Officer in 2007. He also serves as a director of Harland Clarke Holding Corp., SIGA Technologies, Inc., and Revlon, Inc., and served as a member of the Board of Directors of vTvx Holdings I LLC and vTvx Holdings II LLC, our predecessors, from 2007 through 2015. He holds a bachelor's degree in Accounting from Rutgers University and an M.B.A. from Fordham University. Mr. Savas provides our Board of Directors valuable business, leadership and management insights with respect to our strategic, operational and financial direction. For these reasons, we believe he is well qualified to serve on our Board of Directors.

Noel J. Spiegel—Director

Noel J. Spiegel was appointed to our Board of Directors in July 2015. Mr. Spiegel was a partner at Deloitte & Touche, LLP, a global professional services firm, where he practiced from September 1969 until his retirement in May 2010. In his over 40 year career at Deloitte, he served in numerous management positions, including as Deputy Managing Partner, member of the Executive Committee, Managing Partner of Deloitte's Transaction Assurance practice, Global Offerings and IFRS practice and Technology, Media and Telecommunications practice (Northeast Region), and as Partner-in-Charge of Audit Operations in Deloitte's New York office. Mr. Spiegel also serves on the Board of Directors of American Eagle Outfitters, Inc., a leading apparel and accessories retailer and Radian Group, Inc., a leading mortgage insurance company. He holds a bachelor's degree from Long Island University and attended the Advanced Management Program at Harvard Business School. Mr. Spiegel provides expertise in public accounting, disclosure and financial system management to our Board of Directors and our Audit Committee. For these reasons, we believe he is well qualified to serve on our Board of Directors.

Howard L. Weiner—Director

Howard L. Weiner was appointed to our Board of Directors in July 2017. Dr. Weiner, the Robert L. Kroc Professor of Neurology at the Harvard Medical School since 1997 and Co-Director of the Center for Neurologic Diseases at the Brigham & Women's Hospital since 1985, pioneered the use of immunotherapy for the treatment of multiple sclerosis and has investigated immune abnormalities in the disease. He also pioneered the use of the mucosal immune system for the treatment of autoimmune and other diseases, including Alzheimer's disease and Lou Gehrig's disease. Based on his work, vaccines are being tested in multiple sclerosis, diabetes, and most recently in Alzheimer's disease. Dr. Weiner attended Dartmouth College, and received his M.D. from the University of Colorado School of Medicine. Dr. Weiner provides significant medical expertise and clinical experience to our Board of Directors. For these reasons, we believe he is well qualified to serve on our Board of Directors.

Corporate Governance Matters

Information about the Board

Our Board of Directors consists of Messrs. Kindler, Cohen, Fry, Meister, Parker, Savas, Spiegel and Weiner. In accordance with our amended and restated certificate of incorporation and our amended and restated bylaws, a majority of our Board of Directors may fix the number of directors, which is currently set at eight. Each director is to hold office until his or her successor is duly elected and qualified or until his or her earlier death, resignation, disqualification or removal. At any meeting of our Board of Directors, the presence in person of a majority of the total number of directors then in office will constitute a quorum for all purposes. Pursuant to the Investor Rights Agreement, M&F currently has the right to designate as nominees five directors. The MacAndrews Nominees are Messrs. Kindler, Cohen, Meister, Savas, and Weiner.

We separate the position of Executive Chairman of our Board of Directors, currently Mr. Kindler, and that of Chief Executive Officer, currently Stephen L. Holcombe. While our Board of Directors currently believes the separation of these positions serves the aims of our company, our Board of Directors does not believe that it is appropriate to prohibit one person from serving as both Chairman of the Board of Directors and Chief Executive Officer. We believe our leadership structure is appropriate given its balance and separation of powers, the industry and board experience of Mr. Kindler, and the historical experience and understanding of our Company of Mr. Holcombe.

Committees of our Board of Directors

In July 2015, our Board of Directors adopted written charters for each of its permanent committees, all of which are available in the Investors—Corporate Governance—Documents & Charters section of our website at www.vtvtherapeutics.com. Pursuant to the Investor Rights Agreement, so long as MacAndrews beneficially owns 25% or more of our outstanding common stock, MacAndrews has the right, subject to applicable corporate governance rules of the SEC and the NASDAQ Stock Market listing rules, to designate the members of the committees of the Board of Directors.

Audit Committee

Our Audit Committee consists of Messrs. Noel J. Spiegel (Chair), John A. Fry, and Craig C. Parker. The Board of Directors has determined that Mr. Spiegel qualifies as an “audit committee financial expert” as such term is defined in Item 407(d)(5) of Regulation S-K. Our Board of Directors has determined that Messrs. Fry, Parker and Spiegel are independent within the meaning of the NASDAQ Stock Market listing rules and meet the additional test for independence for Audit Committee members imposed by SEC regulation and the NASDAQ Stock Market listing rules. As of the date of this Annual Report, our Audit Committee is fully independent and is in compliance with the applicable SEC and NASDAQ rules and regulations.

Our Audit Committee met five times during our 2017 fiscal year. Our Audit Committee assists the Board of Directors in monitoring the audit of our financial statements, our independent registered public accounting firm’s qualifications and independence, the performance of our independent auditors and our compliance with legal and regulatory requirements. The Audit Committee has direct responsibility for the appointment, compensation, retention (including termination) and oversight of our independent auditors, and our independent auditors report directly to the Audit Committee. The Audit Committee also reviews and approves related party transactions as required by the applicable NASDAQ rules.

Compensation Committee

Our Compensation Committee consists of Messrs. Paul G. Savas (Chair), Steven M. Cohen and Paul M. Meister. Because we are a controlled company under the NASDAQ Stock Market listing rules, our Compensation Committee is not required to be fully independent. Our Compensation Committee took action by written consent once during our 2017 fiscal year. Our Compensation Committee is responsible for reviewing and recommending policies relating to the compensation and benefits of our directors and employees, including our Chief Executive Officer and other executive officers.

The Compensation Committee has the sole authority to retain and terminate any compensation consultant to assist in the evaluation of employee compensation and to approve the consultant’s fees and the other terms and conditions of the consultant’s retention. The Compensation Committee may form and delegate authority to subcommittees where appropriate, provided that the subcommittees are composed entirely of directors who satisfy the applicable independence requirement of our Corporate Governance Guidelines and the NASDAQ Stock Market listing rules, subject to any applicable controlled company or other exemption.

In accordance with the Compensation Committee’s charter, our President and Chief Executive Officer may not be present during voting or deliberations of the Committee regarding his or her compensation.

Nominating and Corporate Governance Committee

Our Nominating and Corporate Governance Committee consists of Messrs. Steven M. Cohen (Chair), Jeffrey B. Kindler and Craig C. Parker. Because we are a controlled company under the NASDAQ Stock Market listing rules, our Nominating and Corporate Governance Committee is not required to be fully independent. Our Nominating and Corporate Governance Committee took action by written consent twice during our 2017 fiscal year. Our Nominating and Corporate Governance Committee is responsible for selecting or recommending that the Board of Directors select candidates for election to our Board of Directors, developing and recommending to the Board of Directors corporate governance guidelines that are applicable to us and overseeing Board of Director and management evaluations.

Risk Oversight

Our Board of Directors has an oversight role, as a whole and also at the committee level, in overseeing management of our risks. Our Board of Directors regularly reviews information regarding our credit, liquidity and operations, as well as the risks associated with each. The Compensation Committee is responsible for overseeing the management of risks relating to its employee compensation plans and arrangements, and the Audit Committee oversees the management of financial risks. While each committee is responsible for evaluating certain risks and overseeing the management of such risks, the entire Board of Directors is regularly informed through committee reports about such risks.

Family Relationships

There is no family relationship between any director, executive officer or person nominated to become our director or executive officer.

Code of Conduct and Ethics

Our Board of Directors has adopted a Code of Conduct and Ethics that applies to all of our directors, officers and employees and is intended to comply with the relevant listing requirements for a code of conduct as well as qualify as a "code of ethics" as defined by the rules of the SEC. The Code of Conduct and Ethics contains general guidelines for conducting our business consistent with the highest standards of business ethics. We intend to disclose any future amendments to certain provisions of our Code of Conduct and Ethics, or waivers of such provisions applicable to any principal executive officer, principal financial officer, principal accounting officer and controller, or persons performing similar functions, and our directors, on our website at *www.vtvtherapeutics.com*. The Code of Conduct and Ethics is available on our website under *Documents & Charters* in the *Investors—Corporate Governance* section of our website at *www.vtvtherapeutics.com*.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires our executive officers, directors, and persons who beneficially own more than 10% of a registered class of our common stock or other equity securities to file with the SEC certain reports of ownership and reports of changes in ownership of our securities. Executive officers, directors and stockholders who hold more than 10% of our outstanding common stock are required by the SEC to furnish us with copies of all required forms filed under Section 16(a). Based solely on a review of this information and written representations from these persons that no other reports were required, we believe that, during the prior fiscal year, all of our executive officers, directors, and to our knowledge, 10% stockholders complied with the filing requirements of Section 16(a) of the Exchange Act.

Changes to Stockholder Board Nomination Process

None.

ITEM 11. EXECUTIVE COMPENSATION

Executive Compensation

Summary Compensation Table

The following summary compensation table sets forth information regarding the compensation paid, awarded to or earned by our President and Chief Executive Officer and our two other most highly compensated executive officers ("Named Executive Officers") for the fiscal years ended December 31, 2017 and 2016, for services rendered in all capacities during the fiscal year presented.

Name and Principal Position	Year	Salary ($)	Non-Equity Incentive Plan Compensation ($) (1)	Option Awards ($) (2)	All Other Compensation ($)		Total ($) (3)
Stephen L. Holcombe	2017	450,000	95,625	691,516	8,721	(4)	1,245,862
President and Chief Executive Officer	2016	450,000	225,000	—	7,146	(4)	682,146
Rudy C. Howard	2017	325,000	55,250	440,056	31,475	(5)	851,781
Executive Vice President, Chief Financial Officer	2016	325,000	130,000	—	29,550	(6)	484,550
Dr. Larry D. Altstiel	2017	400,000	34,000	536,447	22,381	(7)	992,828
Executive Vice President, Chief Medical Officer	2016	400,000	160,000	—	22,200	(7)	582,200

(1) Bonus amounts included above represent amounts earned in 2017 and 2016 and paid in the following year pursuant to our annual incentive bonus plan. For 2017, the compensation committee awarded bonuses to Mr. Holcombe, Mr. Howard, and Dr. Altstiel of $95,625, $55,250, and $34,000, respectively. In addition, the compensation committee determined that an additional bonus with respect to 2017 will be paid to Mr. Holcombe, Mr. Howard, and Dr. Altstiel of $95,625, $55,250, and $34,000, respectively, subject to (x) the completion of a satisfactory future financing event as determined by the compensation committee and (y) the executive's continued employment with the Company on the date of such financing event.

(2) The reported amounts represent the aggregate grant date fair value of the awards computed in accordance with FASB ASC Topic 718. Assumptions used in the calculation of these amounts are included in Note 4 of the consolidated financial statements included in this Annual Report on Form 10-K.

(3) In accordance with required SEC disclosure rules, the fiscal year compensation shown in the Summary Compensation Table above does not include the grant date fair values of awards of stock options made in 2018 in respect of fiscal 2017 performance since such equity awards will be shown in the Summary Compensation table for fiscal year 2018 (the year in which these equity awards were granted).

(4) Amounts represent a match to the 401(k) plan.

(5) Amount represents a housing allowance, match to the 401(k) plan and a health savings account contribution.

(6) Amounts represent a housing allowance and match to the 401(k) plan.

(7) Amount represents a housing allowance.

Employment and Services Agreements

We have entered into employment agreements with our President and Chief Executive Officer, our Chief Financial Officer, and our Chief Medical Officer. The employment agreements set forth the annual base salary, target bonus percentage, target equity grants, terms of severance and eligibility for employee benefits.

Employment Agreement with our President and Chief Executive Officer. In 2015, we entered into an employment agreement with Stephen L. Holcombe, our President and Chief Executive Officer, which provides for a term through December 31, 2018, a base salary of not less than $450,000, and a target cash bonus of 50% of base salary, based on achievement of performance targets. In connection with our IPO, we issued to our President and Chief Executive Officer an option to purchase up to 180,469 shares of our Class A common stock, at an exercise price of $15.00 per share, which option vests in three equal annual installments beginning on July 29, 2016. Our President and Chief Executive Officer is also eligible to receive an annual performance bonus in respect of each completed fiscal year with a target value of $825,000 (payable in stock options, restricted stock or restricted stock units or, at our election, in cash). The actual payout may be higher or lower based on actual performance. The employment agreement does not specify the performance metrics and goals for the annual target cash and equity awards, which metrics and goals will be established by our Compensation Committee at the beginning of each applicable fiscal year. Such equity or cash awards will generally vest in three equal installments of 33.33% on each anniversary of the date of grant, subject to acceleration of vesting upon certain qualifying terminations on or within the 12 month period following a change-in-control.

Employment Agreement with our Chief Financial Officer. In 2015, we entered into an employment agreement with Rudy C. Howard, our Chief Financial Officer, which provides for a term through December 31, 2018, a base salary of not less than $325,000, and a target cash bonus of 40% of base salary, based on achievement of performance targets. In connection with our IPO, we issued to our Chief Financial Officer an option to purchase up to 114,844 shares of our Class A common stock, at an exercise price of $15.00 per share, which option vests in three equal annual installments beginning on July 29, 2016. Our Chief Financial Officer is also eligible to receive an annual performance bonus in respect of each completed fiscal year with a target value of $450,000 (payable in stock options, restricted stock or restricted stock units or, at our election, in cash). The actual payout may be higher or lower based on actual performance. The employment agreement does not specify the performance metrics and goals for the annual target cash and equity awards, which metrics and goals will be established by the Compensation Committee at the beginning of each applicable fiscal year. Such equity or cash award will generally vest in three equal installments of 33.33% on each anniversary of the date of grant, subject to acceleration of vesting upon certain qualifying terminations on or within the 12 month period following a change-in-control.

Employment Agreement with our Chief Medical Officer. In 2015, we entered into an employment agreement with Dr. Larry D. Altstiel, our Chief Medical Officer, which provides for a term through December 31, 2018, a base salary of not less than $400,000, and a target cash bonus of 40% of base salary, based on achievement of performance targets. In connection with his hire, we issued to our Chief Medical Officer an option to purchase up to 140,000 shares of our Class A common stock, at an exercise price of $6.47 per share, which option vests in three equal annual installments beginning on December 16, 2016. Our Chief Medical Officer is also eligible to receive an annual performance bonus in respect of each completed fiscal year with a target value of $500,000 (payable in stock options, restricted stock or restricted stock units or, at our election, in cash). The actual payout may be higher or lower based on actual performance. The employment agreement does not specify the performance metrics and goals for the annual target cash and equity awards, which metrics and goals will be established by the Compensation Committee at the beginning of each applicable fiscal year. Such equity or cash award will generally vest in three equal installments of 33.33% on each anniversary of the date of grant, subject to acceleration of vesting upon certain qualifying terminations on or within the 12 month period following a change-in-control.

Our President and Chief Executive Officer, our Chief Financial Officer and our Chief Medical Officer (each, an “Executive”) will be eligible for other standard employee benefits. If the Executive’s employment is terminated by us without cause or he resigns for “good reason,” then subject to the execution of a release of claims, the Executive shall receive as severance pay:

- 12 months base salary payable in installments;
- continuation COBRA coverage for 12 months with the costs of the premiums shared in the same proportion as before the termination on the date of termination (unless this would result in penalty taxes imposed on us);
- a pro-rata cash bonus for the year of termination based on actual results for the entire year, payable at the time bonuses are paid to active employees (but if such termination is on or within the 12-month period following a change-in-control, then in lieu of the pro rata cash bonus, the Executive shall receive his target cash bonus which shall not be prorated); and
- payment of the cash bonus for the year prior to the year of termination to the extent earned but not yet paid.

In addition, the Executive will be entitled to all accrued benefits. Treatment of the Executive’s outstanding equity awards will be governed by the terms of the underlying award agreements, but if the Executive’s employment is terminated by us without cause or upon resignation by the Executive with good reason, in each case on or within 12 months following a change-in-control, then the Executive’s outstanding equity awards shall vest in full.

The employment agreements contain other customary terms and conditions, including a two-year post-employment noncompete, a three-year post-employment non-solicit and other nondisclosure of confidential information, intellectual property and nondisparagement provisions.

Prior to December 31, 2018, the Company and each Executive will discuss whether the term of employment should be extended. If the Company does not renew the term and terminates the Executive's employment other than for cause, death or disability, then the post-employment noncompetition period shall be reduced from two years to one year and in lieu of the severance listed above, the Executive will receive the greater of (i) six months of base salary in continuing installments and six months of COBRA continuation coverage with the same cost sharing as noted above or (ii) severance and benefits in accordance with Company policy as in effect at the time of termination. If the Company is willing to extend the term of employment and the Executive does not agree, then the executive will not be eligible for severance and the post-employment noncompete period shall not be reduced. We anticipate extending the term of employment for each Executive.

Outstanding Equity Awards as of December 31, 2017

The following table lists the outstanding equity awards held by our named executive officers as of December 31, 2017:

Name and Position	Vesting Commencement Date	Number of Securities Underlying Unexercised Options Exercisable	Number of Securities Underlying Unexercised Options Unexercisable (1)	Option Exercise Price	Option Expiration Date
Stephen L. Holcombe	7/29/2015	120,313	60,156	$ 15.00	7/29/2025
President and Chief Executive Officer	3/10/2017	—	165,110	$ 5.81	3/10/2027
Rudy C. Howard	7/29/2015	76,563	38,281	$ 15.00	7/29/2025
Executive Vice President, Chief Financial Officer	3/10/2017	—	105,070	$ 5.81	3/10/2027
Dr. Larry D. Altstiel	12/16/2015	93,333	46,667	$ 6.47	12/16/2015
Chief Medical Officer	3/10/2017		128,085	$ 5.81	3/10/2027

(1) The awards of stock options to each of Messrs. Holcombe and Howard and Dr. Altstiel listed in the above table each vest in three equal installments upon the anniversary of their grant date. In each case, this vesting schedule assumes continued employment or services with us and is subject to accelerated vesting upon the occurrence of certain qualifying termination of employment or services, as applicable.

Director Compensation

Executive Chairman Services Agreement. The services agreement with our Executive Chairman, Jeffrey B. Kindler, address his services and compensation only in his capacity as Executive Chairman of our Board of Directors. The services agreement provides for a base fee of not less than $250,000. In connection with our IPO, we issued to our Executive Chairman an option to purchase up to 28,121 shares of our Class A common stock, at an exercise price of $15.00 per share, which option vests in three equal annual installments beginning on July 29, 2016 (the "Executive Chairman IPO Grant"). Our Executive Chairman is also eligible to receive an annual performance bonus in respect of each completed fiscal year with a target value of $250,000 (payable in stock options, restricted stock or restricted stock units or, at our election, in cash). The actual payout may be higher or lower based on actual performance. The services agreement does not specify the performance metrics and goals for the annual target cash and equity awards, which metrics and goals will be established by the Compensation Committee at the beginning of each applicable fiscal year. Such equity or cash awards will generally vest in three equal installments of 33.33% on each anniversary of the date of grant, subject to continued employment on the applicable vesting date (provided that upon certain qualifying terminations, such awards (including the Executive Chairman IPO Grant) shall vest in full). The services agreement contains a customary one-year post termination non-compete and non-solicit and other customary terms.

Though the services agreement with our Executive Chairman does not provide for severance, it does provide for full acceleration of vesting of outstanding equity awards upon certain qualifying terminations of services.

In 2016, our Board of Directors established the following compensation program for our non-employee directors, other than Messrs. Cohen, Meister and Savas and no changes were made in 2017:

- upon election and/or re-election at each annual meeting of stockholders, an award of 15,000 options to acquire our Class A common stock (or the equivalent value thereof in restricted stock, restricted stock units or cash). The options or other equity

or equity-based compensation will generally vest in monthly installments over the three year period commencing with the grant date;

- an annual cash retainer of $35,000, with no additional fees paid for board and committee meetings attended;
- an annual cash retainer of $15,000 for the chair of the Audit Committee, $10,000 for the chair of the Compensation Committee and $7,500 for the chair of the Nominating and Corporate Governance Committee; and
- an annual cash retainer of $7,500 for members of the Audit Committee, $5,000 for members of the Compensation Committee and $3,750 for members of the Nominating and Corporate Governance Committee.

In addition, all directors will be reimbursed for out-of-pocket expenses incurred in connection with their services.

The following table sets forth the total compensation paid to each of our directors for the fiscal year ended December 31, 2017.

Name	Fees Earned or Paid in Cash ($)	Stock Awards (1) ($)	Option Awards (1) ($)	Total ($)
Steven M. Cohen	—	—	—	—
John A. Fry	42,500	—	56,923 (2)	99,423
Jeffrey B. Kindler	250,000	203,350 (3)	—	453,350
Paul M. Meister	—	—	—	—
Craig C. Parker	46,250	—	56,923 (2)	103,173
Paul G. Savas	—	—	—	—
Noel J. Spiegel	50,000	—	56,923 (2)	106,923
Howard L. Weiner	17,500	—	—	17,500

(1) The amounts reported in the table above represents the aggregate grant date fair value of the award, computed in accordance with FASB ASC Topic 718. Assumptions used in the calculation of these amounts are included in Note 4 of the consolidated financial statements included in this Annual Report on Form 10-K.

(2) On May 1, 2017, upon their re-election at our 2017 Annual Meeting, Messrs. Fry, Parker and Spiegel were each awarded an option to purchase up to 15,000 shares of our Class A common stock with an exercise price of $5.31 per share, which award is scheduled to vest in 36 equal monthly installments beginning on May 1, 2017, subject to the continued service of Messrs. Fry, Parker and Spiegel on our Board of Directors, as applicable.

(3) In accordance with required SEC disclosure rules, the fiscal year compensation shows in the Summary Compensation Table above does not include the grant date fair values of awards of restricted stock units made in 2018 in respect of fiscal 2017 performance since such equity awards will be shown in the Summary Compensation table for fiscal year 2018 (the year in which these equity awards were granted). Mr. Kindler was granted 35,000 restricted stock units on March 10, 2017 and such restricted stock units will generally vest in three equal installments of 33.33% on each anniversary of March 10, 2017.

The outstanding option awards for our non-employee directors as of December 31, 2017 are as follows:

Name	Grant Date	Number of Securities Underlying Unexercised Options Exercisable	Number of Securities Underlying Unexercised Options Unexercisable	Grant Date Fair Value ($)
John A. Fry	5/12/2016	9,301	8,199	64,303
	5/1/2017	2,917	12,083	56,923
Jeffrey B. Kindler	7/29/2015	18,747	9,374	300,256
Craig C. Parker	7/29/2015	20,139	4,861	263,647
	5/12/2016	7,917	7,083	55,136
	5/1/2017	2,917	12,083	56,923
Noel J. Spiegel	7/29/2015	20,139	4,861	263,647
	5/12/2016	7,917	7,083	55,136
	5/1/2017	2,917	12,083	56,923

Compensation Committee Interlocks and Insider Participation

Our Compensation Committee consists of Messrs. Savas (Chair), Cohen and Meister. None of our executive officers serves as a member of the Board of Directors or Compensation Committee (or other committee performing equivalent functions) of another entity that has one or more executive officers serving on our Board of Directors or Compensation Committee. No interlocking relationship exists between any member of the Board of Directors or any member of the Compensation Committee (or other committee performing equivalent functions) of any other company.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Security Ownership of Certain Beneficial Owners and Management

The following table sets forth certain information regarding the beneficial ownership of our Class A Common Stock as of February 23, 2018 unless otherwise noted below for the following:

- each person, or group of affiliated persons, who we know to beneficially own more than 5% of our Class A Common Stock;
- each of our named executive officers;
- each of our directors; and
- all of our executive officers and directors as a group.

The number of shares of Class A Common Stock outstanding and the percentage of beneficial ownership are based on the number of shares of Class B Common Stock and nonvoting common units of vTv Therapeutics LLC ("vTv Units") outstanding and after giving effect to the exchange of all outstanding shares of Class B Common Stock (together with the corresponding vTv Units) into shares of Class A Common Stock. Pursuant to the Exchange Agreement, vTv Units may, subject to the terms of the Exchange Agreement and the vTv Therapeutics LLC Amended and Restated Limited Liability Company Agreement, be exchanged at any time (along with a corresponding number of shares of our Class B Common Stock) with vTv Therapeutics LLC for shares of our Class A Common Stock on a one-for-one basis, or for cash, at our option (as the managing member of vTv Therapeutics LLC). See "Certain Relationships and Related Party Transactions—Exchange Agreement."

Beneficial ownership is determined in accordance with the rules of the SEC. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting power or investment power with respect to such securities. Except as otherwise indicated, all persons listed below have sole voting and investment power with respect to the shares beneficially owned by them, subject to applicable community property laws. Common stock subject to options exercisable on or within 60 days after February 23, 2018 are deemed outstanding for the purpose of computing the percentage ownership of the person holding those options, but are not deemed outstanding for computing the percentage ownership of any other person. Unless otherwise indicated, the address for each listed stockholder is c/o vTv Therapeutics Inc., 4170 Mendenhall Oaks Parkway, High Point, North Carolina 27265.

Name and Address of Beneficial Owner	Shares Beneficially Owned	Percentage Beneficially Owned
Jeffrey B. Kindler (1)	30,414	*
Stephen L. Holcombe (2)	175,350	0.5%
Rudy C. Howard (3)	116,586	0.4%
Steven M. Cohen (4)	5,000	*
John A. Fry (5)	15,813	*
Paul M. Meister (4)	—	—
Craig C. Parker (6)	36,388	0.1%
Paul G. Savas (4)	86,781	0.3%
Noel J. Spiegel (7)	42,388	0.1%
Howard L. Weiner	—	—
Dr. Larry D. Altstiel (8)	136,028	0.4%
All directors and executive officers as a group (11 individuals)	644,748	2.0%
5% or Greater Stockholders:		
Ronald O. Perelman (4)(9)	28,181,305	79.8%
Franklin Resources, Inc. (10)	850,100	2.6%

* Less than 0.1%.

(1) Includes options and restricted stock units to purchase up to 30,414 shares of our Class A Common Stock that are vested and exercisable or will become vested and exercisable within 60 days of February 23, 2018.

(2) Includes options to purchase up to 175,350 shares of our Class A Common Stock that are vested and exercisable or will become vested and exercisable within 60 days of February 23, 2018.

(3) Includes options to purchase up to 111,586 shares of our Class A Common Stock that are vested and exercisable or will become vested and exercisable within 60 days of February 23, 2018.

(4) Address is c/o MacAndrews & Forbes Incorporated, 35 East 62nd Street, New York, NY 10065.

(5) Includes options to purchase up to 15,813 shares of our Class A Common Stock that are vested and exercisable or will become vested and exercisable within 60 days of February 23, 2018.

(6) Includes options to purchase up to 36,388 shares of our Class A Common Stock that are vested and exercisable or will become vested and exercisable within 60 days of February 23, 2018.

(7) Includes options to purchase up to 36,388 shares of our Class A Common Stock that are vested and exercisable or will become vested and exercisable within 60 days of February 23, 2018.

(8) Includes options to purchase up to 136,028 shares of our Class A Common Stock that are vested and exercisable or will become vested and exercisable within 60 days of February 23, 2018.

(9) Based solely on the Schedule 13D/A (Amendment No. 5) filed by MacAndrews & Forbes Incorporated with the SEC on December 7, 2017 and Form 4s filed by Ronald O. Perelman with the SEC on December 27, 2017. Consists of: (a) 215,000 shares of our Class A Common Stock held beneficially by MacAndrews & Forbes Group LLC ("M&F Group"), (b) 2,400,666 shares of our Class A Common Stock held beneficially by MFV Holdings One LLC ("MFV"), (c) 22,378,833 shares of our Class B Common Stock that are held directly by MFV, (d) 198,267 shares of Class A Common Stock issuable to M&F Group upon exercise of a Common Stock Purchase Warrant held by M&F Group, (e) 2,283,105 shares of Class A Common Stock issuable to M&F Group at the option of M&F Group pursuant to a commitment letter, dated December 5, 2017, (f) 655,721 shares of our Class B Common Stock held directly by Mr. Perelman, and (g) 49,713 shares of our Class B Common Stock held directly by the Ronald O. Perelman Trust. MacAndrews & Forbes Incorporated directly or indirectly controls M&F Group, and MFV. Ronald O. Perelman, Director, Chairman and Chief Executive Officer of MacAndrews & Forbes Incorporated, may be deemed to beneficially own all shares of our Class A Common Stock and our Class B Common Stock beneficially owned by the Ronald O. Perelman Trust, MacAndrews, M&F Group and MFV. Mr. Perelman disclaims any beneficial ownership of the shares of Class A Common Stock and Class B Common Stock, except to the extent of his pecuniary interest therein. The shares so owned may from time to time be pledged to secure obligations of MacAndrews & Forbes Incorporated or its affiliates.

(10) Based solely on the Schedule 13G filed by Franklin Resources, Inc. with the SEC on February 5, 2018. Consists of 850,100 shares of Class A Common Stock held by Franklin Advisers, Inc. The shares of Class A common stock held by Franklin Advisers, Inc. are beneficially owned by one or more open- or closed-end investment companies or other managed accounts that are investment management clients of investment managers that are direct and indirect subsidiaries of Franklin Resources, Inc. ("FRI"). Charles B. Johnson and Rupert H. Johnson, Jr. (the "Principal Shareholders") each own in excess of 10% of the outstanding common stock of FRI and are the principal stockholders of FRI. FRI and the Principal Shareholders may be deemed to be, for purposes of Rule 13d-3 of the Exchange Act, the beneficial owners of securities held by persons and entities for whom or for which FRI subsidiaries provide investment management services. The physical address for each of the foregoing persons and entities is One Franklin Parkway, San Mateo, CA 94403.

Securities Authorized for Issuance under Equity Compensation Plans

Information about our equity compensation plans is incorporated herein by reference to the section entitled "Securities authorized for issuance under equity compensation plans" in Item 5 of Part II of this Annual Report on Form 10-K.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Certain Relationships and Related-Party Transactions

Other than compensation arrangements for our named executive officers and directors, we describe below each transaction or series of similar transactions, since January 1, 2017, to which we were a party or will be a party, in which:

- the amounts involved exceeded or will exceed $120,000; and
- any of our directors, executive officers or holders of more than 5% of our capital stock, or any member of the immediate family of the foregoing persons, had or will have a direct or indirect material interest.

Compensation arrangements for our named executive officers and directors are described in the sections entitled "*Executive Compensation-Employment and Services Agreements*" and "*Director Compensation*".

Policies and Procedures for Related Party Transactions

We have adopted a written Related Person Transaction Policy, which sets forth our policy with respect to the review, approval, ratification and disclosure of all related person transactions by our Audit Committee. In accordance with our Related Person Transaction Policy, our Audit Committee has overall responsibility for the implementation and compliance with this policy.

For the purposes of our Related Person Transaction Policy, a "related person transaction" is a transaction, arrangement or relationship (or any series of similar transactions, arrangements or relationships) in which we were, are or will be a participant and in which any related person (as defined in our Related Person Transaction Policy) had, has or will have a direct or indirect material interest, in excess of $120,000. A "related person transaction" does not include any employment relationship or transaction involving an executive officer and any related compensation resulting solely from that employment relationship which has been reviewed and approved by our Board of Directors or Compensation Committee.

Our Related Person Transaction Policy requires that notice of a proposed related person transaction be provided to our legal department or our Chief Financial Officer prior to entering into such transaction. If our legal department determines that such transaction is a related person transaction, the proposed transaction will be submitted to our Audit Committee for consideration at its next meeting. Under our Related Person Transaction Policy, only our Audit Committee will be permitted to approve those related person transactions that are in, or not inconsistent with, our best interests. In the event we become aware of a related person transaction that has not been previously reviewed, approved or ratified under our Related Person Transaction Policy and that is ongoing or is completed, the transaction will be submitted to our Audit Committee so that it may determine whether to ratify, rescind or terminate the related person transaction.

Our Related Person Transaction Policy also provides that our Audit Committee will review certain previously approved or ratified related person transactions that are ongoing to determine whether the related person transaction remains in our best interests and the best interests of our stockholders.

Exchange Agreement

In connection with the IPO, we, vTv Therapeutics LLC and vTv Therapeutics Holdings LLC ("Holdings"), and other existing and future holders of the vTv Units (and corresponding shares of Class B Common Stock) entered into an exchange agreement (the "Exchange Agreement") under which, from time to time, the holders (or certain transferees thereof) have the right to exchange their vTv Units (along with a corresponding number of our Class B Common Stock) for (i) shares of our Class A Common Stock on a one-for-one basis or (ii) cash (based on the market price of the shares of Class A common stock), at our option, subject to customary conversion rate adjustments for stock splits, stock dividends and reclassifications. Any decision to require an exchange for cash rather than shares of Class A Common Stock will ultimately be determined by our Board of Directors.

On October 5, 2015, Holdings was dissolved and made a liquidating distribution of shares of Class B Common Stock and the corresponding vTv Units to its members. As a result of the dissolution, M&F TTP Holdings LLC became the successor to Holdings under the Exchange Agreement, Investor Rights Agreement and the Tax Receivable Agreement pursuant to the terms of each respective agreement, and various other holders of Class B Common Stock became parties to the Exchange Agreement. On December 28, 2015, M&F TTP Holdings LLC contributed its shares of Class B Common Stock and the corresponding vTv Units to its subsidiary, M&F, which became the successor to M&F TTP Holdings LLC under the Exchange Agreement, Investor Rights Agreement and Tax Receivable Agreement pursuant to the terms of each respective agreement.

Tax Receivable Agreement

As further described above, our Class B Common Stock, together with the corresponding number of vTv Units, may be exchanged for shares of our Class A Common Stock, or for cash, at our option. These future exchanges of Class B Common Stock, together with the corresponding number of vTv Units, may result in increases in the tax basis of the assets of vTv Therapeutics LLC that otherwise would not have been available. Such increases in tax basis are likely to increase (for tax purposes) depreciation and amortization deductions and therefore reduce the amount of income tax we would otherwise be required to pay in the future and may also decrease gain (or increase loss) on future dispositions of certain assets to the extent the increased tax basis is allocated to those assets. The IRS may challenge all or part of these tax basis increases and a court could sustain such a challenge.

In connection with our IPO, we entered into a Tax Receivable Agreement with M&F, as successor in interest to Holdings, and M&F TTP Holdings LLC that provides for the payment by us to M&F (or certain of its transferees or other assignees) of 85% of the amount of cash savings, if any, in U.S. federal, state and local income tax or franchise tax that we actually realize (or, in some

circumstances, we are deemed to realize) as a result of (a) the exchange of Class B Common Stock, together with the corresponding number of vTv Units, for shares of our Class A Common Stock (or for cash), (b) tax benefits related to imputed interest deemed to be paid by us as a result of the Tax Receivable Agreement and (c) certain tax benefits attributable to payments under the Tax Receivable Agreement. Although the actual increase in tax basis and the amount and timing of any payments under the Tax Receivable Agreement will vary depending upon a number of factors, including the timing of exchanges, the price of shares of our Class A common stock at the time of the exchange, the nature of the assets, the extent to which such exchanges are taxable, the tax rates then applicable, and the amount and timing of our income, we expect that the payments that we make to M&F could be substantial.

M&F generally will not reimburse us for any payments that previously have been made under the Tax Receivable Agreement even if the IRS subsequently disallows the tax basis increase or any other relevant tax item. Instead, any excess cash payments made by us to M&F will be netted against any future cash payments that we might otherwise be required to make under the terms of the Tax Receivable Agreement. However, we might not determine that we have effectively made an excess cash payment to M&F for a number of years following the initial time of such payment. As a result, in certain circumstances we could make payments to M&F under the Tax Receivable Agreement in excess of our cash tax savings. Our ability to achieve benefits from any tax basis increase and the payments to be made under the Tax Receivable Agreement, will depend upon a number of factors, including the timing and amount of our future income and the nature of our assets.

To the extent that we are unable to make payments under the Tax Receivable Agreement for any reason, such payments will be deferred and will accrue interest until paid. In addition, the Tax Receivable Agreement provides that, upon a merger, asset sale or other form of business combination or certain other changes of control or if, at any time, we elect an early termination of the Tax Receivable Agreement, our (or our successor's) obligations with respect to exchanged or acquired Class B common stock, together with the corresponding number of vTv Units (whether exchanged or acquired before or after such change of control or early termination) would be required to be paid significantly in advance of the actual realization, if any, of any future tax benefits and would be based on certain assumptions, including that we would have sufficient taxable income to fully utilize the deductions arising from the increased tax deductions and tax basis and other benefits related to entering into the Tax Receivable Agreement, and, in the case of certain early termination elections, that any Class B Common Stock, together with the corresponding number of vTv Units, that have not been exchanged will be deemed exchanged for the market value of the Class A common stock at the time of termination. Consequently, it is possible that the actual cash tax savings realized by us will be significantly less than the corresponding Tax Receivable Agreement payments.

We are a holding company, and we have no material assets other than our ownership of vTv Units, and we have no independent means of generating revenue or cash flow. We intend, as its managing member, to cause vTv Therapeutics LLC to make distributions in an amount sufficient to allow us to pay our operating expenses, including any payments due under the Tax Receivable Agreement. However, vTv Therapeutics LLC's ability to make such distributions may be subject to various limitations and restrictions including, but not limited to, restrictions on distributions that would either violate any contract or agreement to which vTv Therapeutics LLC is then a party, including potential debt agreements, or any applicable law, or that would have the effect of rendering vTv Therapeutics LLC insolvent. If vTv Therapeutics LLC does not distribute sufficient funds for us to pay our operating expenses, including any payments due under the Tax Receivable Agreement, we may have to borrow funds, which could materially adversely affect our liquidity and subject us to various restrictions imposed by any such lenders. To the extent that we are unable to make payments under the Tax Receivable Agreement for any reason, such payments will be deferred and will accrue interest until paid.

Our organizational structure, including the fact that M&F owns more than 50% of the voting power of our voting stock and owns part of its economic interest in our business through vTv Therapeutics LLC, confers certain benefits upon M&F that will not benefit the holders of our Class A Common Stock to the same extent as it will benefit M&F. Although we will retain 15% of the amount of the tax benefits described above, it is possible that the interests of M&F may in some circumstances conflict with our interests and the interests of our other stockholders. For example, M&F may have different tax positions from us, especially in light of the Tax Receivable Agreement, that could influence their decisions regarding whether and when we should dispose of assets, whether and when we should incur new or refinance existing indebtedness, and whether and when we should terminate the Tax Receivable Agreement and accelerate our obligations thereunder. In addition, the determination of future tax reporting positions, the structuring of future transactions and the handling of any future challenges by any taxing authority to our tax reporting positions may take into consideration M&F's tax or other considerations, which may differ from the considerations of us or our other stockholders. To the extent that M&F is dissolved or liquidated, MacAndrews and/or its affiliates will succeed to the rights and obligations of M&F under the Tax Receivable Agreement.

Investor Rights Agreement

In connection with our IPO, we entered into an Investor Rights Agreement with M&F, as successor in interest to Holdings. The Investor Rights Agreement provides M&F with certain demand, shelf and piggyback registration rights with respect to its shares of our common stock and also provides M&F with certain governance rights, depending on the size of its holdings of our common stock.

Under the registration rights provisions of the Investor Rights Agreement:

- M&F and its affiliates have the right to cause us to conduct an unlimited number of demand registrations, subject to certain customary restrictions;
- once we are eligible to do so, M&F and its affiliates have the right to cause us to file and have declared effective a shelf registration statement on Form S-3 with respect to all of their shares of our common stock; and
- M&F and its affiliates have the right to participate in certain registered offerings by us.

The registration rights provisions also contain customary provisions relating to cooperation with the registration process, black-out periods and customary securities law indemnity provisions in favor of the selling stockholders. With certain customary exceptions, we will be required to bear all registration expenses, other than underwriting discounts and commissions and transfer taxes, associated with any registration of shares pursuant to the agreement. Registration rights may be transferred by M&F and its affiliates, subject to certain restrictions. No predetermined penalties or liquidated damages will be payable by us if we fail to comply with the registration rights provisions of the Investor Rights Agreement.

The Investor Rights Agreement also provides that M&F, subject to applicable corporate governance rules of the SEC and the NASDAQ Stock Market listing rules (which may require M&F to designate independent directors), has the right to designate: (i) a majority of the directors (and if the number of directors is even, one director more than 50% of the number of directors) if it beneficially owns more than 50% of our outstanding common stock, (ii) one less than a majority of the directors if it beneficially owns more than 25% but 50% or less of our outstanding common stock, and (iii) one-third of the directors (rounded down to the nearest whole number) if it beneficially owns more than 10% but 25% or less of our outstanding common stock. M&F loses the right to designate directors once it owns 10% or less of our outstanding common stock. So long as M&F beneficially owns 25% or more of our outstanding common stock, it will have the right, subject to applicable corporate governance rules of the SEC and the NASDAQ Stock Market listing rules, to designate the members of the committees of our Board of Directors. The Investor Rights Agreement will terminate when MacAndrews (which indirectly controls approximately 78.3% of our outstanding common stock as of February 23, 2018) and its permitted transferees hold less than 2.5% of our outstanding common stock. To the extent that M&F is dissolved or liquidated, MacAndrews and/or its affiliates will succeed to M&F rights and obligations under the Investor Rights Agreement.

Letter Agreement

In December 2017, we entered into the Letter Agreement with MacAndrews. Under the Letter Agreement, until December 5, 2018, we have the right to sell to MacAndrews shares of our Class A common stock at a price equal to $4.38 per share, and MacAndrews has the right (exercisable up to three times) to require us to sell to it shares of Class A common stock at the same price. An aggregate of $10.0 million worth of Class A common stock may be sold under the Letter Agreement (whether at our or MacAndrews' option). In addition, in connection with the Letter Agreement, we also issued MacAndrews warrants to purchase 198,267 shares of our Class A common stock at a price of $5.04 per share, exercisable until December 5, 2024.

Indemnification Agreements

We have entered into customary indemnification agreements with our executive officers and directors that provide, in general, that we will provide them with customary indemnification in connection with their service to us or on our behalf.

These indemnification agreements require us, among other things, to indemnify our directors and officers against liabilities that may arise by reason of their status or service as directors or officers, other than liabilities arising from willful misconduct. These indemnification agreements also require us to advance any expenses incurred by the directors or officers as a result of any proceeding against them as to which they could be indemnified and to obtain directors' and officers' insurance, if available on reasonable terms.

Director Independence

Our Board of Directors has established an Audit Committee, Compensation Committee and Nominating and Corporate Governance Committee. Our Audit Committee consists of directors Messrs. Spiegel (Chair), Fry and Parker. Our Compensation Committee consists of Messrs. Savas (Chair), Cohen and Meister. Our Nominating and Corporate Governance Committee consists of Messrs. Cohen (Chair), Kindler and Parker. The Audit Committee, Compensation Committee and Nominating and Corporate Governance Committee were established in July 2015 in connection with our IPO.

Our Board of Directors has undertaken a review of the independence of our directors and has determined that Messrs. Fry, Parker, Spiegel and Weiner are independent within the meaning of the NASDAQ Stock Market listing rules and meet the additional test for independence for Audit Committee members imposed by SEC regulation and the NASDAQ Stock Market listing rules.

We are a "controlled company" as set forth in NASDAQ Stock Market listing rules because more than 50% of the voting power of our common stock is held by MacAndrews. Under the NASDAQ Stock Market listing rules, a controlled company is exempt from the NASDAQ Stock Market corporate governance requirements that a majority of the Board of Directors consist of independent directors and that directors' nominations and executive compensation must be approved by a majority of independent directors or a nominating and governance committee or compensation committee composed solely of independent directors. We will rely on some of these exemptions from the corporate governance requirements until we are no longer a controlled company or the Board of Directors determines to no longer rely on these exemptions.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Summary of Fees

The Audit Committee has adopted a policy for the pre-approval of all audit and permitted non-audit services that may be performed by our independent registered public accounting firm. Under the policy, the Audit Committee must give prior approval for any amount or type of service within four categories—audit, audit-related, tax services or, to the extent permitted by law, other services—that the independent auditor provides. Prior to the annual engagement, the Audit Committee may grant general pre-approval for independent auditor services within these four categories. During the year, circumstances may arise when it may become necessary to engage the independent auditor for additional services not contemplated in the original pre-approval and, in those instances, such service will require separate pre-approval by the Audit Committee if it is to be provided by the independent auditor. For any pre-approval, the Audit Committee will consider whether such services are consistent with the SEC's rules on auditor independence, whether the auditor is best-positioned to provide the most cost-effective and efficient service and whether the service might enhance our ability to manage or control risk or improve audit quality. The Audit Committee may delegate to one or more of its members authority to approve a request for pre-approval, provided the member reports any approval so given to the Audit Committee at its next scheduled meeting. All fees incurred subsequent to our IPO were pre-approved by the Audit Committee.

The following table summarizes the aggregate fees billed for professional services rendered by EY to us in 2016 and 2017. A description of these various fees and services follows the table.

Name	2016	2017
Audit Fees	$ 424,821	$ 490,000
Audit-Related Fees	—	—
Tax Fees	—	—
All Other Fees	1,870	1,870

Audit Fees

The aggregate fees billed to us by EY in 2017 and 2016 reflected as audit fees above include fees associated with the annual audit of our financial statements for the years ended December 31, 2017 and 2016 and reviews of our financial statements included in our Quarterly Reports on Form 10-Q.

All Other Fees

The aggregate fees billed to us by EY in 2017 and 2016 reflected as all other fees above relate to the license of accounting research software.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a)(1) Financial Statements

The following documents are included on pages F-1 through F-28 attached hereto and are filed as part of this Annual Report on Form 10-K.

(a)(2) Financial Statement Schedules

Not applicable

(a)(3) List of Exhibits

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation (incorporated by reference from Exhibit 3.1 to the Company's Form 8-K, filed August 4, 2015 (File No. 001-37524)).
3.2	Amended and Restated By-laws (incorporated by reference from Exhibit 3.2 to the Company's Form 8-K, filed August 4, 2015 (File No. 001-37524)).
4.1	Form of Warrant to Purchase Class A Common Stock (incorporated by reference from Exhibit 4.1 to the Company's Form 10-K, filed February 24, 2017 (File No. 001-37524)).
4.2*	Common Stock Purchase Warrant.
10.1	Reimbursement of Fees and Expenses Letter Agreement, dated July 16, 2015, by and between vTv Therapeutics Inc. and MacAndrews & Forbes Group, LLC (incorporated by reference from Exhibit 10.6 to Amendment No. 5 to the Company's Registration Statement on Form S-1, filed July 23, 2015 (File No. 333-204951)).
10.2	Reorganization Agreement, dated as of July 29, 2015, among vTv Therapeutics Inc., vTv Therapeutics LLC, vTvx Holdings I LLC, vTvx Holdings II LLC and vTv Therapeutics Holdings LLC (incorporated by reference from Exhibit 10.1 to the Company's Form 8-K, filed August 4, 2015 (File No. 001-37524)).
10.3	Amended and Restated Limited Liability Company Agreement of vTv Therapeutics LLC, dated July 29, 2015 (incorporated by reference from Exhibit 10.2 to the Company's Form 8-K, filed August 4, 2015 (File No. 001-37524)).
10.4	Investor Rights Agreement, dated as of July 29, 2015, among vTv Therapeutics Inc., vTv Therapeutics Holdings LLC and other stockholders party thereto from time to time (incorporated by reference from Exhibit 10.3 to the Company's Form 8-K, filed August 4, 2015 (File No. 001-37524)).
10.5	Exchange Agreement, dated as of July 29, 2015, among vTv Therapeutics LLC, vTv Therapeutics Inc. and vTv Therapeutics Holdings LLC (incorporated by reference from Exhibit 10.4 to the Company's Form 8-K, filed August 4, 2015 (File No. 001-37524)).
10.6	Tax Receivable Agreement, dated as of July 29, 2015, among vTv Therapeutics Inc. and the other persons named therein (incorporated by reference from Exhibit 10.5 to the Company's Form 8-K, filed August 4, 2015 (File No. 001-37524)).
10.7	Form of Indemnification Agreement (incorporated by reference from Exhibit 10.7 to Amendment No. 4 to the Company's Registration Statement on Form S-1, dated July 23, 2015 (File No. 333-204951)).
10.8†	Executive Chairman Agreement, dated as of July 16, 2015, by and between vTv Therapeutics Inc. and Jeff Kindler (incorporated by reference from Exhibit 10.13 to Amendment No. 4 to the Company's Registration Statement on Form S-1, filed July 20, 2015 (File No. 333-204951)).

Exhibit Number	Description
10.9†	Employment Agreement, dated as of July 16, 2015, by and between vTv Therapeutics LLC and Stephen Holcombe, and for certain limited purposes specified therein, vTv Therapeutics Inc. (incorporated by reference from Exhibit 10.14 to Amendment No. 4 to the Company's Registration Statement on Form S-1, filed July 20, 2015 (File No. 333-204951)).
10.10†	Employment Agreement, dated as of July 16, 2015, by and between vTv Therapeutics LLC and Rudy Howard, and for certain limited purposes specified therein, vTv Therapeutics Inc. (incorporated by reference from Exhibit 10.15 to Amendment No. 4 to the Company's Registration Statement on Form S-1, filed July 20, 2015 (File No. 333-204951)).
10.11†	vTv Therapeutics Inc. 2015 Omnibus Equity Incentive Plan (incorporated by reference from Exhibit 10.6 to the Company's Form 8-K, filed August 4, 2015 (File No. 001-37524)).
10.12†	vTv Therapeutics Inc. Form of Nonqualified Option Award Agreement (incorporated by reference from Exhibit 10.7 to the Company's Form 8-K, filed August 4, 2015 (File No. 001-37524)).
10.13†	Employment Agreement, dated as of December 1, 2015, by and between vTv Therapeutics LLC and Larry Altstiel, and for certain limited purposes specified therein, vTv Therapeutics Inc. (incorporated by reference from Exhibit 10.13 to the Company's Form 10-K, filed March 4, 2016 (Filed No. 001-37524)).
10.14††	Agreement Concerning Glucokinase Activator Project, dated as of February 20, 2007, by and between Novo Nordisk A/S and TransTech Pharma, Inc. (incorporated by reference from Exhibit 10.8 to Amendment No. 1 to the Company's Registration Statement on Form S-1, dated June 19, 2015 (File No. 333-204951)).
10.15††	New Exclusive License Agreement, dated May 14, 2015, by and between The Trustees of Columbia University in the City of New York and TransTech Pharma, LLC (incorporated by reference from Exhibit 10.9 to Amendment No. 1 to the Company's Registration Statement on Form S-1, dated July 23, 2015 (File No. 333-204951)).
10.16††	Venture Loan and Security Agreement dated as of October 28, 2016 by and among the Company, vTv Therapeutics LLC, Horizon Technology Finance Corporation and Silicon Valley Bank (incorporated by reference from Exhibit 4.1 to the Company's Form 10-K, filed February 24, 2017 (File No. 001-37524)).
10.17*	First Amendment of Venture Loan and Security Agreement and Consent, dated as of December 20, 2017, by and among the Company, vTv Therapeutics LLC, Horizon Credit II LLC and Silicon Valley Bank.
10.18*	Letter Agreement, dated as of December 5, 2017, by and between MacAndrews & Forbes Group LLC and vTv Therapeutics Inc..
10.19†††*	License and Research Agreement, dated as of December 21, 2017, by and between Hangzhou Zhongmei Huadong Pharmaceutical Co., Ltd. And vTv Therapeutics LLC.
10.20†††*	License and Research Agreement, dated as of December 21, 2017, by and between Reneo Pharmaceuticals, Inc. and vTv Therapeutics LLC.
21.1*	Subsidiaries of vTv Therapeutics Inc.
23.1*	Consent of Ernst & Young LLP, Independent Registered Pubic Accounting Firm.
31.1*	Certification of President and Chief Executive Officer required by Rule 13a-14(a)/15d-14(a) under the Securities Exchange Act of 1934, as amended, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of Chief Financial Officer required by Rule 13a-14(a)/15d-14(a) under the Securities Exchange Act of 1934, as amended, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of President and Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2*	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

Exhibit Number	Description
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase
101.DEF*	XBRL Taxonomy Extension Definition Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase

† Management contract or compensatory plan or arrangement
†† Confidential treatment received with respect to portions of this exhibit.
††† Confidential treatment requested with respect to portions of this exhibit.
* Filed herewith

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: February 27, 2018

VTV THERAPEUTICS INC.
(Registrant)

By: /s/ Stephen L. Holcombe
Stephen L. Holcombe
President and Chief Executive Officer

By: /s/ Rudy C. Howard
Rudy C. Howard
Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

/s/ Jeffrey B. Kindler Jeffrey B. Kindler	Executive Chairman	February 27, 2018
/s/ Stephen L. Holcombe Stephen L. Holcombe	President and Chief Executive Officer (Principal Executive Officer)	February 27, 2018
/s/ Rudy C. Howard Rudy C. Howard	Chief Financial Officer (Principal Financial and Accounting Officer)	February 27, 2018
/s/ Steven M. Cohen Steven M. Cohen	Director	February 27, 2018
/s/ John A. Fry John A. Fry	Director	February 27, 2018
/s/ Paul M. Meister Paul M. Meister	Director	February 27, 2018
/s/ Craig C. Parker Craig C. Parker	Director	February 27, 2018
/s/ Paul G. Savas Paul G. Savas	Director	February 27, 2018
/s/ Noel J. Spiegel Noel J. Spiegel	Director	February 27, 2018
/s/ Howard L. Weiner Howard L. Weiner	Director	February 27, 2018

INDEX TO FINANCIAL STATEMENTS

The financial statements and other disclosures contained in this report include those of vTv Therapeutics Inc. ("we", the "Company" or the "Registrant"), which is the registrant, and those of vTv Therapeutics LLC ("vTv LLC"), which became the principal operating subsidiary of the Registrant in a series of reorganizational transactions that were completed (the "Reorganization Transactions") in connection with our initial public offering (the "IPO"), which was completed on August 4, 2015. As the Reorganization Transactions were considered to be among entities under common control, the Consolidated Financial Statements for periods prior to the IPO and Reorganization Transactions have been adjusted to combine TransTech Pharma, LLC ("TTP"), which was renamed vTvx Holdings I LLC ("vTvx Holdings I"), and High Point Pharmaceuticals, LLC ("HPP"), which was renamed vTvx Holdings II LLC ("vTvx Holdings II") (each of which was previously a separate entity), for presentation purposes. Unless the context suggests otherwise, references in this Annual Report on Form 10-K to the "Company", "we", "us" and "our" refer (1) prior to the IPO and Reorganization Transactions, to TTP and HPP and (2) after our IPO and Reorganization Transactions, to vTv Therapeutics Inc. and its consolidated subsidiaries. For more information regarding the transactions described above, see Note 1, "Description of Business and Basis of Presentation," to our financial statements contained in this Annual Report on Form 10-K.

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of vTv Therapeutics Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of vTv Therapeutics Inc. as of December 31, 2017 and 2016, the related consolidated statements of operations, changes in redeemable convertible units, redeemable noncontrolling interest, stockholders' and members' deficit, and cash flows for each of the three years in the period ended December 31, 2017, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2017 and 2016, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2017, in conformity with U.S. generally accepted accounting principles.

The Company's Ability to Continue as a Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, to date, the Company has not generated any product revenue, has not achieved profitable operations, and has stated that substantial doubt exists about the Company's ability to continue as a going concern. Management's evaluation of the events and conditions and management's plans regarding these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

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/s/ Ernst & Young LLP

We have served as the Company's auditor since 2000.
Raleigh, North Carolina
February 27, 2018

vTv Therapeutics Inc.
Consolidated Balance Sheets
(dollars in thousands, except per share and share data)

	December 31, 2017	December 31, 2016
Assets		
Current assets:		
Cash and cash equivalents	$ 11,758	$ 51,505
Restricted cash and cash equivalents	162	—
Accounts receivable, net	8,000	—
Prepaid expenses and other current assets	442	612
Total current assets	20,362	52,117
Restricted cash and cash equivalents, long-term	2,500	—
Property and equipment, net	283	444
Long-term investments	2,480	—
Long-term deposits	2,292	1,934
Total assets	$ 27,917	$ 54,495
Liabilities, Redeemable Noncontrolling Interest and Stockholders' Deficit		
Current liabilities:		
Accounts payable and accrued expenses	$ 13,901	$ 11,413
Current portion of deferred revenue	8,757	21
Current portion of notes payable	4,271	—
Total current liabilities	26,929	11,434
Notes payable	15,316	11,058
Deferred revenue, net of current portion	4,497	—
Warrant liability, related party	492	—
Other liabilities	290	433
Total liabilities	47,524	22,925
Commitments and contingencies		
Redeemable noncontrolling interest	131,440	122,515
Stockholders' deficit:		
Class A Common Stock, $0.01 par value; 100,000,000 shares authorized, 9,693,254 shares outstanding as of December 31, 2017 and December 31, 2016	97	97
Class B Common Stock, $0.01 par value; 100,000,000 shares authorized, 23,119,246 shares outstanding as of December 31, 2017 and December 31, 2016	232	232
Additional paid-in capital	127,682	124,212
Accumulated deficit	(279,058)	(215,486)
Total stockholders' deficit attributable to vTv Therapeutics Inc.	(151,047)	(90,945)
Total liabilities, redeemable noncontrolling interest and stockholders' deficit	$ 27,917	$ 54,495

The accompanying notes are an integral part of the consolidated financial statements.

vTv Therapeutics Inc.
Consolidated Statements of Operations
(in thousands, except per share and share data)

	Years Ending December 31,		
	2017	**2016**	**2015**
Revenue	$ 291	$ 634	$ 519
Operating expenses:			
Research and development	39,640	44,953	27,237
Research and development – related party	—	795	2,347
General and administrative	11,333	9,906	9,077
Total operating expenses	50,973	55,654	38,661
Operating loss	(50,682)	(55,020)	(38,142)
Other income (loss)	—	(22)	(838)
Other expense – related party	(190)	—	(392)
Interest income	117	87	40
Interest expense	(3,092)	(398)	(108)
Interest expense, net – related party	—	—	(1,667)
Loss before income taxes and noncontrolling interest	(53,847)	(55,353)	(41,107)
Income tax provision	800	—	—
Net loss before noncontrolling interest	(54,647)	(55,353)	(41,107)
Less: net loss attributable to noncontrolling interest	(38,503)	(39,001)	(13,609)
Net loss attributable to vTv Therapeutics Inc.	$ (16,144)	$ (16,352)	$ (27,498)
Net loss per share of vTv Therapeutics Inc. Class A Common Stock, basic and diluted	$ (1.67)	$ (1.71)	$ (3.32)
Weighted-average number of vTv Therapeutics Inc. Class A Common Stock, basic and diluted	9,693,254	9,545,527	8,276,520

The accompanying notes are an integral part of the consolidated financial statements.

vTv Therapeutics Inc.
Consolidated Statements of Changes in Redeemable Convertible Units, Redeemable Noncontrolling Interest, Stockholders' and Members' Deficit
(in thousands, except share data)

	Redeemable Convertible Preferred Units	Redeemable Noncontrolling Interest	Members' Deficit	Class A Common Stock		Class B Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Deficit
				Shares	Amount	Shares	Amount			
Balances at December 31, 2014	**$ 438,086**	**$ —**	**$ (498,806)**	**—**	**$ —**	**—**	**$ —**	**$ —**	**$ —**	**$ (498,806)**
Net loss prior to the Reorganization Transactions	—	—	(22,111)	—	—	—	—	—	—	(22,111)
Change in redemption value of TTP redeemable convertible preferred units	75,077	—	(75,077)	—	—	—	—	—	—	(75,077)
Effect of Reorganization Transactions	(513,163)	(2,997)	595,994	—	—	25,000,000	250	—	—	596,244
Issuance of Class A Common Stock in initial public offering, net of offering costs	—	—	—	7,812,500	79	—	—	104,366	—	104,445
Net loss subsequent to Reorganization Transactions	—	(13,609)	—	—	—	—	—	—	(5,387)	(5,387)
Share-based compensation recognized subsequent to Reorganization Transactions	—	—	—	—	—	—	—	859	—	859
Exchange of Class B Common Stock for Class A Common Stock	—	(12,461)	—	1,344,186	13	(1,344,186)	(13)	12,461	—	12,461
Change in redemption value of noncontrolling interest	—	190,598	—	—	—	—	—	—	(190,598)	(190,598)
Balances at December 31, 2015	**—**	**161,531**	**—**	**9,156,686**	**92**	**23,655,814**	**237**	**117,686**	**(195,985)**	**(77,970)**
Net loss	—	(39,001)	—	—	—	—	—	—	(16,352)	(16,352)
Share-based compensation	—	—	—	—	—	—	—	2,641	—	2,641
Issuance of warrants to purchase Class A Common Stock	—	—	—	—	—	—	—	721	—	721
Exchange of Class B Common Stock for Class A Common Stock	—	(3,164)	—	536,568	5	(536,568)	(5)	3,164	—	3,164
Change in redemption value of noncontrolling interest	—	3,149	—	—	—	—	—	—	(3,149)	(3,149)
Balances at December 31, 2016	**—**	**122,515**	**—**	**9,693,254**	**97**	**23,119,246**	**232**	**124,212**	**(215,486)**	**(90,945)**
Net loss	—	(38,503)	—	—	—	—	—	—	(16,144)	(16,144)
Share-based compensation	—	—	—	—	—	—	—	3,645	—	3,645
Issuance of warrants to purchase Class A Common Stock	—	—	—	—	—	—	—	167	—	167
Issuance of Letter Agreement and warrants to purchase Class A Common Stock - related party	—	—	—	—	—	—	—	(342)	—	(342)
Change in redemption value of noncontrolling interest	—	47,428	—	—	—	—	—	—	(47,428)	(47,428)
Balances at December 31, 2017	**$ —**	**$ 131,440**	**$ —**	**9,693,254**	**$ 97**	**23,119,246**	**$ 232**	**$ 127,682**	**$ (279,058)**	**$ (151,047)**

The accompanying notes are an integral part of the consolidated financial statements.

vTv Therapeutics Inc.
Consolidated Statements of Cash Flows
(in thousands)

	Twelve Months Ended December 31,		
	2017	**2016**	**2015**
Cash flows from operating activities:			
Net loss before noncontrolling interest	$ (54,647)	$ (55,353)	$ (41,107)
Adjustments to reconcile net loss before noncontrolling interest to net cash used in operating activities:			
Gain on disposal of property and equipment, net	(11)	(2)	(7)
Depreciation expense	197	265	501
Share-based compensation expense	3,645	2,641	859
Change in fair value of contingent distribution	—	—	695
Change in fair value of warrants, related party	190	—	—
Amortization of debt discount	1,029	154	—
Non-cash interest expense – distribution payable	—	—	27
Impairment loss on carrying value of land	—	—	48
Bad debt (recovery) expense – related party	—	—	(3)
Changes in assets and liabilities:			
Accounts receivable	(8,000)	69	(69)
Prepaid expenses and other assets	170	502	(1,020)
Employee loans receivable – related party	—	49	12
Note receivable	—	—	(20)
Long-term deposits	(358)	(261)	(1,598)
Accounts payable and accrued expenses	2,448	4,786	2,930
Accounts payable and accrued expenses – related party	—	(880)	2,458
Deferred revenue	10,753	(198)	219
Other liabilities	24	19	(871)
Net cash used in operating activities	(44,560)	(48,209)	(36,946)
Cash flows from investing activities:			
Proceeds from sale of assets	32	4	25
Purchases of property and equipment	(57)	(87)	(104)
Net cash used in investing activities	(25)	(83)	(79)
Cash flows from financing activities:			
Proceeds from issuance of vTv Therapeutics Inc. Class A Common Stock sold in initial public offering, net of offering costs	—	—	105,773
Proceeds from debt issuance	7,500	12,500	—
Debt issuance costs	—	(673)	—
Payment of offering costs – related party	—	—	(1,329)
Proceeds from debt issuance – related party	—	—	19,289
Repayment of long-term obligations	—	(33)	(89)
Net cash provided by financing activities	7,500	11,794	123,644
Net decrease in cash and cash equivalents	(37,085)	(36,498)	86,619
Total cash, cash equivalents and restricted cash and cash equivalents, beginning of year	51,505	88,003	1,384
Total cash, cash equivalents and restricted cash and cash equivalents, end of year	$ 14,420	$ 51,505	$ 88,003
Supplemental cash flow information:			
Cash paid for interest	$ 2,064	$ 242	$ 75
Non-cash activities:			
Receipt of investment as partial consideration for license agreement	$ 2,480	$ —	$ —
Change in carrying value of net assets and liabilities not transferred to vTv Therapeutics, LLC as part of the Reorganization Transactions	$ —	$ —	$ 2,747
Change in redemption value of noncontrolling interest	$ 47,428	$ 3,149	$ 190,598
Exchange of vTv Therapeutics Inc. Class B Common Stock and vTv Therapeutics, LLC member units for vTv Therapeutics Inc. Class A Common Stock	$ —	$ 3,164	$ 12,461
Issuance of Letter Agreement and warrants to purchase vTv Therapeutics Inc. Class A Common Stock to a related party	$ 302	$ —	$ —
Issuance of warrants to purchase vTv Therapeutics Inc. Class A Common Stock	$ —	$ 923	

The accompanying notes are an integral part of the consolidated financial statements.

Note 1: Description of Business and Basis of Presentation

Description of Business

vTv Therapeutics Inc. (the "Company," the "Registrant," "we" or "us"), was incorporated in the state of Delaware in April 2015. The Company was formed to discover and develop orally administered small molecule drug candidates to fill significant unmet medical needs.

Initial Public Offering

On August 4, 2015, vTv Therapeutics Inc. consummated its initial public offering ("IPO") of 7,812,500 shares of its Class A common stock, par value $0.01 per share ("Class A Common Stock"), at a price of $15.00 per share. The IPO raised net proceeds of approximately $109.0 million after underwriting discounts and commissions but before expenses. vTv Therapeutics Inc. used the net proceeds of the IPO to acquire nonvoting common units ("vTv Units") of vTv Therapeutics LLC ("vTv LLC"), an entity created to hold substantially all of the assets and operations of vTvx Holdings I LLC (formerly known as TransTech Pharma, LLC, "TTP" or "vTvx Holdings I") and vTvx Holdings II LLC (formerly known as High Point Pharmaceuticals, LLC, "HPP" or "vTvx Holdings II" and together with vTvx Holdings I, the "Predecessors"), which assets and operations were transferred to such entity in a series of pre-IPO reorganization transactions (the "Reorganization Transactions"). vTv LLC is an entity under common control with vTv Therapeutics Inc. The Company intends to use the net proceeds from the IPO to fund clinical development, studies, and trials for its various products and other drug candidates, for working capital and other general corporate purposes.

Reorganization Transactions

During July 2015, TTP and HPP were renamed vTvx Holdings I LLC and vTvx Holdings II LLC, respectively. Concurrent with the IPO, the Company then entered into the following Reorganization Transactions, through which the operations of vTvx Holdings I and vTvx Holdings II were combined into vTv LLC:

(1) vTvx Holdings I and vTvx Holdings II contributed substantially all of their assets, including all of their personnel and operations (the "Contributed Assets"), to a newly formed holding company, vTv Therapeutics Holdings LLC ("vTv Therapeutics Holdings"), in return for interests of vTv Therapeutics Holdings. Assets that were not contributed included restricted cash, certain receivables unrelated to the combined operations and land included in property and equipment, net. Liabilities that were not assumed included debt, a contingent distribution payable and other related party liabilities. All assets and liabilities that were not contributed or assumed remained with vTvx Holdings I and vTvx Holdings II and are not reflected in the Consolidated Balance Sheets as of December 31, 2017 and 2016;

(2) vTv Therapeutics Holdings contributed the Contributed Assets to vTv LLC, a newly formed Delaware limited liability company, and, for administrative convenience, vTv Therapeutics Holdings directed that the assets be transferred directly to vTv LLC on behalf of vTv Therapeutics Holdings;

(3) vTv Therapeutics Inc. amended and restated its certificate of incorporation and by-laws to provide for two classes of common stock:

  (a) Class A Common Stock, which represents economic interests and has one vote per share, and

  (b) Class B common stock, par value $0.01 per share ("Class B Common Stock"), which represents no economic interests and has one vote per share;

(4) vTv LLC amended and restated its limited liability company agreement (the "Amended and Restated LLC Agreement") to provide that it has two classes of membership units:

  (a) One managing member unit, which represents no economic interests and has 100% of the voting power of vTv LLC; and

  (b) Non-voting vTv Units, which represent economic interests;

(5) vTv LLC issued the managing member unit to vTv Therapeutics Inc.;

(6) vTv LLC issued 25,000,000 vTv Units to vTv Therapeutics Holdings; and

(7) vTv Therapeutics Inc. issued 25,000,000 shares of Class B Common Stock, which represents no economic interests in the Company but has the right to cast one vote per share, to vTv Therapeutics Holdings which correspond to each vTv Unit held by vTv Therapeutics Holdings.

Below is a summary of the principal documents entered into in connection with the Reorganization Transactions:

Exchange Agreement - Pursuant to the terms of the Exchange Agreement, but subject to the Amended and Restated LLC Agreement of vTv LLC, the vTv Units (along with a corresponding number of shares of the Class B Common Stock) are exchangeable for (i) shares of the Class A Common Stock on a one-for-one basis or (ii) cash (based on the fair market value of the Class A Common Stock as determined pursuant to the Exchange Agreement), at the option of vTv Therapeutics Inc. (as the managing member of vTv LLC), subject to customary conversion rate adjustments for stock splits, stock dividends and reclassifications. Any decision to require an exchange for cash rather than shares of Class A Common Stock will ultimately be determined by the entire board of directors of vTv Therapeutics Inc. (the "Board of Directors"). On October 5, 2015, vTv Therapeutics Holdings was dissolved, and various holders of Class B Common Stock became parties to the Exchange Agreement.

Tax Receivable Agreement - The Tax Receivable Agreement among the Company, M&F TTP Holdings Two LLC, as successor in interest to vTv Therapeutics Holdings ("M&F") and M&F TTP Holdings LLC provides for the payment by the Company to M&F (or certain of its transferees or other assignees) of 85% of the amount of cash savings, if any, in U.S. federal, state and local income tax or franchise tax that the Company actually realizes (or, in some circumstances, the Company is deemed to realize) as a result of (a) the exchange of Class B Common Stock, together with the corresponding number of vTv Units, for shares of the Company's Class A Common Stock (or for cash), (b) tax benefits related to imputed interest deemed to be paid by the Company as a result of the Tax Receivable Agreement and (c) certain tax benefits attributable to payments under the Tax Receivable Agreement.

Investor Rights Agreement - The Company is party to an investor rights agreement with M&F, as successor in interest to vTv Therapeutics Holdings (the "Investor Rights Agreement"). The Investor Rights Agreement provides M&F with certain demand, shelf and piggyback registration rights with respect to its shares of Class A Common Stock and also provides M&F with certain governance rights, depending on the size of its holdings of Class A Common Stock. Under the Investor Rights Agreement, M&F was initially entitled to nominate a majority of the members of the Board of Directors and designate the members of the committees of the Board of Directors.

On October 1, 2015, vTvx Holdings I and vTvx Holdings II merged with and into vTv Therapeutics Holdings, with vTv Therapeutics Holdings continuing as the surviving limited liability company. On October 5, 2015, vTv Therapeutics Holdings was dissolved and made a liquidating distribution of shares of Class B Common Stock and the corresponding vTv Units to its members. As a result of the dissolution, M&F TTP Holdings LLC became the successor to vTv Therapeutics Holdings under the Investor Rights Agreement, the Exchange Agreement and the Tax Receivable Agreement pursuant to the terms of each respective agreement, and various other holders of Class B Common Stock became parties to the Exchange Agreement. On December 28, 2015, M&F TTP Holdings LLC contributed its shares of Class B Common Stock and the corresponding vTv Units to its subsidiary, M&F, which became the successor to M&F TTP Holdings LLC under the Investor Rights Agreement, Exchange Agreement and Tax Receivable Agreement pursuant to the terms of each respective agreement.

Reclassifications

To facilitate comparison of information across periods, certain reclassifications have been made to prior period amounts to conform to the current period's presentation.

Principles of Consolidation

Subsequent to the IPO and the Reorganization Transactions, vTv Therapeutics Inc. is a holding company, and its principal asset is a controlling equity interest in vTv LLC, the Company's principal operating subsidiary, which is a clinical-stage biopharmaceutical company engaged in the discovery and development of orally administered small molecule drug candidates to fill significant unmet medical needs.

The Company has determined that vTv LLC is a variable-interest entity ("VIE") for accounting purposes and that vTv Therapeutics Inc. is the primary beneficiary of vTv LLC because (through its managing member interest in vTv LLC and the fact that the senior management of vTv Therapeutics Inc. is also the senior management of vTv LLC) it has the power and benefits to direct all of the activities of vTv LLC, which include those that most significantly impact vTv LLC's economic performance. vTv Therapeutics Inc. has therefore consolidated vTv LLC's results pursuant to Accounting Standards Codification Topic 810, "Consolidation" in its

consolidated financial statements. Various holders own non-voting interests in vTv LLC, representing a 70.5% economic interest in vTv LLC, effectively restricting vTv Therapeutics Inc.'s interest to 29.5% of vTv LLC's economic results, subject to increase in the future, should vTv Therapeutics Inc. purchase additional vTv Units or should the holders of vTv Units decide to exchange such units (together with shares of Class B Common Stock) for shares of Class A Common Stock (or cash) pursuant to the Exchange Agreement. vTv Therapeutics Inc. has provided financial and other support to vTv LLC in the form of its purchase of vTv Units with the net proceeds of the IPO in 2015, its agreeing to be a co-borrower under the Venture Loan and Security Agreement (the "Loan Agreement") with Horizon Technology Finance Corporation and Silicon Valley Bank (together, the "Lenders") which was entered into in 2016 and its entrance into the letter agreement with MacAndrews and Forbes Group LLC (the "Letter Agreement") in December 2017. vTv Therapeutics Inc. will not be required to provide financial or other support for vTv LLC outside of its obligations pertaining to the Loan Agreement as a co-borrower. However, vTv Therapeutics Inc. will control its business and other activities through its managing member interest in vTv LLC, and its management is the management of vTv LLC. The creditors of vTv LLC do not have any recourse to the general credit of vTv Therapeutics Inc. except as allowed under the provisions of the Loan Agreement. Nevertheless, because vTv Therapeutics Inc. will have no material assets other than its interests in vTv LLC, any financial difficulties at vTv LLC could result in vTv Therapeutics Inc. recognizing a loss.

As the Reorganization Transactions were considered to be among entities under common control, the Consolidated Financial Statements for periods prior to the IPO and Reorganization Transactions have been adjusted to combine the historical financial statements of TTP and HPP (which were previously separate entities) for presentation purposes. The historical combined financial statements of these entities include assets and liabilities not transferred to the Company as part of the Reorganization Transactions as discussed above.

Going Concern and Liquidity

To date, the Company has not generated any product revenue and has not achieved profitable operations. The continuing development of the Company's drug candidates will require additional financing. From its inception through December 31, 2017, the Company has funded its operations primarily through a combination of private placements of preferred equity, research collaboration agreements, upfront and milestone payments for license agreements, debt and equity financings and the completion of its IPO in August 2015. As of December 31, 2017, the Company had an accumulated deficit of $279.1 million and has generated net losses in each year of its existence. The Company's currently available sources of liquidity include the Company's cash and cash equivalents balance as of December 31, 2017 of $11.8 million, the $7.2 million upfront payment receivable from our Huadong License Agreement, net of applicable foreign withholding taxes, and the $10.0 million of funds available under the Letter Agreement, which management believes will allow the Company to continue its operations and activities for a period of less than twelve months from the issuance of these Consolidated Financial Statements.

Based on the Company's current operating plan, management believes that the current cash and cash equivalents will allow the Company to meet its liquidity requirements through the receipt of top-line results for Subpart A of its STEADFAST Study which we anticipate receiving in April 2018. These conditions raise substantial doubt about the Company's ability to continue as a going concern. In addition to available cash and cash equivalents, the Company is seeking possible partnering opportunities for its GKA, GLP-1r and other drug candidates which it believes may provide additional cash for use in its operations and the continuation of the clinical trials for its drug candidates. The Company may also pursue other sources of financing to provide flexibility to its operating plan. The timing and availability of such financing is not yet known.

The Company's financial statements have been prepared assuming the Company will continue as a going concern, which contemplates, among other things, the realization of assets and satisfaction of liabilities in the normal course of business. The Consolidated Financial Statements do not include adjustments to reflect the possible future effects on the recoverability and classification of recorded assets or the amounts of liabilities that might be necessary should the Company be unable to continue as a going concern.

Note 2: Summary of Significant Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires the Company to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

On an ongoing basis, the Company evaluates its estimates, including those related to the grant date fair value of equity awards, the fair value of warrants to purchase shares of its Class A Common Stock, the fair value of the Class B Common Stock, the useful lives of property and equipment, the fair value of the Company's membership units, the fair value of redeemable preferred units, and the fair value of the Company's debt, among others. The Company bases its estimates on historical experience and on various other assumptions that it believes to be reasonable, the results of which form the basis for making judgments about the carrying value of assets and liabilities.

Concentration of Credit Risk

Financial instruments that potentially expose the Company to concentrations of credit risk consist principally of cash on deposit with multiple financial institutions. The balances of these cash accounts frequently exceed insured limits.

Accounts receivable as of December 31, 2017, consisted entirely of the upfront payment due in connection with the License Agreement with Hangzhou Zhongmei Huadong Pharmaceutical Co., Ltd. ("Huadong") (the "Huadong License Agreement") which was fully received in January 2018. There were no accounts receivable at December 31, 2016.

Four customers represented 100% of the revenue earned during the year ended December 31, 2017. Two customers represented 100% of the revenue earned during the years ended December 31, 2016 and 2015.

Cash and Cash Equivalents

The Company considers any highly liquid investments with an original maturity of three months or less to be cash and cash equivalents.

Restricted Cash and Cash Equivalents

Restricted cash and cash equivalents as of December 31, 2017 was $0.2 million. This amount has been received through a research, development and commercialization agreement with JDRF International ("JDRF") (the "JDRF Agreement") but has not yet been utilized to fund the development activities required under the JDRF Agreement. Restricted cash and cash equivalents, long-term as of December 31, 2017 was $2.5 million. This amount relates to the minimum balance that the Company must maintain in a deposit account pledged to secure the Loan Agreement and subject to an account control agreement pursuant to the Loan Agreement, as amended. There were no balances of restricted cash and cash equivalents as of December 31, 2016.

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the Consolidated Balance Sheets as of December 31, 2017 and 2016 that sum to the total of the same such amounts shown in the Consolidated Statements of Cash Flows (in thousands):

	2017	2016
Cash and cash equivalents	$ 11,758	$ 51,505
Restricted cash and cash equivalents	162	—
Restricted cash and cash equivalents, long-term	2,500	—
Total cash, cash equivalents and restricted cash and cash equivalents shown in the consolidated statement of cash flows	$ 14,420	$ 51,505

Collaboration Revenue and Accounts Receivable

The majority of the Company's collaboration revenue and accounts receivable relates to its agreements to license certain of its potential drug products for development. See Note 3 for further discussion of the Company's collaboration agreements.

Accounts receivable are stated at net realizable value. On a periodic basis, the Company evaluates its accounts receivable and establishes an allowance based on its history of collections and write-offs and the current status of all receivables.

Property and Equipment and other Long-lived Assets

The Company records property and equipment at cost less accumulated depreciation. Costs of renewals and improvements that extend the useful lives of the assets are capitalized. Maintenance and repairs are expensed as incurred. Depreciation is determined on a straight-line basis over the estimated useful lives of the assets, which generally range from three to ten years. Leasehold improvements

are depreciated over the shorter of the useful life of the asset or the term of the related lease. Upon retirement or disposition of assets, the costs and related accumulated depreciation are removed from the accounts with the resulting gains or losses, if any, reflected in results of operations.

The estimated useful lives of property and equipment are as follows:

Asset Category	Useful Life (in years)
Laboratory equipment	7
Computers and hardware	3-5
Furniture and office equipment	3-7
Software	3
Leasehold improvements	Shorter of useful life or remaining term of lease

The Company periodically assesses it property and equipment and other long-lived assets for impairment in accordance with the relevant accounting guidance. There were no assets held for sale at December 31, 2017 or 2016.

Investments

In connection with the Reneo License Agreement, the Company received common stock and certain participation rights representing a minority equity interest in Reneo that is classified as a long-term investment in the Company's Consolidated Balance Sheet as of December 31, 2017. Upon acquisition, on December 21, 2017, this investment was recognized at its fair value of $2.5 million. This investment is accounted for under the cost method because the Company owns less than 20% of the voting equity and does not have the ability to exercise significant influence over Reneo. The Company monitors this investment for impairment and will make appropriate reductions to its carrying value when necessary. No indicators of impairment have occurred since its acquisition. The Company did not hold any such investments as of December 31, 2016.

Revenue Recognition

The Company uses the revenue recognition guidance established by ASC Topic 605, "Revenue Recognition." The Company recognizes revenue when 1) persuasive evidence of an arrangement exists; 2) the service has been provided to the customer; 3) collection of the fee is reasonably assured; and 4) the amount of the fee to be paid by the customer is fixed or determinable. In determining the accounting for collaboration and alliance agreements, the Company follows the provisions of ASC Topic 605, Subtopic 25, "Multiple-Element Arrangements" ("ASC 605-25") and ASC 808 ("Collaborative Arrangements"). ASC 605-25 provides guidance on whether an arrangement that involves multiple revenue-generating activities or deliverables should be divided into separate units of accounting for revenue recognition purposes and, if division is required, how the arrangement consideration should be allocated among the separate units of accounting. If a deliverable has value on a stand-alone basis, the Company treats the deliverable as a separate unit of accounting. If the arrangement constitutes separate units of accounting according to the separation criteria of ASC 605-25, the consideration received is allocated among the separate units of accounting and the applicable revenue recognition criteria is applied to each unit. The Company determines how to allocate amounts received under agreements among the separate units based on the respective selling price of each unit. If the arrangement constitutes a single unit of accounting, the revenue recognition policy must be determined for the entire arrangement and the consideration received is recognized over the period of inception through the date the last deliverable within the single unit of accounting is expected to be delivered.

Collaboration research and development revenue is earned and recognized as research is performed and related expenses are incurred. Non-refundable upfront fees are recorded as deferred revenue and recognized into revenue as license fees and milestones from collaborations on a straight-line basis over the estimated period of the Company's substantive performance obligations. If the Company does not have substantive performance obligations, it recognizes non-refundable upfront fees into revenue ratably over the period during which the product deliverable is provided to the customer.

Revenue for non-refundable payments based on the achievement of milestone events under collaborative arrangements is recognized in accordance with ASC Topic 605, Subtopic 28, "Milestone Method" ("ASC 605-28"). Milestone events under the Company's collaboration agreements may include research, development, regulatory, commercialization, and sales events. Under ASC 605-28, a milestone payment is recognized as revenue when the applicable event is achieved if the event meets the definition of a milestone and the milestone is determined to be substantive. ASC 605-28 defines a milestone event as an event having all of the following characteristics: (1) substantive uncertainty regarding achievement of the milestone event exists at the inception of the arrangement; (2) the event can only be achieved based, in whole or in part, on either the Company's performance or a specific outcome resulting from the Company's performance; and (3) if achieved, the event will result in additional payment due to the Company. The Company also treats events that can only be achieved based, in whole or in part, on either a third party's performance

or a specific outcome resulting from a third party's performance as milestone events if the criteria of ASC 605-28 are otherwise satisfied.

Research and development costs that are reimbursable under collaboration agreements are recorded in accordance with ASC Topic 605, Subtopic 45, "Principal-Agent Considerations." Amounts reimbursed under a cost-sharing arrangement are reflected as reductions of research and development expense.

Fair Value of Financial Instruments

The Company uses a three-tier fair value hierarchy to classify and disclose all assets and liabilities measured at fair value on a recurring basis, as well as assets and liabilities measured at fair value on a non-recurring basis, in periods subsequent to their initial measurement. The hierarchy requires the Company to use observable inputs when available, and to minimize the use of unobservable inputs, when determining fair value. The three tiers are defined as follows:

- Level 1—Observable inputs that reflect quoted market prices (unadjusted) for identical assets or liabilities in active markets;
- Level 2—Observable inputs other than quoted prices in active markets that are observable either directly or indirectly in the marketplace for identical or similar assets and liabilities; and
- Level 3—Unobservable inputs that are supported by little or no market data, which require the Company to develop its own assumptions.

Research and Development

Major components of research and development costs include cash compensation, depreciation expense on research and development property and equipment, costs of preclinical studies, clinical trials and related clinical manufacturing, costs of drug development, costs of materials and supplies, facilities cost, overhead costs, regulatory and compliance costs, and fees paid to consultants and other entities that conduct certain research and development activities on the Company's behalf. Research and development costs are expensed as incurred.

The Company records accruals based on estimates of the services received, efforts expended and amounts owed pursuant to contracts with numerous contract research organizations. In the normal course of business, the Company contracts with third parties to perform various clinical study activities in the ongoing development of potential products. The financial terms of these agreements are subject to negotiation and variation from contract to contract and may result in uneven payment flows. Payments under the contracts depend on factors such as the achievement of certain events and the completion of portions of the clinical study or similar conditions. The objective of the Company's accrual policy is to match the recording of expenses in its financial statements to the actual services received and efforts expended. As such, expense accruals related to clinical studies are recognized based on the Company's estimate of the degree of completion of the event or events specified in the specific clinical study.

The Company records nonrefundable advance payments it makes for future research and development activities as prepaid expenses. Prepaid expenses are recognized as expense in the Consolidated Statements of Operations as the Company receives the related goods or services.

Patent Costs

Patent costs, including related legal costs, are expensed as incurred and recorded within general and administrative operating expenses on the Consolidated Statements of Operations.

Income Taxes

In connection with the IPO, vTv Therapeutics Inc. was formed. From August 1, 2015, vTv Therapeutics Inc. has been subject to corporate level income taxes. Prior to July 30, 2015, TTP and HPP were taxed as partnerships and all their income and deductions flowed through and were subject to tax at the partner level.

As a result of the Reorganization Transactions, vTv Therapeutics Inc. acquired vTv Units and is required to recognize deferred tax assets and liabilities for the difference between the financial reporting and tax basis of its investment in vTv LLC.

The Company's income tax expense, deferred tax assets and liabilities and reserves for unrecognized tax benefits reflect management's best assessment of estimated future taxes to be paid. The Company is subject to income taxes in both the United States and various state jurisdictions. Significant judgments and estimates are required in determining the consolidated income tax expense.

The Company accounts for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events included in the financial statements. Under this method, the Company determines deferred tax assets and liabilities on the basis of differences between the financial statement and tax bases of assets and liabilities by using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period in which the enactment date occurs.

The Company recognizes deferred tax assets to the extent it believes these assets are more-likely-than-not to be realized. In making such a determination, the Company considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax planning strategies and recent results of operations.

The Company records uncertain tax positions on the basis of a two-step process in which (1) it determines whether it is more-likely-than-not that the tax positions will be sustained on the basis of the technical merits of the position and (2) for those tax positions meeting the more-likely-than-not recognition threshold, it recognizes the largest amount of tax benefit that is more than 50% likely to be realized upon ultimate settlement with the related tax authority.

Interest and penalties related to income taxes are included in the benefit (provision) for income taxes in the Company's Consolidated Statement of Operations. The Company has not incurred any significant interest or penalties related to income taxes in any of the periods presented.

Redeemable Convertible Preferred Units and Noncontrolling Interest

The Company initially recorded the redeemable convertible preferred units of the Predecessors at their fair values at issuance, net of issuance costs. All of the redeemable convertible preferred units were presented outside of permanent members' deficit as the units were redeemable at holders' option at the greater of (a) such series' liquidation value (i.e., the original cost for each unit of such series (as adjusted for any unit split, unit dividend or other similar events)) plus all declared and unpaid distributions on such series and (b) such series' fair market value (plus all declared but unpaid distributions on such series). The Company's policy is to record changes in the redemption value of the redeemable convertible preferred units immediately as they occur and adjust the carrying value to equal the redemption value at each reporting period.

Similarly, the Company records the redeemable noncontrolling interest represented by the vTv Units and the Class B Common stock at the higher of (1) its initial fair value plus accumulated earnings/losses associated with the noncontrolling interest or (2) the redemption value as of the balance sheet date.

See discussion and additional detail of the redeemable noncontrolling interest at Note 10.

Segment and Geographic Information

Operating segments are defined as an enterprise's components (business activities from which it earns revenue and incurs expenses) for which discrete financial information is (1) available; and (2) is regularly reviewed by the chief operating decision maker ("CODM") in deciding how to allocate resources and in assessing performance. The Company's CODM is its President and Chief Executive Officer. The Company's business operates in one reportable segment comprised of one operating segment.

Share-Based Compensation

Compensation expense for share-based compensation awards issued is based on the fair value of the award at the date of grant, and compensation expense is recognized for those awards earned over the service period. The grant date fair value of stock option awards is estimated using the Black-Scholes option pricing formula. Due to the lack of sufficient historical trading information with respect to its own shares, the Company estimates expected volatility based on the volatility of its own stock as well as a portfolio of selected stocks of companies believed to have market and economic characteristics similar to its own. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant. Due to a lack of historical exercise data, the Company estimates the expected life of its outstanding stock options using the simplified method specified under Staff Accounting Bulletin Topic 14.D.2. The fair value of restricted stock units ("RSU") grants are based on the market value of the Class A Common Stock on the date of grant. The Company also estimates the amount of share-based awards that are expected to be forfeited based on historical employee turnover rates.

Comprehensive Income

The Company does not have any components of other comprehensive income recorded within its Consolidated Financial Statements, and, therefore, does not separately present a statement of comprehensive income in its Consolidated Financial Statements.

Recently Issued Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2014-09, "Revenue From Contracts With Customers", that outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and supersedes most current revenue recognition guidance, including industry-specific guidance. The ASU is based on the core principle that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. This ASU also requires disclosures sufficient to enable users to understand the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers, including qualitative and quantitative disclosures about contracts with customers, significant judgments and changes in judgments, and assets recognized from the costs to obtain or fulfill a contract. Entities have the option of using either a full retrospective or a modified retrospective approach for the adoption of the new standard. In addition, in March, April, and May 2016, the FASB issued final amendments to clarify the implementation guidance for principal versus agent considerations, identifying performance obligations and the accounting for licenses of intellectual property, and narrow-scope improvements and practical expedients, respectively. This ASU is effective for fiscal years beginning after December 15, 2017 including interim periods within that reporting period. The Company plans to adopt this guidance using the modified retrospective transition method. The Company has evaluated the impact of the adoption of this statement and does not expect it to have a material impact on its Consolidated Financial Statements. The adoption will, however, require certain incremental costs of obtaining its contracts with customers to be recorded as assets upon adoption and be amortized over the related recognition period.

In January 2016, the FASB issued ASU No. 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities, which amends ASC 825-10, Financial Instruments – Overall. This ASU amends various aspects of the recognition, measurement, presentation and disclosure of financial instruments. This ASU is effective for fiscal years beginning after December 31, 2017, including interim periods within those fiscal years. The Company plans to elect to use the measurement alternative, defined as cost, less impairments, adjusted by observable price changes. The adoption of this guidance will increase the volatility of the Company's other income (loss) as a result of the remeasurement of its financial instruments upon the occurrence of observable price changes and impairments.

In February 2016, the FASB issued ASU No. 2016-02, "Lease (Topic 842)" ("ASU 2016-02"), which increases transparency and comparability among companies accounting for lease transactions. The most significant change of this update will require the recognition by a lessee of lease assets and liabilities on its balance sheet for operating lease arrangements with lease terms greater than 12 months. This update will require a modified retrospective application which includes a number of optional practical expedients related to the identification and classification of leases commenced before the effective date. This ASU is effective for fiscal years and interim periods within those fiscal years, beginning after December 18, 2018. The adoption of this guidance will result in the recognition of additional assets and liabilities related to the Company's operating leases within its Consolidated Balance Sheets.

In March 2016, the FASB issued ASU No. 2016-09, "Compensation – Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting" ("ASU 2016-09"), which simplifies several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The Company adopted this guidance in the first quarter of fiscal 2017 on a prospective basis and will continue to estimate forfeitures of outstanding awards throughout the requisite service period. The adoption of this guidance did not have a material impact on the Company's Consolidated Financial Statements.

In November 2016, the FASB issued ASU No. 2016-18, "Statement of Cash Flows (Topic 230): Restricted Cash" ("ASU 2016-18"), which clarifies the classification and presentation of changes in restricted cash on the statement of cash flows. The update requires beginning-of-period and end-of-period total amounts shown on the statement of cash flows to include cash and cash equivalents as well as restricted cash and restricted cash equivalents. This ASU is effective for fiscal years beginning after December 15, 2017, including interim reporting periods within those fiscal years. The Company elected to early adopt this guidance in the fourth quarter of 2017. The adoption of the guidance changed the presentation of restricted cash and restricted cash equivalents within its Consolidated Statements of Cash Flows but did not have a material impact on the Company's Consolidated Financial Statements.

In May 2017, the FASB issued ASU No. 2017-09, "Compensation-Stock Compensation (Topic 718): Scope of Modification Accounting" ("ASU 2017-09"), which clarifies the changes to terms or conditions of a share-based payment award that require an entity to apply modification accounting. ASU 2017-09 is effective for annual reporting periods, and interim periods therein, beginning after December 15, 2017. Early application is permitted and prospective application is required. The Company does not expect that the adoption of this guidance will have a material impact on the Company's Consolidated Financial Statements.

Note 3: Collaboration Agreements

Reneo License Agreement

On December 21, 2017, the Company entered into a License Agreement with Reneo Pharmaceuticals, Inc. ("Reneo") (the "Reneo License Agreement"), under which Reneo obtained an exclusive, worldwide, sublicensable license to develop and commercialize the Company's peroxisome proliferation activated receptor delta (PPAR-δ) agonist program, including the compound *HPP593*, for therapeutic, prophylactic or diagnostic application in humans. Under the terms of the Reneo License Agreement, Reneo paid the Company an upfront cash payment of $3.0 million. The Company is eligible to receive additional potential development, regulatory and sales-based milestone payments totaling up to $94.5 million. In addition, Reneo is obligated to pay the Company royalty payments at mid-single to low-double digit rates, based on tiers of annual net sales of licensed products. Such royalties will be payable on a licensed product-by-licensed product and country-by-country basis until the latest of expiration of the licensed patents covering a licensed product in a country, expiration of data exclusivity rights for a licensed product in a country or a specified number of years after the first commercial sale of a licensed product in a country. As additional consideration, the Company has also received common stock and certain participation rights representing a minority equity interest in Reneo.

Pursuant to the terms of the Reneo License Agreement, the Company is required to provide technology transfer services for a defined period after the effective date. In accordance with ASC 605-25, the Company identified all of the obligations at the inception of the Reneo License Agreement. The significant obligations were determined to be the license and the technology transfer services. The Company has determined that the license and technology transfer services represent a single unit of accounting because they were not viewed to have standalone value. The Company also determined that there was no discernable pattern in which the technology services would be provided during the transfer services period. As such, the Company determined that the straight-line method would be used to recognize revenue over the transfer service period of 18 months and $0.1 million of revenue was recorded during the year ended December 31, 2017.

The development, regulatory and sales milestones represent non-refundable amounts that would be paid by Reneo to the Company if certain milestones are achieved in the future. The Company has elected to apply the guidance in ASC 605-28 to these milestones. These milestones, if achieved, are considered substantive as they relate solely to past performance and are commensurate with estimated enhancement of value associated with the achievement of each milestone as a result of the Company's performance. However, there can be no assurance that Reneo will achieve the milestones or that the Company will receive the related revenue.

Huadong License Agreement

On December 21, 2017, the Company entered into a License Agreement with Hangzhou Zhongmei Huadong Pharmaceutical Co., Ltd. ("Huadong") (the "Huadong License Agreement"), under which Huadong obtained an exclusive and sublicensable license to develop and commercialize the Company's glucagon-like peptide-1 receptor agonist ("GLP-1r") program, including the compound *TTP273*, for therapeutic uses in humans or animals, in China and certain other Pacific Rim countries, including Australia and South Korea (collectively, the "Huadong License Territory"). Additionally, under the Huadong License Agreement, the Company obtained a non-exclusive, sublicensable, royalty-free license to develop and commercialize certain Huadong patent rights and know-how related to the Company's GLP-1r program for therapeutic uses in humans or animals outside of the Huadong License Territory. Under the terms of the Huadong License Agreement, Huadong will pay the Company an initial license fee of $8.0 million and potential development and regulatory milestone payments totaling up to $25.0 million, with an additional potential regulatory milestone of $20.0 million if Huadong receives regulatory approval for a central nervous system indication. In addition, the Company is eligible for an additional $50.0 million in potential sales-based milestones, as well as royalty payments ranging from low-single to low-double digit rates, based on tiered sales of licensed products.

Under the Huadong License Agreement, the Company is also responsible for conducting a Phase 2 multi-region clinical trial (the "Phase 2 MRCT") including sites in both the United States and Huadong License Territory for the purpose of assessing the safety and efficacy of *TTP273* in patients with type 2 diabetes. The Phase 2 MRCT will be designed to satisfy the requirements of the China Food and Drug Administration necessary in order for Huadong to begin a Phase 3 clinical trial in China. The Company will also be responsible for contributing up to $3.0 million in connection with the Phase 2 MRCT

In accordance with ASC 605-25, the Company identified all of the obligations at the inception of the Huadong License Agreement. The significant obligations were determined to be (i) the exclusive license to develop and commercialize the Company's GLP-1r program, (ii) technology transfer services related to the chemistry and manufacturing know-how for a defined period after the effective date (iii) the obligation to sponsor and conduct the Phase 2 MRCT, (iv) the Company's obligation to participate on a joint development committee, and (v) other obligations considered to be de minimis in nature.

The Company has determined that the license and technology transfer services related to the chemistry and manufacturing know-how represent a combined unit of accounting because they were not viewed to have separate standalone value. The portion of the upfront payment allocated to this combined unit of accounting was estimated to be $6.9 million. The Company also determined that

there was no discernable pattern in which the technology transfer services would be provided during the transfer service period. As such, the Company determined that the straight-line method would be used to recognize revenue for this unit of accounting over the transfer service period of 18 months. For the year ended December 31, 2017, $0.1 million of revenue has been recognized related to this combined unit of accounting.

The Company also determined that the obligation to sponsor and conduct a portion of the Phase 2 MRCT should be treated as a separate unit of accounting. A portion of the total consideration received under the Huadong License Agreement was allocated to this unit of accounting based on its estimated fair value. This amount was deferred as of December 31, 2017 and revenue will be recognized using the proportional performance model over the period during which the Company conducts the Phase 2 MRCT trial. No revenue for this unit of accounting has been recognized during the year ended December 31, 2017.

The Company also determined that the obligation to participate in the joint development committee (the "JDC") to oversee the development of products and the Phase 2 MRCT in accordance with the development plan should be treated as a separate unit of accounting. A portion of the total consideration received under the Huadong License Agreement was allocated to this unit of accounting based on its estimated fair value. This amount was deferred as of December 31, 2017 and revenue will be recognized using the proportional performance model over the period of the Company's participation on the JDC. No revenue for this unit of accounting has been recognized during the year ended December 31, 2017.

The development, regulatory and sales milestones represent non-refundable amounts that would be paid by Huadong to the Company if certain milestones are achieved in the future. The Company has elected to apply the guidance in ASC 605-28 to these milestones. These milestones, if achieved are substantive as they relate solely to past performance and are commensurate with estimated enhancement of value associated with the achievement of each milestone as a result of the Company's performance. However, there can be no assurance that Huadong will achieve the milestones or that the Company will receive the related payments.

JDRF Agreement

In August 2017, the Company entered into the JDRF Agreement to support the funding of the simplici-T1 Study, an adaptive Phase 1b/2 study to explore the effects of *TTP399* in type 1 diabetics. We initiated this study in the fourth quarter of 2017. According to the terms of the JDRF Agreement, JDRF will provide research funding of up to $3.0 million based on the achievement of research and development milestones, with the total funding provided by JDRF not to exceed approximately one-half of the total cost of the project. Additionally, the Company has the obligation to make certain milestone payments to JDRF upon the commercialization, licensing, sale or transfer of *TTP399* as a treatment for type 1 diabetes.

Payments that the Company receives from JDRF under this agreement will be recorded as restricted cash and current liabilities, and recognized as an offset to research and development expense, based on the progress of the project, and only to the extent that the restricted cash is utilized to fund such development activities. As of December 31, 2017, the Company had received funding under this agreement of $0.3 million, and research and development costs were offset by $0.2 million. As of December 31, 2017, the Company has recognized restricted cash of $0.2 million related to this agreement.

Calithera License Agreement

In March 2015, the Company entered into the Calithera License Agreement under which Calithera obtained an exclusive, worldwide sublicenseable license to develop and commercialize certain of our hexokinase II inhibitors for any therapeutic, prophylactic, preventative or diagnostic use. Under the terms of the Calithera License Agreement, Calithera paid the Company an initial license fee of $0.6 million and a total of $0.3 million for employees of the Company to assist with the development of additional hexokinase inhibitors. This agreement was terminated, at the option of Calithera, effective December 21, 2017.

Note 4: Share-Based Compensation

In conjunction with the IPO, the Board of Directors and sole stockholder adopted a long-term equity incentive plan, the vTv Therapeutics Inc. 2015 Omnibus Equity Incentive Plan (the "Plan"). The Plan provides for the grant of stock options, restricted stock, restricted stock units and other awards based on our Class A Common Stock to management, other key employees, consultants and non-employee directors on terms and subject to conditions as established by our Compensation Committee. In settlement of its obligations under this plan, the Company will issue new shares of Class A Common Stock. The maximum number of shares of the Company's Class A Common Stock that has been approved and may be subject to awards under the Plan is 3.25 million, subject to adjustment in accordance with terms of the Plan.

The Company has issued non-qualified stock option awards and restricted stock units to certain employees, consultants and non-employee directors of the Company. These awards generally vest ratably over a three year period and the option awards expire after a term of ten years from the date of grant. For the years ended December 31, 2017, 2016 and 2015, the Company recognized $3.6 million, $2.6 million and $0.9 million of compensation expense related to share-based awards, respectively. Given that the Company

has established a full valuation allowance against its deferred tax assets, the Company has recognized no tax benefit related to these awards. As of December 31, 2017, the Company had total unrecognized stock-based compensation expense of approximately $4.3 million, which is expected to be recognized on a straight-line basis over a weighted average period of 1.6 years. The weighted average grant date fair value for all option grants during the years ended December 31, 2017, 2016 and 2015 was $4.15, $4.05 and $8.15 per option, respectively.

The aggregate intrinsic value of the in-the-money awards outstanding as of December 31, 2017 was $0.3 million, of which an immaterial amount related to vested stock options and $0.2 million related to unvested stock options.

The Company uses the Black-Scholes option pricing model to calculate the fair value of stock options granted. The fair value of stock options granted was estimated using the following assumptions during the years ended December 31, 2017, 2016 and 2015:

	For the Year Ended December 31,		
	2017	2016	2015
Expected volatility	68.72% - 85.93%	81.57% - 87.23%	83.84% - 88.23%
Expected life of option, in years	5.8 - 6.0	5.0 - 6.0	5.8 - 9.6
Risk-free interest rate	1.87% - 2.24%	1.22% - 1.45%	1.72% - 2.25%
Expected dividend yield	0.00%	0.00%	0.00%

The following table summarizes the activity related to the stock option awards for the year ended December 31, 2017 (in thousands, except per share amounts):

	Number of Shares	Weighted-Average Exercise Price
Awards outstanding at December 31, 2016	1,096,101	$ 10.68
Granted	882,000	5.77
Forfeited	(17,369)	6.95
Awards outstanding at December 31, 2017	1,960,732	$ 8.50
Options exercisable at December 31, 2017	716,787	$ 10.84
Weighted average remaining contractual term	7.8 Years	
Options vested and expected to vest at December 31, 2017	1,906,322	$ 8.57
Weighted average remaining contractual term	8.4 Years	

The following table summarizes the activity related to the awards of RSUs for the year ended December 31, 2017:

	Number of Shares	Weighted-Average Grant Date Fair Value
Awards outstanding at December 31, 2016	—	$ —
Granted	35,000	5.81
Awards outstanding at December 31, 2017	35,000	$ 5.81
RSUs vested and expected to vest at December 31, 2017	34,002	$ 5.81

As of December 31, 2017, the Company had total unrecognized stock-based compensation expense for its outstanding RSU awards of approximately $0.2 million, which is expected to be recognized over a weighted-average period of 2.4 years. The aggregate intrinsic value of the RSUs outstanding at December 31, 2017 was $0.2 million.

Compensation expense related to the grants of stock options is included in research and development and general and administrative expense as follows (in thousands):

	2017	2016	2015
Research and development	$ 1,485	$ 975	$ 221
General and administrative	2,160	1,666	638
Total share-based compensation expense	$ 3,645	$ 2,641	$ 859

Note 5: Property and Equipment

Property and equipment consists of the following (in thousands):

	December 31, 2017	December 31, 2016
Laboratory equipment	$ 6,275	$ 6,962
Leasehold improvements	1,679	2,358
Computers and hardware	323	292
Software	691	855
Furniture and office equipment	431	431
Total property and equipment	9,399	10,898
Less: accumulated depreciation and amortization	(9,116)	(10,454)
Property and equipment, net	$ 283	$ 444

Depreciation expense, including amounts pertaining to assets held under capital leases, was $0.2 million, $0.3 million and $0.5 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Note 6: Accounts Payable and Accrued Expenses

Accounts payable and accrued expenses consist of the following (in thousands):

	December 31, 2017	December 31, 2016
Accounts payable	$ 2,269	$ 3,060
Accrued development costs	8,586	6,305
Accrued payroll related costs	1,641	1,468
Accrued other	1,405	580
Total	$ 13,901	$ 11,413

Note 7: Notes Payable

Notes payable consist of the following (in thousands):

	December 31, 2017	December 31, 2016
Notes payable under the Loan Agreement	$ 20,000	$ 12,500
Less: Debt discount	(413)	(1,442)
Total notes payable	19,587	11,058
Less: Current portion	(4,271)	—
Total notes payable, net of current portion	$ 15,316	$ 11,058

In October 2016, the Company entered into the Loan Agreement with Horizon Technology Finance Corporation and Silicon Valley Bank, under which the Company and vTv LLC borrowed $20.0 million.

Each loan tranche bears interest at a floating rate equal to 10.5% plus the amount by which the one-month LIBOR exceeds 0.5%.

The Company borrowed the first tranche of $12.5 million upon close of the Loan Agreement in October 2016. The first tranche requires only monthly interest payments until May 1, 2018 followed by equal monthly payments of principal plus accrued interest through the scheduled maturity date on May 1, 2020. In addition, a final payment for the first tranche loan equal to $0.8 million will be due on May 1, 2020, or such earlier date specified in the Loan Agreement. The Company borrowed the second tranche of $7.5 million in March 2017. The second tranche requires only monthly interest payments until October 1, 2018, followed by equal monthly payments of principal plus accrued interest through the scheduled maturity date on October 1, 2020. In addition, a final payment for the second tranche loan equal to $0.5 million will be due on October 1, 2020, or such earlier date specified in the Loan Agreement. The availability of the third tranche of $5.0 million expired unused on June 30, 2017.

If the Company repays all or a portion of the loan prior to the applicable maturity date, it will pay the Lenders a prepayment penalty fee, based on a percentage of the then outstanding principal balance equal to 4.0% during the first 18 months following the funding of the second tranche and 2.0% thereafter.

In connection with the Loan Agreement, the Company has issued to the Lenders warrants to purchase shares of the Company's Class A Common Stock (the "Warrants"). On October 28, 2016, the Company issued Warrants to purchase 152,580 shares of its Class A Common Stock at a per share exercise price of $6.39 per share, which aggregate exercise price represents 6.0% of the principal amount borrowed under the first tranche of the Loan Agreement and 3.0% of the principal amount available under the second tranche of the Loan Agreement. On March 24, 2017, in connection with the funding of the second tranche, the Company issued Warrants to purchase 38,006 shares of its Class A Common Stock at a per share exercise price of $5.92 per share, which aggregate exercise price represents 3.0% of the principal amount of the second tranche of the Loan Agreement. In each instance, the Warrants have an exercise price equal to the lower of (a) the volume weighted average price per share of the Company's Class A Common Stock, as reported on the principal stock exchange on which the Company's Class A Common Stock is listed, for 10 trading days prior to the issuance of the applicable Warrants or (b) the closing price of a share of the Company's Class A Common Stock on the trading day prior to the issuance of the applicable Warrants. The Warrants will expire seven years from their date of issuance.

The Company's obligations under the Loan Agreement are secured by a first priority security interest in substantially all of its assets other than its intellectual property. Subject to certain conditions related to the Company's Phase 3 clinical trial of *azeliragon*, the Company may be required to grant a security interest in its intellectual property. The Company has agreed not to pledge or otherwise encumber its intellectual property assets, subject to certain exceptions.

The Loan Agreement includes customary affirmative and restrictive covenants, including, but not limited to, restrictions on the payment of dividends or other equity distributions and the incurrence of debt or liens upon the assets of the Company or its subsidiaries. The Loan Agreement does not contain any financial maintenance covenants other than a requirement to maintain a minimum cash balance of not less than $2.5 million in a deposit account pledged to secure the Loan Agreement and subject to an account control agreement. The minimum cash balance covenant was included as part of an amendment to the Loan Agreement in connection with our entry into the Huadong License Agreement in December 2017. The Loan Agreement includes customary events of default, including payment defaults, covenant defaults, and material adverse change default. Upon the occurrence of an event of default and following any applicable cure periods, a default interest rate of an additional 5% will be applied to the outstanding loan balances, and the Lenders may declare all outstanding obligations immediately due and payable and take such other actions as set forth in the Loan Agreement.

The Company incurred $0.7 million of costs in connection with the Loan Agreement in the year ended December 31, 2016. These costs, along with the allocated fair value of the Warrants issued of $0.9 million, were treated as a debt discount, and are offset against the carrying value of the notes payable in the Company's Consolidated Balance Sheet as of December 31, 2017 and 2016. These costs will be recognized as interest expense over the term of the first tranche using the effective interest method. The final payment for the first and second loan tranches of $0.8 million and $0.5 million, respectively, will be accrued as additional interest expense, using the effective interest method, over the term of the relevant tranche.

The Company recorded interest expense related to the Loan Agreement of $3.1 million and $0.4 million for the years ended December 31, 2017 and 2016, respectively. The annual effective interest rate on the note payable, including the amortization of the debt discounts and accretion of the final payments, is 17.7%.

Principal payments due under the terms of the Loan Agreement are as follows (in thousands):

2018	$	4,271
2019		10,000
2020		5,729
2021		—
2022		—
Total	$	20,000

Note 8: Commitments and Contingencies

Legal Matters

From time to time, the Company is involved in various legal proceedings arising in the normal course of business. If a specific contingent liability is determined to be probable and can be reasonably estimated, the Company accrues and discloses the amount. The Company is not currently a party to any material legal proceedings.

Columbia University Agreement

In May 2015, the Company entered into a worldwide exclusive agreement with Columbia University ("Columbia") to license certain intellectual property from Columbia. Under the agreement, the Company is obligated to pay to Columbia (1) an annual fee of $0.1 million from 2015 through 2021, (2) a potential regulatory milestone payment of $0.8 million and (3) potential royalty payments at a single digit royalty rate based on net sales of licensed products as defined in the agreement.

Novo Nordisk

In February 2007, the Company entered into an Agreement Concerning Glucokinase Activator Project with Novo Nordisk A/S (the "Novo License Agreement") whereby we obtained an exclusive, worldwide, sublicensable license under certain Novo Nordisk intellectual property rights to discover, develop, manufacture, have manufactured, use and commercialize products for the prevention, treatment, control, mitigation or palliation of human or animal diseases or conditions. As part of this license grant, the Company obtained certain worldwide rights to Novo Nordisk's GKA program, including rights to preclinical and clinical compounds such as *TTP399*. Under the terms of the Novo License Agreement, the Company has additional potential developmental and regulatory milestone payments totaling up to $115.0 million for approval of a product. The Company may also be obligated to pay an additional $75.0 million in potential sales-based milestones, as well as royalty payments, at mid-single digit royalty rates, based on tiered sales of commercialized licensed products.

Huadong License Agreement

Under the terms of the Huadong License Agreement, vTv LLC is responsible for sponsoring the Phase 2 MRCT including sites in both US and the Huadong License Territory for the purpose of assessing the safety and efficacy of *TTP273* in patients with type 2 diabetes. The Phase 2 MRCT will be designed to satisfy the requirements of the China Food and Drug Administration necessary in order for Huadong to begin a Phase 3 clinical trial in China. vTv LLC will be responsible for contributing up to $3.0 million in connection with the Phase 2 MRCT.

Lease Agreements

The Company leases various equipment and facilities under operating leases expiring at various dates through 2019. Rent expense for non-cancelable operating leases was $0.5 million, $0.6 million and $0.6 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Future minimum lease payments under non-cancelable operating leases as of December 31, 2017 were as follows (in thousands):

Year Ending December 31,		Operating Leases
2018	$	365
2019		371
2020		—
2021		—
2022		—
Total	$	736

The Company has recognized an asset retirement obligation for an obligation in its facility lease that requires the Company to return the property to the same or similar condition at the end of the lease as existed when the Company began using the facility. Although the lease termination date is currently in 2019, the Company may be able to renegotiate the lease to extend its terms. Asset retirement obligations recorded as a component of other noncurrent liabilities in the Consolidated Balance Sheets were $0.2 million at both December 31, 2017 and 2016. An immaterial amount of accretion and depreciation expense was recognized in the years ended December 31, 2017 and 2016.

Note 9: Stockholders' Equity

On July 29, 2015, the Company amended and restated its certificate of incorporation to authorize 100,000,000 shares of Class A Common Stock, 100,000,000 shares of Class B Common Stock and 50,000,000 shares of preferred stock, par value $0.01 per share.

Holders of Class A Common Stock and Class B Common Stock will be entitled to one vote for each share held on all matters submitted to stockholders for their vote or approval. The holders of Class A Common Stock and Class B Common Stock will vote together as a single class on all matters submitted to stockholders for their vote or approval, except with respect to the amendment of certain provisions of the Company's amended and restated certificate of incorporation that would alter or change the powers, preferences or special rights of the Class B Common Stock so as to affect them adversely, which amendments must be approved by a majority of the votes entitled to be cast by the holders of the shares affected by the amendment, voting as a separate class, or as otherwise required by applicable law. The voting power of the outstanding Class B Common Stock (expressed as a percentage of the total voting power of all common stock) will be equal to the percentage of vTv Units not held by the Company. Holders of Class B Common Stock are not entitled to receive dividends and will not be entitled to receive any distributions upon the liquidation, dissolution or winding up of the Company.

Equity Financing

On December 5, 2017, the Company entered into the Letter Agreement with MacAndrews, a related party. Under the Letter Agreement, until December 5, 2018, the Company has the right to sell to MacAndrews shares of its Class A Common Stock at a price equal to $4.38 per share, and MacAndrews has the right (exercisable up to three times) to require the Company to sell to it shares of its Class A Common Stock at the same price. An aggregate of $10.0 million worth of Class A Common Stock may be sold under the Letter Agreement (whether at the Company's or MacAndrews' option). In addition, in connection with the Letter Agreement, the Company also issued MacAndrews warrants (the "Consideration Warrants") to purchase 198,267 shares of the its Class A Common Stock, exercisable at a price of $5.04 per share (which is 115% of the option price under the Letter Agreement), exercisable until December 5, 2024.

The Consideration Warrants were recorded as warrant liability, related party within the Company's Consolidated Balance Sheet as of December 31, 2017 based on their fair value. The issuance of the Consideration Warrants was considered to be a cost of equity recorded as a reduction to additional paid-in capital. During the year ended December 31, 2017 the Company recognized an expense of $0.2 million related to the change in fair value of the Consideration Warrants. This expense was recognized as a component of other expense, related party in the Consolidated Statements of Operations.

Fair value of the Consideration Warrants was calculated as of December 5, 2017 using the methods described in Note 17 using the following assumptions:

Expected volatility	90.0%
Expected life of option, in years	7.0
Risk-free interest rate	2.8%
Expected dividend yield	0.00%

Loan Agreement Warrants

On October 28, 2016, the Company entered into the Loan Agreement as discussed in Note 7. In connection with the Loan Agreement, the Company issued to the Lenders Warrants to purchase a total of 152,580 shares of the Company's Class A Common Stock at an exercise price of $6.39 per share. Additionally, upon funding of the second tranche on March 24, 2017, the Company issued Warrants to purchase 38,006 shares of its Class A Common Stock at a per share exercise price of $5.92 per share, which aggregate exercise price represents 3.0% of the amount available under the second tranche of the Loan Agreement. In each instance, the Warrants have an exercise price equal to the lower of (a) the volume weighted average price per share of the Company's Class A Common Stock, as reported on the principal stock exchange on which the Company's Class A Common Stock is listed, for 10 trading days prior to the issuance of the applicable Warrants or (b) the closing price of a share of the Company's Class A Common Stock on the trading day prior to the issuance of the applicable Warrants. The Warrants will expire seven years from their date of issuance.

The Warrants issued with a determinable number of shares and exercise price were recorded as a component of additional paid-in capital within the Company's Consolidated Balance Sheet as of December 31, 2016 based on their relative fair value. The Warrants issued for a variable number of shares were recorded as a component of other liabilities within the Consolidated Balance Sheet as of December 31, 2016. This related liability was adjusted to its fair value on a periodic basis until the associated warrants qualified for equity classification upon the funding of the second tranche of the Loan Agreement on March 24, 2017. For the years ended December 31, 2017 and 2016, the Company recognized additional interest expense within the Consolidated Statement of Operations of a de minimis amount related to the adjustment of the Warrants to their fair value.

Fair value of the Warrants was calculated as of October 28, 2016 using the methods described in Note 17 using the following assumptions:

Expected volatility	82.54%
Expected life of option, in years	7.0
Risk-free interest rate	1.63%
Expected dividend yield	0.00%

Note 10: Redeemable Noncontrolling Interest

The Company is subject to the Exchange Agreement with respect to the vTv Units representing the outstanding 70.5% noncontrolling interest in vTv LLC (see Note 1). The Exchange Agreement requires the surrender of an equal number of vTv Units and Class B Common Stock for (i) shares of Class A Common Stock on a one-for-one basis or (ii) cash (based on the fair market value of the Class A Common Stock as determined pursuant to the Exchange Agreement), at the Company's option (as the managing member of vTv LLC), subject to customary conversion rate adjustments for stock splits, stock dividends and reclassifications. The exchange value is determined based on a 20 day volume weighted average price of the Class A Common Stock as defined in the Exchange Agreement, subject to customary conversion rate adjustments for stock splits, stock dividends and reclassifications.

The redeemable noncontrolling interest is recognized at the higher of (1) its initial fair value plus accumulated earnings/losses associated with the noncontrolling interest or (2) the redemption value as of the balance sheet date. At December 31, 2017 and 2016, the redeemable noncontrolling interest was recorded based on the redemption value as of the balance sheet date of $131.4 million and $122.5 million, respectively.

Note 11: Related-Party Transactions

PharmaCore, Inc.

Prior to its acquisition by Cambrex Corporation in October 2016, certain controlling shareholders of the Company also controlled PharmaCore, Inc. ("PharmaCore") and PharmaCore was therefore considered to be a related party. The Company purchased chemistry and Good Manufacturing Practices manufacturing services from PharmaCore. Total purchases from PharmaCore, while it was considered to be a related party were $0.8 million and $2.3 million for the years ended December 31, 2016 and 2015, respectively.

On April 17, 2007, the Company's Board of Directors approved $2.0 million of subordinated financing to be provided to PharmaCore. Advances were made and interest accrued before the Company entered into the Subordinated Promissory Note agreement (the "Note Agreement") with PharmaCore on June 9, 2008. The Note Agreement was amended on April 23, 2010 to provide an additional $2.9 million of subordinated financing, with the same terms as the original note. The Note Agreement had a nine-year term, a fixed interest rate of 8.25% per annum, with maturity of June 1, 2017. No payments were required through December 31, 2014 with accrued interest capitalized into the principal balance. Thereafter, interest was to be paid quarterly. As part of the agreement, the Company received a warrant, exercisable for up to ten years, to purchase 370,370 common units of PharmaCore at an exercise price of $0.54 per unit. During the year ended December 31, 2015, the Company recorded interest income of $0.4 million related to this financing. This receivable balance was not contributed to the Company as part of the Reorganization Transactions and, as such, no interest income was recognized during the year ended December 31, 2017 or 2016.

During the year ended December 31, 2015, the Company recognized bad debt expense of $0.4 million for this Note Agreement due to the uncertainty of the receivable's collectability.

MacAndrews & Forbes Incorporated

Subsequent to the Reorganization Transactions (Note 1) subsidiaries of MacAndrews & Forbes Incorporated (collectively "MacAndrews") indirectly control 23,084,267 shares of Class B Common Stock. Further, as of December 31, 2017, MacAndrews holds 2,615,666 shares of the Company's Class A Common Stock. As a result, MacAndrews' holdings represent approximately 78.3% of the combined voting power of the Company's outstanding common stock.

The Company has entered into several agreements with MacAndrews or its affiliates as part of the Reorganization Transactions as further detailed below and in Notes 1 and 9.

Equity Financing

In December 2017, the Company entered into the Letter Agreement with MacAndrews. Under the Letter Agreement, until December 5, 2018, the Company has the right to sell to MacAndrews shares of its Class A Common Stock at a price equal to $4.38 per share, and MacAndrews has the right (exercisable up to three times) to require the Company to sell to it shares of Class A Common Stock at the same price. An aggregate of $10.0 million worth of Class A Common Stock may be sold under the Letter Agreement (whether at the Company's or MacAndrews' option). In addition, in connection with the Letter Agreement, the Company also issued MacAndrews warrants to purchase 198,267 shares of the Company's Class A Common Stock at a price of $5.04 per share, exercisable until December 5, 2024.

Exchange Agreement

Pursuant to the terms of the Exchange Agreement, but subject to the Amended and Restated LLC Agreement of vTv Therapeutics LLC, the vTv Units (along with a corresponding number of shares of the Class B Common Stock) are exchangeable for (i) shares of the Class A Common Stock on a one-for-one basis or (ii) cash (based on the fair market value of the Company's Class A Common Stock as determined pursuant to the Exchange Agreement), at the Company's option (as the managing member of vTv Therapeutics LLC), subject to customary conversion rate adjustments for stock splits, stock dividends and reclassifications. Any decision to require an exchange for cash rather than shares of Class A Common Stock will ultimately be determined by the entire Board of Directors. As of December 31, 2017, MacAndrews has not exchanged any shares under the provisions of this agreement.

Tax Receivable Agreement

The Tax Receivable Agreement among the Company, M&F and M&F TTP Holdings LLC provides for the payment by the Company to M&F (or certain of its transferees or other assignees) of 85% of the amount of cash savings, if any, in U.S. federal, state and local income tax or franchise tax that the Company actually realizes (or, in some circumstances, the Company is deemed to realize) as a result of (a) the exchange of Class B Common Stock, together with the corresponding number of vTv Units, for shares of the Company's Class A Common Stock (or for cash), (b) tax benefits related to imputed interest deemed to be paid by the Company as a result of the Tax Receivable Agreement and (c) certain tax benefits attributable to payments under the Tax Receivable Agreement. As no shares have been exchanged by MacAndrews pursuant to the Exchange Agreement (discussed above), the Company has not recognized any liability nor has it made any payments pursuant to the Tax Receivable Agreement as of December 31, 2017.

Investor Rights Agreement

The Company is party to the Investor Rights Agreement with M&F, as a successor in interest to vTv Therapeutics Holdings. The Investor Rights Agreement provides M&F with certain demand, shelf and piggyback registration rights with respect to its shares of Class A Common Stock and also provides M&F with certain governance rights, depending on the size of its holdings of Class A Common Stock. Under the Investor Rights Agreement, M&F was initially entitled to nominate a majority of the members of the Board of Directors and designate the members of the committees of the Board of Directors.

Letter Agreement for Reimbursement of Fees and Expenses

The Company entered into an agreement with MacAndrews & Forbes Group LLC ("M&F Group") in which it agreed to reimburse M&F Group or its affiliates for certain out of pocket fees and expenses advanced by M&F Group in connection with the IPO. During the year ended December 31, 2015, the Company remitted payments to M&F Group or its affiliates of $1.3 million for such costs.

Note 12: Employee Benefit Plan

The Company has a 401(k) retirement plan in which all of its full-time employees are eligible to participate. The plan provides for the Company to make discretionary 50% matching contributions up to a maximum of 6% of employees' eligible compensation. The Company contributed $0.1 million, $0.2 million and $0.1 million to the plan for the years ended December 31, 2017, 2016 and 2015, respectively.

Note 13: Income Taxes

From August 1, 2015, vTv Therapeutics Inc. has been subject to U.S. federal income taxes as well as state taxes. Prior to July 30, 2015, TTP and HPP were taxed as partnerships and all their income and deductions flowed through and were subject to tax at the partner level. The Company recorded an income tax provision of $0.8 million for the year ended December 31, 2017 representing

foreign withholding taxes incurred in connection with the Huadong License Agreement. The Company did not record an income tax provision for the years ended December 31, 2016 and 2015.

As discussed in Note 1, the Company is party to a tax receivable agreement with a related party which provides for the payment by the Company to M&F (or certain of its transferees or other assignees) of 85% of the amount of cash savings, if any, in U.S. federal, state and local income tax or franchise tax that the Company actually realizes (or, in some circumstances, the Company is deemed to realize) as a result of certain transactions. As no transactions have occurred which would trigger a liability under this agreement, the Company has not recognized any liability related to this agreement as of December 31, 2017.

On December 22, 2017, the US government enacted comprehensive tax reform commonly referred to as the Tax Cuts and Jobs Act ("TCJA"). Under ASC 740, the effects of changes in tax rates and laws are recognized in the period which the new legislation is enacted. Among other things, the TCJA (1) reduces the US statutory corporate income tax rate from 35% to 21% effective January 1, 2018, (2) eliminates the corporate alternative minimum tax, (3) eliminates the Section 199 deduction, and (4) changes rules related to uses and limitations of net operating loss carryforwards beginning after December 31, 2017.

The SEC staff issued Staff Accounting Bulletin No. 118 ("SAB 118"), which provides guidance on accounting for the tax effects of TCJA. SAB 118 provides a measurement period that should not extend beyond one year from the TCJA enactment date for companies to complete the accounting under ASC 740. To the extent that a company's accounting for certain income tax effects of the TCJA is incomplete but is able to determine a reasonable estimate, it must record a provisional estimate in the financial statements.

The TCJA reduces the corporate tax rate to 21% effective January 1, 2018. We have recorded a provisional decrease in our deferred tax assets of $5.8 million with a corresponding adjustment to the valuation allowance for the year ended December 31, 2017. While we are able to make a reasonable estimate of the impact of the reduction in the corporate rate, it may be affected by other analyses related to the TCJA. The Company will continue to assess and refine, as necessary, its accounting for the TCJA as additional guidance and interpretation is provided.

A reconciliation of the U.S. statutory income tax rate to the Company's effective tax rate is as follows (in thousands):

	December 31,		
	2017	2016	2015
U.S. statutory tax benefit	$ (18,846)	$ (19,374)	$ (14,387)
Partnership income (federal) not subject to tax to the Company	13,475	13,651	12,502
Foreign withholding tax	800	—	—
State taxes (net of federal benefit)	55	—	—
Impact of the Tax Act	5,847	—	—
Change in valuation allowance	(531)	5,723	1,885
Provision for income taxes	$ 800	$ —	$ —
Effective income tax rate	-1.5%	0.0%	0.0%

Significant components of our net deferred tax assets/(liabilities) are as follows (in thousands):

	December 31,	
	2017	2016
Deferred tax assets:		
Net operating loss carryforwards	$ 9,023	$ 8,189
Share-based compensation	—	3
Investment in partnerships	470	1,844
Charitable contributions	11	—
Total deferred tax assets	9,504	10,036
Valuation allowance	(9,504)	(10,036)
Net deferred tax assets	$ —	$ —

The Company assesses the available positive evidence and negative evidence to estimate whether sufficient future taxable income will be generated to permit use of existing deferred tax assets. A significant piece of objective negative evidence evaluated was the Company's recent operating losses. Such objective evidence limits the ability to consider other subjective evidence, such as forecasts of profitability. On the basis of this evaluation, the Company concluded that its deferred tax assets were not realizable on a more-likely-than-not basis and recorded a full valuation allowance. During the year ended December 31, 2017, the Company's valuation allowance decreased by $0.5 million.

The Company has federal net operating loss carryforwards of $40.2 million that will be available to offset future taxable income. Such carryforwards expire in 2035 and 2037 if not utilized.

The Company applies applicable authoritative guidance which prescribes a comprehensive model for the manner in which a company should recognize, measure, present and disclose in its financial statements all material uncertain tax positions that the Company has taken or expects to take on a tax return. As of December 31, 2017, the Company had no uncertain tax positions. There are no uncertain tax positions for which it is reasonably possible that the total amount of unrecognized tax benefits will significantly increase or decrease within twelve months of December 31, 2017.

The Company files U.S. federal, Connecticut, New York, North Carolina and Virginia tax returns. The only open tax years for U.S. federal and the aforementioned states are December 31, 2017, 2016 and 2015.

Note 14: Net Loss per Share

Basic loss per share is computed by dividing net loss attributable to vTv Therapeutics Inc. by the weighted-average number of shares of Class A Common Stock outstanding during the period. Diluted loss per share is computed giving effect to all potentially dilutive shares. Diluted loss per share for the years ended December 31, 2017, 2016 and 2015 is the same as basic loss per share as the inclusion of potentially issuable shares would be antidilutive. Loss per share for the year ended December 31, 2015 includes the losses recognized both prior and subsequent to the IPO and Reorganization Transactions.

A reconciliation of the numerator and denominator used in the calculation of basic and diluted net loss per share of Class A Common Stock is as follows (amounts in thousands, except per share amounts):

	Year Ended December 31,		
	2017	2016	2015
Numerator:			
Net loss	$ (54,647)	$ (55,353)	$ (41,107)
Less: Net loss attributable to noncontrolling interests	(38,503)	(39,001)	(13,609)
Net loss attributable to vTv Therapeutics Inc., basic and diluted	$ (16,144)	$ (16,352)	$ (27,498)
Denominator:			
Weighted-average vTv Therapeutics Inc. Class A Common Stock, basic and diluted	9,693,254	9,545,527	8,276,520
Net loss per share of vTv Therapeutics Inc. Class A Common Stock, basic and diluted	$ (1.67)	$ (1.71)	$ (3.32)

Potentially dilutive securities not included in the calculation of dilutive net loss per share are as follows:

	Year Ended December 31,		
	2017	2016	2015
Class B Common Stock (1)	23,119,246	23,119,246	23,655,814
Common stock options granted under the Plan	1,960,732	1,096,101	971,934
Restricted stock units	35,000	—	—
Common stock options granted under the Letter Agreement	2,283,105	—	—
Common stock warrants	388,853	152,580	—
Total	27,786,936	24,367,927	24,627,748

(1) Shares of Class B Common Stock do not share in the Company's earnings and are not participating securities. Accordingly, separate presentation of loss per share of Class B Common Stock under the two-class method has not been provided. Each share of Class B Common Stock (together with a corresponding vTv Unit) is exchangeable for one share of Class A Common Stock.

Note 15: Quarterly Financial Data (Unaudited)

The following interim financial information presents our 2017 and 2016 results of operations on a quarterly basis (in thousands, except per share amounts):

	2017			
	March 31	June 30	September 30	December 31
Revenues	$ 30	$ 13	$ 15	$ 233
Operating loss	(13,754)	(12,615)	(11,541)	(12,772)
Net loss before noncontrolling interest	(14,286)	(13,414)	(12,355)	(14,592)
Net loss attributable to vTv Therapeutics Inc.	(4,220)	(3,963)	(3,650)	(4,311)
Net loss per share of vTv Therapeutics Inc. Class A Common Stock, basic and diluted	$ (0.44)	$ (0.41)	$ (0.38)	$ (0.44)

	2016			
	March 31	June 30	September 30	December 31
Revenues	$ 376	$ 182	$ 38	$ 38
Operating loss	(13,540)	(14,639)	(13,528)	(13,313)
Net loss before noncontrolling interest	(13,520)	(14,617)	(13,505)	(13,711)
Net loss attributable to vTv Therapeutics Inc.	(3,852)	(4,457)	(3,993)	(4,050)
Net loss per share of vTv Therapeutics Inc. Class A Common Stock, basic and diluted	$ (0.42)	$ (0.47)	$ (0.41)	$ (0.42)

Note 16: Predecessor Financial Arrangements

The Reorganization Transactions discussed in Note 1 resulted in certain assets and liabilities of the Predecessors not being contributed to or assumed by the Company. As such, subsequent to the Reorganization Transactions, certain financial instruments and their related interest or fair value adjustments were no longer reflected within the Company's Consolidated Financial Statements. Such financial instruments included the following:

Note receivable from Former Officer - On March 30, 2007, TransTech Pharma, Inc. ("TTP Inc.") entered into a promissory note (the "2007 Note") with a former officer and director ("the Former Officer"), pursuant to which TTP Inc. loaned $4.8 million to the Former Officer.

Promissory note on land - In June 2008, TTP Inc. entered into a promissory note with a financial institution secured by a deed of trust on land purchased in 2008.

Distribution payable - On December 30, 2014, the boards of directors of TTP and HPP authorized a repurchase of units from the Former Officer and certain entities related to the officer (collectively with the Former Officer, the "Former Officer and Related Entities") of TTP. The terms of the unit repurchase are stipulated in a Letter Agreement (the "Former Officer Agreement") with the Former Officer and Related Entities. The Former Officer Agreement stipulated that these entities would repurchase all of the TTP and HPP issued and outstanding units owned by the Former Officer and Related Entities, including any warrants and options to purchase common units (collectively, the "Repurchased Units"). In exchange for the Repurchased Units, under the Former Officer Agreement, TTP and HPP agreed to make periodic cash payments to the Former Officer and Related Entities totaling $7.5 million between December 30, 2014 and September 30, 2017. Payments consisted of $2.5 million paid at closing of the agreement on December 30, 2014 and $5.0 million to be paid in eight equal quarterly installments beginning December 31, 2015.

Uncommitted advance agreement - On March 28, 2014, TTP, HPP and M&F agreed to exchange all $116.2 million of outstanding principal and interest due to M&F under a Note and Equity Issuance Agreement (including amounts advanced under the initial agreement plus the promissory notes issued in 2013 and amounts advanced following the December 24, 2013 amendment) for 292,722,844 Series F redeemable convertible preferred units of TTP and 155,219,376 Series B redeemable convertible preferred units of HPP. Concurrently on March 28, 2014, TTP and HPP entered into an Uncommitted Advance Agreement with M&F and the Former Officer. As of December 30, 2014, the Former Officer was no longer party to this agreement.

Contingent distribution - On December 31, 2014, TTP transferred 100% of its ownership interests in HPCTC to the Former Officer and agreed to make future distributions to the Former Officer (the "Contingent Distributions").

Perpetual securities - On March 28, 2014, TTP entered into a reaffirmation and pledge agreement ("Pledge Agreement") with the Former Officer and Related Entities. Pursuant to the Pledge Agreement, the Former Officer granted a security interest to TTP

in the Pledged Units to secure the Former Officer's obligations to TTP under the 2007 Note and under the Pledge Agreement. On December 30, 2014, the Pledged Units were exchanged for TTP Perpetual Securities in the principal amount of approximately $6.0 million and HPP Perpetual Securities in the principal amount of approximately $0.5 million (the "Perpetual Securities"). The Perpetual Securities were initially recorded at their initial fair value of $6.6 million. The increase in the fair value of the perpetual securities during the year ended December 31, 2015, prior to the Reorganization Transactions was $0.1 million and is reflected in other income, net in the Consolidated Statements of Operations.

Release agreement - On August 28, 2015, vTv Therapeutics Holdings, vTvx Holdings I, vTvx Holdings II, MacAndrews & Forbes Incorporated and M&F entered into a release agreement (the "Release Agreement") with the Former Officer and Related Entities to settle certain obligations, including the obligation to pay the Contingent Distributions, under the Former Officer Agreement. Under the Release Agreement, vTv Therapeutics Holdings agreed to transfer 1,344,186 shares of Class B Common Stock and the same number of corresponding vTv Units to the Former Officer. Under the Release Agreement and the Former Officer Agreement, the 2007 Note owed by the Former Officer to TTP was also deemed discharged and canceled and the perpetual securities of vTvx Holdings I and vTvx Holdings II having principal amounts of $6.0 million and $0.5 million, respectively, held by the Former Officer, were repurchased by vTvx Holdings I and vTvx Holdings II in exchange therefor. On the same date, under the Exchange Agreement, the Former Officer exchanged those shares of Class B Common Stock and vTv Units for 1,344,186 shares of Class A Common Stock.

Note 17: Fair Value of Financial Instruments

The carrying amount of certain of the Company's financial instruments, including cash and cash equivalents, net accounts receivable, accounts payable and other accrued liabilities approximate fair value due to their short-term nature.

The fair value of the Company's investment in Reneo at December 21, 2017 was estimated based on the relative value paid by third parties for their equity interest in Reneo through recent capital raising events. The inputs to the calculation of fair value are considered level 3 inputs within the fair value hierarchy.

The fair value of the Company's notes payable is considered to approximate its carrying value because it bears interest at a variable interest rate.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

The Company evaluates its financial assets and liabilities subject to fair value measurements on a recurring basis to determine the appropriate level in which to classify them for each reporting period. This determination requires significant judgments. The following table summarizes the conclusions reached regarding fair value measurements as of December 31, 2017 and 2016 (in thousands):

	Balance at December 31, 2017	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Warrant liability, related party (1)	$ 492	$ —	$ —	$ 492
Total	$ 492	$ —	$ —	$ 492

	Balance at December 31, 2016	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Warrant liability (2)	$ 167	$ —	$ —	$ 167
Total	$ 167	$ —	$ —	$ 167

(1) Fair value determined using an option pricing model based on the Company's current capitalization. Expected volatility is based on a portfolio of selected stocks of companies believed to have market and economic characteristics similar to its own. The risk-free rate is based on the yield of U.S. government securities with the same term as the option as of the valuation date.

(2) Fair value determined using the Black-Scholes option pricing model. Expected volatility is based on a portfolio of selected stocks of companies believed to have market and economic characteristics similar to its own. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of valuation.

	Changes in Level 3 Instruments for the years ended December 31, 2017, 2016 and 2015						
	Balance at January 1	Net Change in fair value included in earnings	Net change in fair value (1)	Purchases / Issuance	Sales / Repurchases	Effect of Reorganization Transaction	Balance at December 31
2017							
Warrant liability	$ 167	$ —	$ —	$ —	$ (167)	$ —	$ —
Warrant liability, related party	—	190	—	302	—	—	492
Total	$ 167	$ 190	$ —	$ 302	$ (167)	$ —	$ 492
2016							
Warrant liability	$ —	$ —	$ —	$ 167	$ —	$ —	$ 167
Total	$ —	$ —	$ —	$ 167	$ —	$ —	$ 167
2015							
TTP Redeemable preferred units	$ 412,085	$ —	$ 66,379	$ —	$ —	$ (478,464)	$ —
HPP Redeemable preferred units	—	—	—	—	—	—	—
Consideration payable	4,897	—	—	—	—	(4,897)	—
Note payable	6,594	115	—	—	—	(6,709)	—
Contingent distribution	26,359	—	695	—	—	(27,054)	—
Total	$ 449,935	$ 115	$ 67,074	$ —	$ —	$ (517,124)	$ —

(1) The above represents the change in the fair value of the Company's redeemable preferred units. See the Consolidated Statements of Changes in Redeemable Convertible Units, Redeemable Non-Controlling Interest, Stockholders' and Members' Deficit for additional changes in the carrying value of the Company's redeemable preferred units.

There were no transfers into or out of level 3 instruments and/or between level 1 and level 2 instruments during the years ended December 31, 2017, 2016 or 2015.

The fair value of the warrant liability related to the Warrants was determined using the Black-Scholes option pricing model. Expected volatility is based on a portfolio of selected stocks of companies believed to have market and economic characteristics similar to its own. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of valuation. Significant inputs utilized in the valuation of the Warrants as of December 31, 2016 were:

Annual volatility	83.28 %
Annual risk-free rate	2.30 %

The fair value of the Consideration Warrants was determined using an option pricing model based on the Company's current capitalization. Expected volatility is based on a portfolio of selected stocks of companies believed to have market and economic characteristics similar to its own. The risk-free rate is based on the yield of U.S. government securities with the same term as the option as of the valuation date. Significant inputs utilized in the valuation of the Consideration Warrants as of December 31, 2017 were:

Annual volatility	90.00 %
Annual risk-free rate	2.40 %

Changes in the unobservable inputs noted above would impact the amount of the liability for the Warrants and Consideration Warrants. For the Company's warrants, increases (decreases) in the estimates of the Company's annual volatility would increase (decrease) the liability and an increase (decrease) in the annual risk-free rate would increase (decrease) the liability.

THE SECURITIES EVIDENCED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR ANY OTHER SECURITIES LAWS, AND SUCH SECURITIES MAY NOT BE SOLD, PLEDGED, HYPOTHECATED OR OTHERWISE TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION UNDER SAID ACT AND LAWS OR AN EXEMPTION THEREFROM.

VTV THERAPEUTICS INC.

COMMON STOCK PURCHASE WARRANT

Issuance; Certain Definitions

.

1.1 For good and valuable consideration, the receipt of which is hereby acknowledged by **VTV THERAPEUTICS INC.**, a Delaware corporation (the "Company"), MacAndrews & Forbes Group LLC, a Delaware limited liability company, or its registered assigns, is hereby granted the right, subject to the terms and provisions of this warrant (the "Warrant"), to purchase at any time until 5:00 P.M., New York City time, on the Expiration Date, 198,267 fully paid and nonassessable shares of Common Stock, at an initial exercise price per share (the "Exercise Price") of $5.04 per share, subject to adjustment as set forth herein. The shares of Common Stock issued upon exercise of this Warrant, as adjusted from time to time pursuant to Section 6 hereof, are referred to as "Warrant Shares." This Warrant is being issued pursuant to the terms and conditions of the Commitment Letter.

1.2 As used in this Warrant, the following terms have the respective meanings set forth below:

"Actual Minimum" has the meaning assigned to it in Section 11.2 hereof.

"Affiliate" means, with respect to any specified Person, (i) any other Person 50% or more of whose Outstanding voting securities are directly or indirectly owned, controlled or held with the power to vote by such specified Person or (ii) any other Person directly or indirectly controlling, controlled by or under direct or indirect common control with such specified Person. For purposes of this definition, the term "control" means the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of a Person by virtue of ownership of voting securities, by contract or otherwise.

"Appraisal Procedure" means the following procedure to determine the fair market value, as to any security, for purposes of the definition of "Fair Market Value" or the fair market value, as to any other property (in either case, the "Valuation Amount"). The Valuation Amount shall be determined in good faith jointly by the Board of Directors and the Holder; provided, however, that if such parties are not able to agree on the Valuation Amount within a reasonable period of time (not to exceed 20 Business Days) the Valuation Amount shall be determined by an investment banking firm of national reputation, which firm shall be reasonably acceptable to the Board of Directors

and the Holder. If the Board of Directors and the Holder are unable to agree upon an acceptable investment banking firm within 10 days after the date either party proposed that one be selected, the investment banking firm will be selected by an arbitrator located in New York City, New York, selected by the American Arbitration Association (or if such organization ceases to exist, the arbitrator shall be chosen by a court of competent jurisdiction). The arbitrator shall select the investment banking firm (within 10 days of his appointment) from a list, jointly prepared by the Board of Directors and the Holder, of not more than six investment banking firms of national reputation in the United States, of which no more than three may be named by the Board of Directors and no more than three may be named by the Holder. The arbitrator may consider, within the 10-day period allotted, arguments from the parties regarding which investment banking firm to choose, but the selection by the arbitrator shall be made in its sole discretion from the list of six. The Board of Directors and the Holder shall submit their respective valuations and other relevant data to the investment banking firm, and the investment banking firm shall, within 30 days of its appointment, make its own determination of the Valuation Amount. The determination of the final Valuation Amount by such investment banking firm shall be final and binding upon the parties. The Company shall pay all of the fees and expenses of the investment banking firm and arbitrator (if any) used to determine the Valuation Amount. If required by any such investment banking firm or arbitrator, the Company shall execute a retainer and engagement letter containing reasonable terms and conditions, including, without limitation, customary provisions concerning the rights of indemnification and contribution by the Company in favor of such investment banking firm or arbitrator and its officers, directors, partners, employees, agents and Affiliates.

"Board of Directors" means the board of directors of the Company.

"Business Day" means any day that is not a Saturday or Sunday or a day on which banks are required or permitted to be closed in the State of New York.

"Commitment Letter" means the Commitment Letter by and between the Company and MacAndrews & Forbes Incorporated, dated December 5, 2017.

"Common Stock" means the Class A common stock of the Company, par value $0.01 per share, as constituted on the Issue Date, and any capital stock into which such Common Stock may thereafter be changed, and shall also include (i) capital stock of the Company of any other class (regardless of how denominated) issued to the holders of shares of any Common Stock upon any reclassification thereof which is not preferred as to dividends or liquidation over any other class of stock of the Company and which is not subject to redemption and (ii) shares of common stock of any successor or acquiring corporation received by or distributed to the holders of Common Stock of the Company in the circumstances contemplated by Section 6.5 hereof.

"Company" has the meaning assigned to it in Section 1.1 hereof.

"Credit Agreement" means the Venture Loan and Security Agreement, dated as of October 28, 2016, among Silicon Valley Bank, Horizon Technology Finance Corporation, vTv Therapeutics LLC and the Company.

"Excluded Stock" has the meaning assigned to it in Section 6.10 hereof.

"Exercise Date" has the meaning assigned to it Section 2.1(a) hereof.

"Exercise Price" means, in respect of a share of Common Stock at any date herein specified, the initial Exercise Price set forth in Section 1.1 hereof, as adjusted from time to time pursuant to Section 6 hereof.

"Expiration Date" means December 5, 2024.

"Fair Market Value" means, as to any security, the Twenty Day Average of the volume weighted average prices of such security on the principal securities exchange on which such security may at the time be listed, or, if there have been no sales on any such exchange on any day, the average of the highest bid and lowest asked prices on all such exchanges at the end of such day, or, if on any day such security is not so listed, the average of the highest bid and lowest asked prices on such day in the domestic over-the-counter market as reported by the National Quotation Bureau, Incorporated, or any similar or successor organization (and in each such case excluding any trades that are not bona fide, arm's length transactions). If at any time such security is not listed on any domestic securities exchange or quoted on the domestic over-the-counter market, the "Fair Market Value" of such security shall be the fair market value thereof as determined in accordance with the Appraisal Procedure, using any appropriate valuation method, assuming an arms-length sale to an independent party.

"Form of Assignment" has the meaning assigned to it in Section 4.1 hereof.

"Governmental Entity" means any national, federal, state, municipal, local, territorial, foreign or other government or any department, commission, board, bureau, agency, regulatory authority or instrumentality thereof, or any court, judicial, administrative or arbitral body or public or private tribunal.

"Holder" means initially, MacAndrews & Forbes Group LLC and its successors and assigns, in accordance with the terms of this Warrant.

"Investor Rights Agreement" means the Investor Rights Agreement by and between the Company and M&F TTP Holdings Two LLC, as successor in interest to vTv Therapeutics Holdings LLC, dated July 29, 2015, as amended from time to time.

"Issuable Minimum" has the meaning assigned to it in Section 11.2 hereof.

"Issue Date" means December 5, 2017.

"Lien" means any mortgage or deed of trust, pledge, hypothecation, assignment, deposit arrangement, lien, charge, claim, security interest, easement or encumbrance, or preference, priority or other security agreement or preferential arrangement of any kind or nature whatsoever (including, without limitation, any lease or

title retention agreement, any financing lease having substantially the same economic effect as any of the foregoing, and the filing of, or agreement to give, any financing statement perfecting a security interest under the Uniform Commercial Code or comparable law of any jurisdiction).

"Notice of Exercise" has the meaning assigned to it in Section 2.1(a) hereof.

"Outstanding" means, when used with reference to Common Stock, at any date as of which the number of shares thereof is to be determined, all issued shares of Common Stock, except shares then owned or held by or for the account of the Company or any Subsidiary, and shall include all shares issuable in respect of Outstanding scrip or any certificates representing fractional interests in shares of Common Stock.

"Permitted Transferee" means (i) any Affiliate of the Holder, including, without limitation, directors, executives and officers of the Holder, (ii) any member of the family of any Affiliate of the Holder, including any such Person's spouse and descendants and any trust, partnership, corporation, limited liability company or other entity for the benefit of such spouse and/or descendants to whom or which any of the Securities have been transferred by any such Person for estate or tax planning purposes, (iii) any charity, foundation or trust to which the Securities have been transferred by the Holder or any Person or entity described in clause (i) or (ii) above for estate or tax planning or charitable purposes, or (iv) the beneficiary of any bona fide pledge by the Holder of any of the Securities.

"Person" means any individual, sole proprietorship, partnership, limited liability company, joint venture, trust, incorporated organization, association, corporation, institution, Governmental Entity or any other entity.

"Reserved Spin Off Securities" has the meaning assigned to it in Section 6.2 hereof.

"SEC" means the U.S. Securities and Exchange Commission or any other federal agency then administering the Securities Act and other federal securities laws.

"Securities Act" means the Securities Act of 1933, as amended, and the rules and regulations of the SEC thereunder, all as the same shall be in effect at the time.

"Spin Off Securities" has the meaning assigned to it in Section 6.2 hereof.

"Subsidiary" means, with respect to any Person, any corporation, association trust, limited liability company, partnership, joint venture or other business association or entity (i) at least 50% of the Outstanding voting securities of which are at the time owned or controlled directly or indirectly by such Person or (ii) with respect to which the Company possesses, directly or indirectly, the power to direct or cause the direction of the affairs or management of such Person.

"Transfer" means any disposition of any Warrant or Warrant Shares or of any interest therein, which would constitute a "sale" thereof within the meaning of the Securities Act.

"Twenty Day Average" means, with respect to any prices and in connection with the calculation of Fair Market Value, the average of such prices over the 20 Business Days ending on the Business Day immediately prior to the day as of which Fair Market Value is being determined.

"Warrant Price" means an amount equal to (i) the number of Warrant Shares being purchased upon exercise of this Warrant pursuant to Sections 1 and 2 hereof, multiplied by (ii) the Exercise Price.

"Warrant Shares" has the meaning assigned to it in Section 1.1 hereof.

Exercise of Warrant

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2.1 Manner of Exercise.

(a) This Warrant is exercisable in whole or in part at any time and from time to time on any Business Day from and after the Issue Date and at any time until 5:00 P.M., New York time, on the Expiration Date. Such exercise shall be effectuated by submitting to the Company (i) a completed and duly executed written notice of the Holder's election to exercise this Warrant (a "Notice of Exercise") (substantially in the form attached to this Warrant as Annex A) indicating the number of Warrant Shares then being purchased pursuant to such exercise and the manner of payment of the Warrant Price, (ii) this Warrant and (iii) payment to the Company of the Warrant Price. The date on which such delivery and payment shall have taken place being sometimes referred to as the "Exercise Date."

(b) Upon receipt by the Company of such Notice of Exercise, surrender of this Warrant and payment of the Warrant Price (in accordance with Section 2.1(c) hereof), the Holder shall be entitled to receive as promptly as practicable, and in any event within five Business Days thereafter, a certificate or certificates for Warrant Shares so purchased in such denomination or denominations as the exercising Holder shall reasonably request in the Notice of Exercise, registered in the name of the Holder or, subject to Section 4 hereof, such other name as shall be designated in the Notice of Exercise, together with cash in lieu of any fraction of a share, as provided in Section 2.3 hereof. If this Warrant shall have been exercised in part, the Company shall, at the time of delivery of the certificate or certificates representing the Warrant Shares being issued, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the remaining Warrant Shares underlying this Warrant. Such new Warrant shall in all other respects be identical to this Warrant. This Warrant shall be deemed to have been exercised and such certificate or certificates of Warrant Shares shall be deemed to have been issued, and the Holder or any other Person so designated to be named therein shall be deemed to have become a holder of record of such Warrant Shares for all purposes, as of the Exercise Date. It is understood that where this Warrant requires the

delivery of certificates for Warrant Shares, other customary means (including via book-entry through a securities depository or direct registration or account entries by a registrar or transfer agent) used by the Company for delivery of shares of Common Stock may be used.

(c) Payment of the Warrant Price shall be made at the option of the Holder by one or more of the following methods: (i) by delivery of a certified or official bank check or by wire transfer of immediately available funds in the amount of such Warrant Price payable to the order of the Company, (ii) by instructing the Company to withhold a number of Warrant Shares then issuable upon exercise of this Warrant with an aggregate Fair Market Value equal to such Warrant Price, (iii) by surrendering to the Company shares of Common Stock previously acquired by the Holder with an aggregate Fair Market Value equal to such Warrant Price, or (iv) any combination of the foregoing. In the event of any withholding of Warrant Shares or surrender of Common Stock pursuant to clause (ii), (iii) or (iv) above where the number of shares whose Fair Market Value is equal to the Warrant Price is not a whole number, the number of shares withheld by or surrendered to the Company shall be rounded up to the nearest whole share and the Company shall make a cash payment to the Holder based on the incremental fraction of a share being so withheld by or surrendered to the Company in an amount determined in accordance with Section 2.3 hereof.

2.2 Payment of Taxes. All Warrant Shares issuable upon the exercise of this Warrant pursuant to the terms hereof shall be validly issued, fully paid and nonassessable, issued without violation of any preemptive or similar rights of any stockholder of the Company and free and clear of all Liens. The Company shall pay all expenses in connection with, and all taxes and other governmental charges that may be imposed with respect to, the issue or delivery thereof. The Company shall not, however, be required to pay any tax or governmental charge which may be issuable upon exercise of this Warrant payable in respect of any Transfer involved in the issue and delivery of Warrant Shares in a name other than that of the holder of the Warrant to be exercised, and no such issue or delivery shall be made unless and until the Person requesting such issue has paid to the Company the amount of any such tax, or has established to the satisfaction of the Company that such tax has been paid.

2.3 Fractional Shares. The Company shall not be required to issue a fractional share of Common Stock upon exercise of the Warrant. As to any fraction of a share that the Holder, the rights under which are exercised in the same transaction, would otherwise be entitled to purchase upon such exercise, the Company shall pay to the Holder an amount in cash equal to such fraction multiplied by the Fair Market Value of one share of Common Stock on the Exercise Date.

Reservation and Authorization of Common Stock

. The Company shall at all times during the term of this Warrant reserve for issuance upon exercise of the then outstanding balance of this Warrant such number of shares of its Common Stock as shall be required for issuance of the Warrant Shares. Before taking any action that would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or

exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction over such action. If any Warrant Shares required to be reserved for issuance upon exercise of this Warrant require registration or qualification with any Governmental Entity (other than under the Securities Act or any state securities law) before such shares may be so issued, the Company will in good faith and as expeditiously as possible and at its expense endeavor to cause such shares to be duly registered. Before taking any action that would cause an adjustment reducing the Exercise Price below the then par value (if any) of the shares of Common Stock deliverable upon exercise of the Warrant or that would cause the number of Warrant Shares issuable upon exercise of the Warrant to exceed (when taken together with all other Outstanding shares of Common Stock) the number Warrant Shares that the Company is authorized to issue, the Company will take any corporate action that, in the opinion of its counsel, is necessary in order that the Company may validly and legally issue the full number of fully paid and non-assessable shares of Common Stock issuable upon exercise of the Warrant at such adjusted exercise price.

Transfer, Assignment, Division, Combination, Mutilation or Loss of Warrant

.

4.1 Transfer or Assignment of Warrant. Subject to the limitations set forth in Section 7 hereof, upon (a) surrender of this Warrant to the Company accompanied by a Form of Assignment annexed hereto as Annex B (each, a "Form of Assignment") duly executed and funds sufficient to pay any applicable transfer tax, and (b) delivery of an opinion of counsel to the Holder reasonably satisfactory to the Company to the effect that, in the opinion of such counsel, the transfer is exempt from the registration requirements of the Securities Act (provided that no such opinion shall be required in the event of a Transfer to a Permitted Transferee), the Company shall, without charge, execute and deliver a new Warrant registered in the name of the assignee named in the Form of Assignment at the address, and evidencing the right to purchase the shares of Common Stock, specified in the Form of Assignment, and the Warrant represented by this Warrant shall promptly be cancelled.

4.2 Mutilation or Loss of Warrant. Upon receipt by the Company of evidence satisfactory to it of the loss, theft, destruction or mutilation of this Warrant, and (in the case of loss, theft or destruction) receipt of reasonably satisfactory indemnification, and (in the case of mutilation) upon surrender and cancellation of this Warrant, the Company will execute and deliver a new Warrant of like tenor and date and any such lost, stolen, destroyed or mutilated Warrant shall thereupon become void.

4.3 Division and Combination. Subject to compliance with the applicable provisions of this Warrant, this Warrant may be divided or combined with other Warrants upon presentation hereof to the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with the applicable provisions of this Warrant as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in

exchange for the Warrant or Warrants to be divided or combined in accordance with such notice.

4.4 Expenses. The Company shall prepare, issue and deliver at its own expense any new Warrant required to be issued hereunder.

4.5 Maintenance of Books. The Company agrees to maintain books for the registration and transfer of the Warrant.

Rights of the Holder

. The Holder shall not, by virtue hereof, be entitled to any rights of a stockholder in the Company, either at law or equity, and the rights of the Holder are limited to those expressed in this Warrant and are not enforceable against the Company except to the extent set forth herein.

Protection Against Dilution and Other Adjustments

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6.1 Adjustment of Number of Warrant Shares. Upon any adjustment of the Exercise Price as provided in Sections 6.3 through 6.6 hereof, the Holders of this Warrant shall thereafter be entitled to purchase upon the exercise hereof, at the Exercise Price resulting from such adjustment, the number of Warrant Shares (calculated to the nearest 1/100th of a share) obtained by multiplying the Exercise Price in effect immediately prior to such adjustment by the number of Warrant Shares issuable on the exercise hereof immediately prior to such adjustment and dividing the product thereof by the Exercise Price resulting from such adjustment.

6.2 Adjustment Upon Spin Off. If, at any time or from time to time after the Issue Date, the Company shall spin off or otherwise divest itself of a part of its business or operations or dispose of all or of a part of its assets in a transaction in which the Company does not receive compensation for such business, operations or assets, but causes securities of another entity that are held by the Company (the "Spin Off Securities") to be issued to security holders of the Company, then the Company shall cause (i) to be reserved a number of Spin Off Securities (the "Reserved Spin Off Securities") equal to the number of Spin Off Securities that would have been issued to the Holder had the Holder exercised this Warrant in full as of immediately prior to the record date for determining the stockholders of the Company entitled to receive such Spin Off Securities (the number of Warrant Shares as of such time being referred to herein as the "Full Exercise Amount"), and (ii) to be issued to the Holder on the exercise of this Warrant, a number of Reserved Spin Off Securities equal to (x) the Reserved Spin Off Securities multiplied by (y) a fraction, the numerator of which shall be the number of Warrant Shares being purchased by the Holder pursuant to such exercise, and the denominator of which shall be the Full Exercise Amount (which Full Exercise Amount shall be adjusted proportionally for any adjustments to the number of Warrant Shares made pursuant to Section 6.1).

6.3 Upon Stock Dividends, Subdivisions or Splits. If, at any time or from time to time after the Issue Date, the number of shares of Common Stock Outstanding is increased by a stock dividend payable in shares of Common Stock or by a

subdivision or split-up of shares of Common Stock, then, following the record date for the determination of holders of Common Stock entitled to receive such stock dividend, or to be affected by such subdivision or split-up, the Exercise Price shall be appropriately decreased by multiplying the Exercise Price by a fraction, the numerator of which is the number of shares of Common Stock Outstanding immediately prior to, and the denominator of which is the number of shares of Common Stock Outstanding immediately after, such increase in shares of Common Stock Outstanding.

6.4 Upon Combinations or Reverse Stock Splits. If, at any time or from time to time after the Issue Date, the number of shares of Common Stock Outstanding is decreased by a combination or reverse stock split of the Outstanding shares of Common Stock into a smaller number of shares of Common Stock, then, following the record date to determine shares affected by such combination or reverse stock split, the Exercise Price shall be appropriately increased by multiplying the Exercise Price by a fraction, the numerator of which is the number of shares of Common Stock Outstanding immediately prior to, and the denominator of which is the number of shares of Common Stock Outstanding immediately after, such decrease in shares of Common Stock Outstanding.

6.5 Upon Reclassifications, Reorganizations, Consolidations or Mergers. If, at any time or from time to time after the Issue Date, there is any capital reorganization of the Company, any reclassification of the stock of the Company (other than a change in par value or from par value to no par value or from no par value to par value or as a result of a stock dividend or subdivision, split-up or combination of shares), or any consolidation or merger of the Company with or into another Person (where the Company is not the surviving Person or where there is a change in or distribution with respect to the Common Stock), this Warrant shall after such reorganization, reclassification, consolidation, or merger be exercisable for the kind and number of shares of stock or other securities or property of the Company or of the successor Person resulting from such consolidation or surviving such merger, if any, to which the holder of the Warrant Shares deliverable (immediately prior to the time of such reorganization, reclassification, consolidation or merger) upon exercise of such Warrant would have been entitled upon such reorganization, reclassification, consolidation or merger. The provisions of this clause shall similarly apply to successive reorganizations, reclassifications, consolidations, or mergers. The Company shall not effect any such reorganization, reclassification, consolidation or merger unless, prior to the consummation thereof, the successor Person (if other than the Company) resulting from such reorganization, reclassification, consolidation or merger, shall assume, by written instrument, the obligation to deliver to the Holder of this Warrant such shares of stock, securities or assets, which, in accordance with the foregoing provisions, the Holder shall be entitled to receive upon such conversion.

6.6 Upon Issuance of Common Stock. If, at any time or from time to time after the Issue Date, the Company shall issue any shares of Common Stock, options to purchase or rights to subscribe for Common Stock, securities by their terms convertible into or exchangeable for Common Stock, or options to purchase or rights to subscribe for such convertible or exchangeable securities, other than Excluded Stock,

without consideration or for consideration per share less than either (x) the Exercise Price in effect immediately prior to such issuance or (y) the Fair Market Value per share of the Common Stock immediately prior to such issuance, then such Exercise Price shall forthwith be lowered to a price equal to the price obtained by multiplying:

(i) the Exercise Price in effect immediately prior to the issuance of such Common Stock, options, rights or securities by

(ii) a fraction of which (x) the numerator shall be the sum of (A) the number of shares of Common Stock Outstanding on a fully-diluted basis immediately prior to such issuance and (B) the number of additional shares of Common Stock which the aggregate consideration for the number of shares of Common Stock so offered would purchase at the greater of the Exercise Price in effect immediately prior to such issuance or the Fair Market Value per share of Common Stock and (y) the denominator shall be the number of shares of Common Stock Outstanding on a fully-diluted basis immediately after such issuance.

6.7 Provisions Applicable to Adjustments. For purposes of any adjustment of the Exercise Price pursuant to Section 6.6 hereof, the following provisions shall be applicable:

(i) In the case of the issuance of Common Stock for cash in a public offering or private placement, the consideration shall be deemed to be the amount of cash paid therefor before deducting therefrom any discounts, commissions or placement fees payable by the Company to any underwriter or placement agent in connection with the issuance and sale thereof.

(ii) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the consideration other than cash shall be deemed to be the Valuation Amount as determined in accordance with the Appraisal Procedure.

(iii) In the case of the issuance of options to purchase or rights to subscribe for Common Stock, securities by their terms convertible into or exchangeable for Common Stock, or options to purchase or rights to subscribe for such convertible or exchangeable securities (except for options to acquire Excluded Stock):

(A) the aggregate maximum number of shares of Common Stock deliverable upon exercise of such options to purchase or rights to subscribe for Common Stock shall be deemed to have been issued at the time such options or rights were issued and for a consideration equal to the consideration (determined in the manner provided in subparagraphs (i) and (ii) above), if any, received by the Company upon the issuance of such options or rights plus the minimum purchase or exercise price provided in such options or rights for the Common Stock covered thereby;

(B) the aggregate maximum number of shares of Common Stock deliverable upon conversion of or in exchange for any such convertible

or exchangeable securities or upon the exercise of options to purchase or rights to subscribe for such convertible or exchangeable securities and subsequent conversion or exchange thereof shall be deemed to have been issued at the time such securities, options, or rights were issued and for a consideration equal to the consideration received by the Company for any such securities and related options or rights (excluding any cash received on account of accrued interest or accrued dividends), plus the minimum additional consideration, if any, to be received by the Company upon the conversion or exchange of such securities or the exercise of any related options or rights (the consideration in each case to be determined in the manner provided in paragraphs (i) and (ii) above);

(C) on any change in the number of shares or exercise price of Common Stock deliverable upon exercise of any such options or rights or conversions of or exchanges for such securities, other than a change resulting from the anti-dilution provisions thereof, the Exercise Price shall forthwith be readjusted to such Exercise Price as would have been obtained had the adjustment made upon the issuance of such options, rights or securities not converted prior to such change or options or rights related to such securities not converted prior to such change been made upon the basis of such change;

(D) upon the expiration of any options to purchase or rights to subscribe for Common Stock which shall not have been exercised, the Exercise Price computed upon the issuance thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon such expiration, be recomputed as if the only additional shares of Common Stock issued were the shares of Common Stock, if any, actually issued upon the exercise of such options to purchase or rights to subscribe for Common Stock, and the consideration received therefor was the consideration actually received by the Company for the issue of the options to purchase or rights to subscribe for Common Stock that were exercised, plus the consideration actually received by the Company upon such exercise;

(E) no further adjustment of the Exercise Price adjusted upon the issuance of any such options, rights, convertible securities or exchangeable securities shall be made as a result of the actual issuance of Common Stock on the exercise of any such rights or options or any conversion or exchange of any such securities; and

(F) upon any readjustment of the Exercise Price pursuant to clauses (A) through (E) above, the number of Warrant Shares purchasable pursuant to this Warrant shall also be readjusted correspondingly.

6.8 Deferral in Certain Circumstances. In any case in which the provisions of this Section 6 shall require that an adjustment shall become effective immediately after a record date of an event, the Company may defer until the occurrence of such event (a) issuing to the Holder of any Warrant exercised after such record date and before the occurrence of such event the shares of capital stock issuable upon such exercise by reason of the adjustment required by such event and issuing to the Holder

only the shares of capital stock issuable upon such exercise before giving effect to such adjustments, and (b) paying to the Holder any amount in cash in lieu of a fractional share of capital stock pursuant to Section 2.3 above; provided, however, that the Company shall deliver to the Holder an appropriate instrument or due bills evidencing the Holder's right to receive such additional shares or such cash.

6.9 Appraisal Procedure. In any case in which the provisions of this Section 6 shall necessitate that the Appraisal Procedure be utilized for purposes of determining an adjustment to the Exercise Price, the Company may defer until the completion of the Appraisal Procedure and the determination of the adjustment (a) issuing to the Holder if the Holder exercises this Warrant after the date of the event that requires the adjustment and before completion of the Appraisal Procedure and the determination of the adjustment, the shares of capital stock issuable upon such exercise by reason of the adjustment required by such event and issuing to the Holder only the shares of capital stock issuable upon such exercise before giving effect to such adjustment and (b) paying to the Holder any amount in cash in lieu of a fractional share of capital stock pursuant to Section 2.3 above; provided, however, that the Company shall deliver to the Holder an appropriate instrument or due bills evidencing the Holder's right to receive such additional shares or such cash.

6.10 Exceptions. This Section 6 shall not apply to, and no adjustment to the Exercise Price or number of Warrant Shares shall be made in respect of the issuance of, (a) securities offered to the public pursuant to a public offering; (b) securities issued to employees or directors of the Company pursuant to an employee stock option plan or stock incentive plan approved by the Board of Directors; (c) shares of Common Stock issued in exchange for shares of Class B common stock, par value $0.01 per share, of the Company; (d) securities Outstanding as of the date hereof (provided that the terms of such securities will not be modified in any manner following the date hereof); (e) shares of Common Stock issuable pursuant to convertible securities, options or warrants existing on the date hereof (including pursuant to the Credit Agreement); or (f) shares of Common Stock that are issued pursuant to the Commitment Letter or any definitive documentation in respect of investments made thereunder (collectively, "Excluded Stock").

6.11 Notice of Adjustment of Exercise Price. Whenever the Exercise Price is adjusted as herein provided:

(i) the Company shall compute the adjusted Exercise Price and number of Warrant Shares issuable pursuant to this Warrant in accordance with this Section 6 and shall prepare a certificate signed by the treasurer or chief financial officer of the Company setting forth the adjusted Exercise Price and number of Warrant Shares issuable pursuant to this Warrant and showing in reasonable detail the facts upon which such adjustment is based; and

(ii) a notice to the Holder stating that the Exercise Price has been adjusted and setting forth the adjusted Exercise Price shall forthwith be prepared by the Company.

Transfer to Comply with the Securities Act

.

7.1 This Warrant has not been registered under the Securities Act and has been issued to the Holder for investment and not with a view to the distribution of either the Warrant or the Warrant Shares. Neither this Warrant nor any of the Warrant Shares or any other security issued or issuable upon exercise of this Warrant may be sold, transferred, pledged or hypothecated in the absence of an effective registration statement under the Securities Act relating to such security or an opinion of counsel satisfactory to the Company that registration is not required under the Securities Act; provided, that, no registration statement or opinion of counsel shall be required in the event of a Transfer to a Permitted Transferee. Each Warrant, the Warrant Shares and any other security issued or issuable upon exercise of this Warrant shall contain a legend on the face thereof, in substantially the following form by which the Holder (and any transferee thereof) shall be bound:

THE SECURITIES EVIDENCED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR ANY OTHER SECURITIES LAWS, AND SUCH SECURITIES MAY NOT BE SOLD, PLEDGED, HYPOTHECATED OR OTHERWISE TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION UNDER SAID ACT AND LAWS OR AN EXEMPTION THEREFROM.

7.2 Accredited Investor Status. The issuance of this Warrant is being made pursuant to Regulation D under the Securities Act to the Holder, which hereby represents and warrants that is an “accredited investor” (as such term is defined in Rule 501 of Regulation D promulgated under the Securities Act).

Notice Of Corporate Actions; Taking Of Record; Transfer Books

.

8.1 Notices of Corporate Actions. In case:

(a) of the Company granting to all of the holders of its Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class; or

(b) of any reclassification of the Common Stock (other than a subdivision or combination of the Outstanding shares of Common Stock), or of any consolidation, merger or share exchange to which the Company is a party and for which approval of any stockholders of the Company is required, or of the sale or transfer of all or substantially all of the assets of the Company; or

(c) of the voluntary or involuntary dissolution, liquidation or winding up of the Company; or

(d) of the commencement by the Company or any Subsidiary of a tender offer for all or a portion of the Outstanding shares of Common Stock (or the amending of any such tender offer to change the maximum number of

shares being sought or the amount or type of consideration being offered therefor); then the Company shall provide to the Holder, at least 30 days prior to the applicable record, effective or expiration date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution or granting of rights or warrants, or, if a record is not to be taken, the date as of which the holders of Common Stock of record who will be entitled to such dividend, distribution, rights or warrants are to be determined, (y) the date on which such reclassification, consolidation, merger, share exchange, sale, transfer, dissolution, liquidation or winding up is expected to become effective, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, share exchange, sale, transfer, dissolution, liquidation or winding up, or (z) the date on which such tender offer commenced, the date on which such tender offer is scheduled to expire unless extended, the consideration offered and the other material terms thereof (or the material terms of the amendment thereto). Such notice shall also set forth such facts with respect thereto as shall be reasonably necessary to indicate the effect of such action on the Exercise Price and the number and kind or class of shares or other securities or property which shall be deliverable or purchasable upon the occurrence of such action or deliverable upon exercise of the Warrant. Neither the failure to give any such notice nor any defect therein shall affect the legality or validity of any action described in clauses (a) through (d) of this Section 8.1.

8.2 Taking of Record. In the case of all dividends or other distributions by the Company to the holders of its Common Stock with respect to which any provision of hereof refers to the taking of a record of such holders, the Company will in each such case take such a record and will take such record as of the close of business on a Business Day.

8.3 Closing of Transfer Books. The Company shall not at any time, except upon dissolution, liquidation or winding up of the Company, close its stock transfer books or Warrant transfer books so as to result in preventing or delaying the exercise or transfer of all or any portion of this Warrant.

Notices

. Any notice or other communication required or permitted hereunder shall be deemed to have been duly given and made if (i) in writing and served by personal delivery upon the party for whom it is intended, (ii) if delivered by electronic mail with receipt confirmed (including by receipt of confirmatory electronic mail from recipient), or (iii) if delivered by certified mail, registered mail, courier service, return-receipt received to the party at the address set forth below, as follows:

(i) if to the Company, to:

vTv Therapeutics Inc.
4170 Mendenhall Oaks Pkwy
High Point, NC 27265
Attention: Rudy Howard; Robin Abrams

Email: rhoward@vtvtherapeutics.com; rabrams@vtvtherapeutics.com

with a copy (which shall not constitute notice) to:

Paul, Weiss, Rifkind, Wharton & Garrison LLP
1285 Avenue of the Americas
New York, New York 10019
Attention: Lawrence G. Wee, Esq.
Email: Lwee@paulweiss.com

(ii) if to the Holder, to:

MacAndrews & Forbes Group LLC
35 East 62nd Street
New York, New York 10065
Attention: Michael Borofsky
Email: mborofsky@MAFGRP.COM

Any party may be given notice in accordance with this Section 9, unless such party designates another address or person for receipt of notice hereunder.

No Impairment; Regulatory Compliance And Cooperation; Notice Of Expiration

. The Company shall not by any action, including, without limitation, amending its charter documents or through any reorganization, reclassification, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other similar voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of the Holder against impairment.

Miscellaneous

.

11.1 Successors and Assigns. This Warrant shall inure to the benefit of and be binding upon the successors and assigns of the Company, the Holder and their respective successors and assigns. The Holder's rights under this Warrant may be assigned, in whole or in part, to (a) any Permitted Transferee, and any Permitted Transferee shall be deemed to be a Holder for all purposes hereunder or (b) any transferee of a Warrant, or, if applicable, any portion of a Warrant, that represents (x) the greater of (A) 10% of the Warrant Shares exercisable by such transferor on the date of such transfer and (B) 19,827 Warrant Shares (subject to adjustment as set forth herein) or (y) if the transferor shall then hold Warrants representing less than 19,827 Warrant Shares (subject to adjustment as set forth herein), all of the Warrants held by such transferor, and any such transferee shall be deemed to be a Holder for all purposes hereunder.

11.2 Limitation on Exercise. Notwithstanding anything to the contrary contained herein, the maximum number of shares of Common Stock that the

Company may issue pursuant to the Commitment Letter or any other documentation contemplated under the Commitment Letter at an effective purchase price less than the greater of book or market value of the Company's Common Stock on the trading day immediately preceding the date of the Commitment Letter equals 19.99% of the outstanding shares of both the Common Stock and the Company's Class B common stock, par value $0.01 per share, taken together, immediately preceding the date of the Commitment Letter (the "Issuable Maximum"), unless the Company obtains shareholder approval in accordance with the rules and regulations of the Nasdaq Stock Market. If, at the time any Holder requests an exercise of this Warrant, the Actual Minimum (excluding any shares issued or issuable at an effective purchase price in excess of the greater of book or market value of the Company's Common Stock on the trading day immediately preceding the date of the Commitment Letter) exceeds the Issuable Maximum (and if the Company has not previously obtained the required shareholder approval), then the Company shall issue to the Holder requesting such exercise a number of shares of Common Stock equal to the Issuable Maximum. The Company shall not be obligated to seek stockholder approval under the rules and regulations of the Nasdaq Stock Market and shall not be in breach under this Warrant Agreement, the Commitment Letter or any other documentation contemplated under the Commitment Letter for failure to issue securities as a result of its failure to obtain shareholder approval as described above. For purposes hereof, "Actual Minimum" shall mean, as of any date, the maximum aggregate number of shares of Common Stock then issued or potentially issuable in the future pursuant to the Commitment Letter or any other documentation contemplated under the Commitment Letter, without giving effect to any limits on the number of shares of Common Stock that may be owned by a Holder at any one time.

11.3 Supplements and Amendments; Entire Agreement. This Warrant may be amended or supplemented only by an instrument in writing signed by the parties hereto. This Warrant, the Commitment Letter (together with any purchase agreements or other definitive documentation executed in connection therewith) and the Investor Rights Agreement contain the full understanding of the parties hereto with respect to the subject matter hereof and thereof and there are no representations, warranties, agreements or understandings other than expressly contained herein and therein.

11.4 Governing Law; Jurisdiction; Waiver Of Jury Trial. The internal laws, and not the laws of conflicts (other than Section 5-1401 of the General Obligations Law of the State of New York), of New York shall govern the enforceability and validity of this Warrant, the construction of its terms and the interpretation of the rights and duties of the Company. Any suit, action or proceeding seeking to enforce any provision of, or based on any matter arising out of or in connection with, this Warrant or the transactions contemplated hereby may be brought in any federal or state court located in the County and State of New York, and the Company hereby consents to the jurisdiction of such courts (and of the appropriate appellate courts therefrom) in any such suit, action or proceeding and irrevocably waives, to the fullest extent permitted by law, any objection which it may now or hereafter have to the laying of the venue of any such suit, action or proceeding in any such court or that any such suit, action or proceeding which is brought in any such court has been brought in an inconvenient forum. Process in

any such suit, action or proceeding may be served on the company anywhere in the world, whether within or without the jurisdiction of any such court. The Company hereby irrevocably waives any and all right to trial by jury in any legal proceeding arising out of or related to this Warrant or the transactions contemplated hereby.

11.5 Remedies. The Holder, in addition to being entitled to exercise its rights granted by law, including recovery of damages, shall be entitled to specific performance of its rights provided under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and shall waive, in an action for specific performance, the defense that a remedy at law would be adequate.

11.6 Limitation of Liability. No provision hereof and no enumeration herein of the rights or privileges of the Holder hereof, shall give rise to any liability of the Holder to pay the Exercise Price for any Warrant Shares other than pursuant to an exercise of this Warrant or any liability as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

11.7 Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Warrant.

11.8 Descriptive Headings. Descriptive headings of the several sections of this Warrant are inserted for convenience only and shall not control or affect the meaning or construction of any of the provisions hereof.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, this Warrant has been executed as of the 5th day of December, 2017.

VTV THERAPEUTICS INC.

By:/s/ Rudy C. Howard
Name: Rudy C. Howard
Title: Chief Financial Officer

[*Signature Page to Warrant*]

ANNEX A

NOTICE OF EXERCISE OF WARRANT

[To be executed only upon exercise of Warrant]

The undersigned hereby irrevocably elects to exercise the right, represented by the Warrant dated as of December 5, 2017, to purchase _____ shares of Class A common stock, par value $0.01 per share (the "Warrant Shares"), of vTv Therapeutics Inc. and tenders herewith payment in accordance with Sections 1 and 2 of such Warrant. The undersigned further requests, in accordance with Section 2.1(b) of the Warrant, that certificates for the Warrant Shares hereby purchased (and any securities or other property issuable upon exercise) be issued in the name of and delivered to _____ and, if such Warrant Shares are not all of the Warrant Shares issuable upon exercise of the Warrant, that a new Warrant of like tenor be issued for the balance of the Warrant Shares.

(Name of Registered Owner)

(Signature of Registered Owner)

(Street Address)

(City) (State) (Zip Code)

NOTICE: The signature on this subscription must correspond with the name as written upon the face of the within Warrant in every particular, without alteration or enlargement or any change whatsoever.

ANNEX B

FORM OF ASSIGNMENT

(To be executed by the registered holder if such
holder desires to transfer the Warrant.)

FOR VALUE RECEIVED _____ hereby sells, assigns and transfers unto

(Please print name and address of transferee)

the Warrants represented by this Warrant, together with all right, title and interest therein, and does hereby irrevocably constitute and appoint _____ attorney-in-fact, with full power of substitution, to transfer the within Warrant on the books of VTV THERAPEUTICS INC. to give effect to the transfer made hereby.

Date: _____, ____

Signature

NOTICE: The signature on this assignment must correspond with the name as written upon the face of the within Warrant in every particular, without alteration or enlargement or any change whatsoever.

Exhibit 10.17

FIRST AMENDMENT OF VENTURE LOAN AND SECURITY AGREEMENT AND CONSENT

This FIRST AMENDMENT OF VENTURE LOAN AND SECURITY AGREEMENT AND CONSENT (this "Agreement"), dated as of December 20, 2017, is entered into by and among vTv THERAPEUTICS INC. ("VTV INC"), vTv THERAPEUTICS LLC ("VTV LLC" and collectively with VTV INC, "Co-Borrowers"), HORIZON CREDIT II LLC ("HCII"), as assignee of HORIZON TECHNOLOGY FINANCE CORPORATION ("Horizon"), SILICON VALLEY BANK, ("SVB", and collectively with HCII "Lenders") and Horizon as Collateral Agent.

RECITALS

A. Co-Borrowers, Lenders and Collateral Agent are parties to a certain Venture Loan and Security Agreement dated as of October 28, 2016 (as amended, restated, supplemented or otherwise modified from time to time, the "Loan Agreement") pursuant to which, among other things, (i) Horizon provided a loan to Co-Borrowers as evidenced by a certain Secured Promissory Note (Loan A) executed by Co-Borrowers in favor of Horizon, dated October 28, 2016, in the original principal amount of Six Million Two Hundred Fifty Thousand and 00/100 Dollars ($6,250,000.00) ("Loan A Note"), (ii) SVB provided a loan to Co-Borrowers as evidenced by a certain Secured Promissory Note (Loan B) executed by Co-Borrowers in favor of SVB dated October 28, 2016, in the original principal amount of Six Million Two Hundred Fifty Thousand and 00/100 Dollars ($6,250,000.00) ("Loan B Note"), (iii) Horizon provided a loan to Co-Borrowers as evidenced by a certain Secured Promissory Note (Loan C) executed by Co-Borrowers in favor of Horizon, dated March 24, 2017, in the original principal amount of Three Million Seven Hundred Fifty Thousand and 00/100 Dollars ($3,750,000.00) ("Loan C Note"), (iv) SVB provided a loan to Co-Borrowers as evidenced by a certain Secured Promissory Note (Loan D) executed by Co-Borrowers in favor of SVB, dated March 24, 2017, in the original principal amount of Three Million Seven Hundred Fifty Thousand and 00/100 Dollars ($3,750,000.00) ("Loan D Note" and collectively with the Loan A Note, the Loan B Note and the Loan C Note, the "Notes") and (v) Lenders and Horizon have been granted a security interest in all assets of the Co-Borrowers, except with respect to Co-Borrower's Intellectual Property (as defined in the Loan Agreement).

B. Horizon has assigned all of its right, title and interest in and to the Loan A Note to HCII pursuant to that certain Assignment of Notes Receivable dated as of October 28, 2016.

C. Horizon has assigned all of its right, title and interest in and to the Loan C Note to HCII pursuant to that certain Assignment of Notes Receivable dated as of March 24, 2017.

D. Co-Borrowers have now requested that Lenders consent to VTV LLC entering into a License Agreement in substantially the form and substance set forth in Exhibit A attached hereto (the "License Agreement") with HANGZHOU ZHONGMEI HUADONG PHARMACEUTICAL CO., LTD. (the "Licensee").

E. Lenders are willing to grant such request, but only to the extent, and in accordance with the terms, and subject to the conditions, set forth herein.

AGREEMENT

NOW, THEREFORE, in consideration of the above recitals and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Co-Borrowers, Lenders and Horizon hereby agree as follows:

1. Definitions; Interpretation. Unless otherwise defined herein, all capitalized terms used herein and defined in the Loan Agreement shall have the respective meanings given to those terms in the Loan Agreement. Other rules of construction set forth in the Loan Agreement, to the extent not inconsistent with this Agreement, apply to this Agreement and are hereby incorporated by reference.

2. Confirmation. Borrower hereby acknowledges and agrees that: (i) the Loan Agreement sets forth the legal, valid, binding and continuing obligations of Borrower to Lenders, (ii) the Obligations to Lenders under the Loan Agreement are secured by validly perfected security interests in all assets of Borrower (except with respect to Borrower's Intellectual Property), the effectiveness and validity of which are hereby confirmed and (iii) Borrower has no cause of action, claim, defense or set-off against any Lender or any of their respective affiliates and subsidiaries, officers, directors, employees, shareholders, agents and representatives ("Related Parties") in any way regarding or relating to the Loan Agreement or such Lender's or their respective Related Parties' actions thereunder and to the extent any such cause of action, claim, defense or set-off ever existed, whether foreseen or unforeseen, it is waived and such Lender and their respective Related Parties are released from any such causes of action, claims, defenses or rights of set-off of Borrower.

3. Amendments to Loan Agreement.

(a) Borrower and Lenders hereby agree that the subsection following shall be inserted at the end of Section 6.3 of the Loan Agreement:

"Borrower Representative shall deliver to each Lender no later than Friday of every other week, a real-time consolidated cash report as of such Friday."

(b) Borrower and Lenders hereby agree that the following shall be added to the Loan Agreement after Section 6.14 as a new Section 6.15:

"6.15 Minimum Cash Covenant. Co-Borrowers shall maintain at all times not less than Two Million Five Hundred Thousand and 00/100 Dollars ($2,500,000.00) in a deposit account subject to an Account Control Agreement."

(c) Co-Borrowers and Lenders hereby agree that Section 8.2 of the Loan Agreement shall be deleted in its entirety and replaced with the following:

(d) "8.2 Certain Covenant Defaults. If any Co-Borrower fails to perform any obligation arising under Sections 6.3, 6.4, 6.5, 6.6, 6.8, 6.10, 6.11or 6.15 or violates any of the covenants contained in Section 7 of this Agreement."

4. Consent to License Agreement. Notwithstanding any prohibition or contrary provision contained in the Loan Agreement, Lenders hereby consent to VTV LLC entering into the License Agreement and performing its obligations thereunder, and for all purposes the License Agreement shall be a Permitted Transfer under the Loan Agreement.

5. Representations and Warranties.

(a) At and as of the date of this Agreement and both prior to and after giving effect to this Agreement, each of the representations and warranties contained in the Loan Agreement is true and correct in all material respects (except where such representations and warranties expressly relate to an earlier date, in which case such representations and warranties are true and correct in all material respects as of such earlier date).

(b) Each Borrower has all necessary power and authority to execute, deliver, and perform in accordance with the terms thereof, this Agreement. Each Borrower has all requisite power and authority to own and operate its Property and to carry on its business as now conducted.

(c) No Default or Event of Default has occurred under the Loan Agreement or the other Loan Documents and is continuing or will exist after giving effect to this Agreement.

6. Conditions to Effectiveness. Each Lender's consent and agreement herein is expressly conditioned on the following:

(a) Co-Borrowers executing and delivering to Lenders a duly executed copy of this Agreement;

(b) Each of the representations and warranties made in this Agreement shall be true and correct on and as of the date hereof as if made on and as of such date, both before and after giving effect to this Agreement;

(c) Co-Borrower's payment of Lenders' legal expenses incurred in connection with the drafting, negotiation and execution of this Agreement; and

(d) No Default or Event of Default has occurred and is continuing.

7. Effect of Agreement. On and after the date hereof, each reference to the Loan Agreement in the Loan Agreement or in any other document shall mean the Loan Agreement as amended by this Agreement. Except as expressly provided hereunder, the execution, delivery and effectiveness of this Agreement shall not operate as a waiver of any right, power, or remedy of any Lender, nor constitute a waiver of any provision of the Loan Agreement. Except to the limited extent expressly provided herein, nothing contained herein shall, or shall be construed to (nor shall the Co-Borrowers ever argue to the contrary) (i) modify the Loan Agreement or any other Loan Document (ii) modify, waive, impair, or affect any of the covenants, agreements, terms, and conditions thereof,

or (iii) waive the due keeping, observance and/or performance thereof, each of which is hereby ratified and confirmed by the Co-Borrowers. Except as amended above, the Loan Agreement remains in full force and effect.

8. Headings. Headings in this Agreement are for convenience of reference only and are not part of the substance hereof.

9. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of New York without reference to conflicts of law rules.

10. Counterparts. This Agreement may be executed in any number of counterparts, including by electronic or facsimile transmission, each of which when so delivered shall be deemed an original, but all such counterparts taken together shall constitute but one and the same instrument.

11. Integration. This Agreement and the Loan Documents constitute and contain the entire agreement of Co-Borrowers, Horizon and Lenders with respect to their respective subject matters, and supersede any and all prior agreements, correspondence and communications.

[*Remainder of page intentionally left blank*]

IN WITNESS WHEREOF, Co-Borrowers and Lenders have caused this FIRST AMENDMENT OF VENTURE LOAN AND SECURITY AGREEMENT AND CONSENT to be executed as of the day and year first above written.

CO-BORROWER:

vTv THERAPEUTICS INC.

By: /s/ Rudy C. Howard

Name:Rudy C. Howard
Title: Chief Financial Officer

CO-BORROWER:

vTv THERAPEUTICS LLC

By: /s/ Rudy C. Howard

Name:Rudy C. Howard
Title: Chief Financial Officer

LENDER:
HORIZON CREDIT II LLC

By: /s/ Robert D. Pomeroy, Jr.

Name: Robert D. Pomeroy, Jr.
Title: Chief Executive Officer

LENDER:
SILICON VALLEY BANK

By:/s/ Scott McCarty

Name: Scott McCarty
Title:Director

COLLATERAL AGENT:
HORIZON TECHNOLOGY FINANCE CORPORATION

By: /s/ Robert D. Pomeroy, Jr.

Name: Robert D. Pomeroy, Jr.
Title: Chief Executive Officer

EXHIBIT A

License Agreement

(See attached)

Exhibit 10.18

Execution Version

MacAndrews & Forbes Group LLC
35 East 62nd Street
New York, New York 10065

December 5, 2017

vTv Therapeutics Inc.
4170 Mendenhall Oaks Pkwy
High Point, NC 27265

Attn: Stephen L. Holcombe
President and Chief Executive Officer

Rudy C. Howard
Chief Financial Officer

Gentlemen:

You have indicated an interest in an investment by MacAndrews & Forbes Group LLC or one of its affiliates (collectively, "MacAndrews") in Class A common stock, par value $0.01 ("Common Stock"), of vTv Therapeutics Inc. (the "Company") in an amount of up to $10,000,000. I am pleased to present, for your board's consideration, the terms on which we would agree to make such an investment.

As set forth in more detail in the term sheet attached to this letter (collectively, the term sheet and this letter are referred to as this "Letter") we agree to invest up to $10,000,000 in the Company, with such commitment remaining available to the Company, at its option, for a period of one year from the date of this Letter (the "Commitment Period"). In exchange, the definitive agreement will provide that the Company will issue to us on each funding date (the "Company Option") Common Stock at a per share purchase price equal to $4.38 (the "Per Share Price"), which is equal to the average of the volume weighted-average prices of the Common Stock for the five last completed trading days prior to the date of this Letter.

In consideration for our binding commitment, upon the execution of this Letter, the Company will issue us warrants to acquire 198,267 shares of Common Stock, exercisable at an initial exercise price of $5.04 per share of Common Stock, subject to customary proportional adjustments for stock splits, stock dividends, combinations and similar transactions and customary weighted-average anti-dilution adjustments for issuances of Common Stock or derivatives below the exercise price or fair market value. The warrants shall be exercisable for a period of seven years commencing on the date of this Letter. We shall also have the option, during the Commitment Period, to invest in the Company by purchasing up to $10,000,000 of shares of Common Stock at the Per Share Price (the "MacAndrews Option"). Notwithstanding anything to the contrary in this Letter, the total value of Common Stock that may be purchased pursuant to the Company Option and the MacAndrews Option shall not exceed $10,000,000 in the aggregate. The Company Option may be exercised by you, and the MacAndrews Option may be exercised by us, in each case, by the exercising party delivering a notice (a "Funding Notice") to the other party, which notice shall specify the aggregate value and number of shares of Common Stock to be purchased by us. Funding Notices from the Company shall be made in writing by the Chief Executive Officer of the Company. MacAndrews shall be limited to three Funding Notices during the Commitment Period; the number of Funding Notices from the Company shall not be limited.

The Company would use the proceeds of any such investment to fund research and development, to pursue growth opportunities and for general corporate purposes.

Our obligation to fund the purchase price and the Company's obligation to issue shares of Common Stock on the terms set forth in this Letter with respect to each investment contemplated by this Letter are subject to the negotiation and execution of a mutually acceptable securities purchase agreement with respect to each such investment.

This Letter shall, upon execution, be binding on the parties hereto. All obligations under this Letter shall remain in full force and effect until the one-year anniversary of this Letter. The completion of the transactions contemplated by this Letter are subject, among other things, to the negotiation and execution of a definitive agreement acceptable to each of us. The parties hereto agree that, upon delivery of a Funding Notice in accordance with the terms of this Letter by either party, the parties shall, as promptly as practicable, (i) enter into a securities purchase agreement with respect to the investment contemplated by the Funding Notice, (ii) take all actions and further steps as may be reasonably necessary to complete such investment, and (ii) complete such investment. Notwithstanding anything to the contrary in this Letter, failure by either party to comply with the foregoing sentence shall constitute a material breach under this Letter, entitling the non-breaching party to specific performance (it being understood that money damages would not be an adequate remedy for any such breach).

Neither this Letter nor any of the provisions hereof may be amended, modified, changed or waived except by an instrument in writing signed by the parties hereto. This Letter shall be governed by and construed in accordance with the laws of the State of New York. This Letter contains the full and entire understanding and agreement between the parties with regard to the subject matters hereof and supersedes all prior understandings and agreements relating to the matters set forth herein. This Letter may be executed in counterparts, each of which shall be deemed to constitute an original but all of which together shall constitute one and the same instrument.

We continue to be excited about the Company and its prospects. We look forward to implementing a transaction that would be in the best interests of the Company's stockholders, officers and other employees, and customers.

Very truly yours,

MACANDREWS & FORBES GROUP LLC

By: /s/ Michael Borofsky
Name: Michael Borofsky
Title: SVP

AGREED AND ACCEPTED:

VTV THERAPEUTICS INC.

By: /s/ Rudy C. Howard
Name: Rudy C. Howard
Title: Chief Financial Officer

SUMMARY OF TERMS
$10,000,000 INVESTMENT
VTV THERAPEUTICS INC.
December 5, 2017

This term sheet ("Term Sheet") summarizes the principal terms of an investment by MacAndrews & Forbes Group LLC or one of its affiliates (collectively, "MacAndrews") of up to $10,000,000 in vTv Therapeutics Inc. (the "Company").

Company Option: MacAndrews commits to invest up to an aggregate of $10,000,000 in the Company, at the Company's option (the "Company Option"), during the one-year period (the "Commitment Period") following execution of this Letter.

MacAndrews Option: At any time during the Commitment Period, MacAndrews may, at MacAndrews' option (the "MacAndrews Option"), elect to invest up to $10,000,000 in the Company on the same terms as the Company Option; provided that in no event will the aggregate amount of the investments pursuant to the Company Option and the MacAndrews Option exceed $10,000,000.

Securities to be Issued; Terms of Investments: Pursuant to the exercise of the Company Option or the MacAndrews Option (an "Investment"), subject to the terms and conditions of the Purchase Agreement (defined below), the Company will issue to Investor on each funding date:

Such number of shares (the "Shares") of Class A common stock, par value $0.01 per share ("Common Stock"), of the Company with a value equal to the Investment, at a per share price ("Per Share Price") equal to $4.38, which is equal to the average of the volume weighted-average prices of the Common Stock for the five last completed trading days prior to the date of this Letter.

Use of Proceeds: To fund research and development, to pursue growth opportunities and for general corporate purposes.

Commitment Fee: As consideration for the investment commitment and the other covenants and obligations of MacAndrews under this Letter, upon the execution of this Letter, the Company will issue to MacAndrews warrants (the "Commitment Fee Warrants") to purchase 198,267 shares of Common Stock, at an exercise price per share of $5.04, payable in cash or by cashless exercise. The Commitment Fee Warrants shall be exercisable for seven years commencing on the date of execution of this Letter. The Commitment Fee Warrants do not reduce the total amount to be invested under the Company Option and the MacAndrews Option.

Funding Notices; Binding Commitment: The Company Option may be exercised by the Company, and the MacAndrews Option may be exercised by MacAndrews, in each case, by the exercising party delivering a written notice (a "Funding Notice") to the other party, which notice shall specify the aggregate value and number of shares of Common Stock to be purchased by MacAndrews. Funding Notices from the Company shall be made in writing by the Chief Executive Officer of the Company. MacAndrews shall be limited to three Funding Notices during the Commitment Period; the number of Funding Notices from the Company shall not be limited.

Upon delivery of a Funding Notice in accordance with the terms of this Letter by either party, the parties shall, as promptly as practicable, (i) enter into a securities purchase agreement with respect to the Investment contemplated by the Funding Notice, (ii) take all actions and further steps as may be reasonably necessary to complete such Investment, and (ii) complete such Investment. Notwithstanding anything to the contrary in this Letter, failure by either party to comply with the foregoing sentence shall constitute a material breach of this Letter, entitling the non-breaching party to specific performance (it being understood that money damages would not be an adequate remedy for any such breach).

Securities Purchase Agreement: MacAndrews' obligation to fund the purchase price and the Company's obligation to issue shares of Common Stock on the terms set forth in this Letter with respect to each Investment contemplated by this Letter are subject to the negotiation and execution of a mutually acceptable securities purchase agreement (the "Purchase Agreement") with respect to each such Investment. The issuance of the Shares will be made pursuant to Regulation D under the Securities Act of 1933, as amended, and MacAndrews agrees that it is an "accredited investor" (as such term is defined in Rule 501 of Regulation D promulgated under the Securities Act of 1933, as amended).

Expenses: Counsel to the Company will prepare initial drafts of all documents. The Company shall pay all reasonable fees and expenses of MacAndrews' counsel, if necessary.

Registration Rights: The Shares and shares of Common Stock issuable upon exercise of the Commitment Fee Warrants and any other securities acquired in connection with any Investment shall be covered by the Investor Rights Agreement by and between the Company and M&F TTP Holdings Two LLC, as successor in interest to vTv Therapeutics Holdings LLC, dated July 29, 2015, as amended from time to time.

Representations and Warranties: Each Purchase Agreement will include standard representations and warranties by the Company.

Conditions to Closing: Each Purchase Agreement will include standard conditions to closing of each tranche, including, without limitation, (i) the Company being in compliance with all applicable Nasdaq Marketplace Rules (both before and after giving effect to the applicable closing), (ii) the Common Stock remaining listed for trading on a Nasdaq exchange and (iii) the Shares to be then issued having been listed for trading on a Nasdaq exchange.

Exhibit 10.19

EXECUTION VERSION

LICENSE AGREEMENT

BY AND BETWEEN

HANGZHOU ZHONGMEI HUADONG PHARMACEUTICAL CO., LTD.

AND

vTv THERAPEUTICS LLC

DATED AS OF DECEMBER 21, 2017

*** Confidential treatment has been requested with respect to portions of this agreement as indicated by "[***]" and such confidential portions have been deleted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.**

Asia: 57350-34

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Schedules and Exhibits

LICENSE AGREEMENT

THIS LICENSE AGREEMENT (this "Agreement") is entered into this 21st day of December 2017 (the "Effective Date"), by and between HANGZHOU ZHONGMEI HUADONG PHARMACEUTICAL CO., LTD., a corporation organized under the laws of China, having a business address at No. 866, Moganshan Road, Hangzhou, China ("Huadong"), and VTV THERAPEUTICS LLC, a limited liability company organized under the laws of

Delaware, having a business address at 4170 Mendenhall Oaks Parkway, High Point, NC 27265 ("vTv").

WHEREAS, vTv has developed or obtained rights to vTv Know-How, vTv Patent Rights and the Compound, TTP273, which is a glucagon-like peptide-1 receptor agonist (each as defined below); and

WHEREAS, Huadong desires to obtain a license under the vTv Patent Rights and the vTv Know-How to Develop and Commercialize Compounds and Products in the Field in the Territory (each as defined below), under the terms and conditions set forth herein, and vTv desires to grant such a license.

NOW, THEREFORE, the Parties agree as follows:

ARTICLE I
DEFINITIONS

The following terms, whether used in the singular or plural, shall have the following meanings:

1.1 "Acquisition". Acquisition means, with respect to a Party, a merger, acquisition (whether of all of the stock or all or substantially all of the assets of a Person or any operating or business division of a Person) or similar transaction by or with the Party, other than a Change in Control of the Party.

1.2 "Adverse Event". Adverse Event means any unwanted or harmful medical occurrence in a patient or subject who is administered a Product, whether or not considered related to such Product, including any undesirable sign (including abnormal laboratory findings of clinical concern), symptom or disease temporally associated with the use of such Product.

1.3 "Affiliate". Affiliate means any Person directly or indirectly controlled by, controlling or under common control with, a Party, but only for so long as such control shall continue. For purposes of this definition, "control" (including, with correlative meanings, "controlled by", "controlling" and "under common control with") means, with respect to a Person, possession, direct or indirect, of (a) the power to direct or cause direction of the management and policies of such Person (whether through ownership of securities or partnership or other ownership interests, by contract or otherwise), or (b) at least 50% of the voting securities (whether directly or pursuant to any vested and exercisable option, warrant or other similar arrangement) or other comparable equity interests. For clarity, neither of the Parties shall be deemed to be an "Affiliate" of the other.

1.4 "Backup Compound". Backup Compound means any GLP-1r Agonist whose composition of matter or chemical structure is disclosed or claimed in, or Covered by the vTv Patent Rights existing as of the Effective Date.

1.5 "Bankruptcy Code". Bankruptcy Code means Title 11 of the US Code, as amended from time to time.

1.6 "Business Day". Business Day means a day that is not a Saturday, Sunday or a day on which banking institutions in New York, New York, in China Mainland or Hong Kong are authorized by Law to remain closed.

1.7 "Calendar Quarter". Calendar Quarter means each of the periods ending on March 31, June 30, September 30 and December 31 of any Calendar Year.

1.8 "Calendar Year". Calendar Year means each calendar year during the Term.

1.9 "CFDA". CFDA means the China Food and Drug Administration, including any of its predecessor, successor agency and local counterparts in China Mainland.

1.10 "cGMP". cGMP means all applicable current Good Manufacturing Practices including, as applicable, (a) the principles detailed in the U.S. Current Good Manufacturing Practices, 21 C.F.R. Parts 4, 210, 211, 600-680 and 820, (b) European Directive 2003/94/EC and Eudralex 4, (c) the principles detailed in the ICH Q7 guidelines, and (d) the equivalent applicable Laws in any relevant country or region (including but not limited to any Region in the Territory), each as may be amended and applicable from time to time.

1.11 "Change in Control". Change in Control means, with respect to a Party, the occurrence of any of the following after the Effective Date:

(a)any "person" or "group" (as such terms are defined below) (i) is or becomes the "beneficial owner" (as defined below), directly or indirectly, of shares of capital stock or other interests (including partnership interests) of such Party then outstanding and normally entitled (without regard to the occurrence of any contingency) to vote in the election of the directors, managers or similar supervisory positions ("Voting Stock") of such Party representing fifty percent (50%) or more of the total voting power of all outstanding classes of Voting Stock of such Party or (ii) has the power, directly or indirectly, to elect a majority of the members of the Party's board of directors, or similar governing body ("Board of Directors");

(b)such Party enters into a merger, consolidation or similar transaction with another Person (whether or not such Party is the surviving entity) and as a result of such merger, consolidation or similar transaction (i) the members of the Board of Directors of such Party immediately prior to such transaction constitute less than a majority of the members of the Board of Directors of such Party or such surviving Person immediately following such transaction or (ii) the Persons that beneficially owned, directly or indirectly, the shares of Voting Stock of such Party immediately prior to such transaction cease to beneficially own, directly or indirectly, shares of Voting Stock of such Party representing at least a majority of the total voting power of all outstanding classes of Voting Stock of the surviving Person in substantially the same proportions as their ownership of Voting Stock of such Party immediately prior to such transaction; or

(c)such Party sells or transfers to any Third Party, in one or more related transactions, properties or assets representing all or substantially all of such Party's consolidated total assets to which this Agreement relates.

For the purpose of this definition of Change in Control, (i) "person" and "group" have the meanings given such terms under Section 13(d) and 14(d) of the United States Securities Exchange Act of 1934 and the term "group" includes any group acting for the purpose of acquiring, holding or disposing of securities within the meaning of Rule 13d-5(b)(1) under the said Act; (ii) a "beneficial owner" shall be determined in accordance with Rule 13d-3 under the aforesaid Act; and (iii) the terms "beneficially owned" and "beneficially own" shall have meanings correlative to that of "beneficial owner."

1.12 "China GAAP". China GAAP means China generally acceptable accounting principles.

1.13 "China Mainland". China Mainland means, for the purpose of this Agreement, the territory of the PRC, excluding Hong Kong, Macau and Taiwan.

1.14 "Combination Product". Combination Product means (a) any pharmaceutical product that is a single formulation consisting of a Compound as an active ingredient and one or more other active ingredients, which other active ingredients are not Compounds, are not Covered by a vTv Patent Right, and do not embody any vTv Know-How, in all such cases prior to such other active ingredient being combined with such Compound ("Other API") or (b) any combination of a Compound sold together with any separately formulated Other API for a single invoiced price.

1.15 "Commercialization" or "Commercialize". Commercialization or Commercialize means all activities related to obtaining pricing and reimbursement approvals, marketing, promoting, Manufacturing commercial supplies of, distributing, importing, offering for sale or selling a product.

1.16 "Commercially Reasonable Efforts". Commercially Reasonable Efforts means, with respect to an objective, the reasonable, diligent, good faith efforts of a Party (including the efforts of its Affiliates and Sublicensees) to accomplish such objective that a company would normally use to accomplish a similar objective under similar circumstances, and, specifically with respect to obligations hereunder relating to a Compound or Product, the carrying out of such obligations with those efforts and resources that a pharmaceutical company would use were it Developing or Commercializing its own pharmaceutical products that are of similar market potential at a similar stage in development or product life as the Compound or Product, taking into account product labeling or anticipated labeling, present and future market potential, past performance of the Compound or Product, financial return, safety and efficacy, medical and clinical considerations, present and future regulatory environment and competitive Third Party products, and the expected and actual amounts of marketing and promotional expenditures required, all as measured by the facts and circumstances at the time such efforts are due.

1.17 "Competing Activities". Competing Activities means the Development, Manufacturing, or Commercialization of any Competing Product.

1.18 "Competing Product". Competing Product means a non-peptidic small molecule chemical entity product, other than a Product, that has been shown to have GLP-1r Agonist activity as its primary therapeutic mechanism of action.

1.19 "Competitor". Competitor means (a) any Person that derives a material portion of its revenues from one or more pharmaceutical or biological products (including over-the-counter products) intended for human use or consumption that are directly competitive in one or more of the national markets with any one or more products from which Huadong derives a material portion of its revenues; (b) any Person that directly or indirectly Develops, Manufactures, or Commercializes a Competing Product, and (c) any Person that Controls Know-How, Patent Rights, or other intellectual property rights in or with respect to any Competing Product.

1.20 "Compound". Compound means any small molecule GLP-1r Agonist compound, including (a) TTP273, (b) any Backup Compound, or (c) any other form of TTP273 or a Backup Compound, including any prodrug (including ester pro-drug), solvate, hydrate, ester, salt, stereoisomer, racemate, tautomer, polymorph, isomer, enantiomer, free acid form, free base form, crystalline form, co-crystalline form, amorphous form, chelate, or optically active form and metabolite thereof, provided that any such metabolite has functional, *in vivo* GLP-1r Agonist activity as a therapeutic mechanism of action.

1.21 "Control" or "Controlled". Control or Controlled means, with respect to any tangible property or intellectual property right or other intangible property, the possession (whether directly or indirectly, and whether by ownership, license or otherwise (other than pursuant to this Agreement)) by a Party of the ability to grant to the other Party access to such tangible property or access to or a license or sublicense to or other rights (including the right to reference Regulatory Filings) to such intellectual property right or other intangible property, as provided herein without violating the terms of any agreement with any Third Party.

1.22 "Cover", "Covering" or "Covered". Cover, Covering or Covered means, with respect to a compound, product, technology, process or method that, in the absence of ownership of or a license granted under a Valid Claim, the manufacture, use, offer for sale, sale or importation of such compound or product or the practice of such technology, process or method would infringe such Valid Claim (or, in the case of a Valid Claim that has not yet issued, would infringe such Valid Claim if it were to issue without modification).

1.23 "CNS". CNS means diseases of the central nervous system.

1.24 "CTA". CTA means the clinical trial approval granted by the CFDA or an equivalent approval granted by an applicable Regulatory Authority in a Region of the Territory other than China Mainland, for conducting a clinical trial on human subjects for a Compound or Product in accordance with applicable Laws.

1.25 "Development" or "Develop". Development or Develop means all activities related to non-clinical and clinical drug research, discovery and development activities, including CTA-enabling toxicology and other CTA-enabling non-clinical development efforts, stability testing, process development, compound property optimization, formulation development, delivery system development, quality assurance and quality control development, statistical analysis, clinical pharmacology, Manufacturing supplies of compounds and products for non-clinical and clinical use, clinical studies (including pre- and post-approval studies and investigator sponsored clinical studies), regulatory affairs, and Regulatory Approval and clinical

study regulatory activities (excluding regulatory activities directed to obtaining pricing and reimbursement approvals).

1.26 "Development Plan". Development Plan means the plan for the Development of Products in the Field in the Territory as it may be modified from time to time in accordance with this Agreement.

1.27 "FDA". FDA means the US Food and Drug Administration and any successor agency.

1.28 "Field". Field means all therapeutic uses in humans or animals.

1.29 "First Commercial Sale". First Commercial Sale means, with respect to a Product in a Region of the Territory, the first sale for monetary value for use or consumption by the end user of a Product by Huadong, its Affiliates or its Sublicensees in such Region after Regulatory Approval for such Product has been obtained in such Region. Sales prior to receipt of Regulatory Approval for such Product, such as so-called "treatment IND sales," "named patient sales," and "compassionate use sales," shall not be construed as a First Commercial Sale.

1.30 "Generic Competition". Generic Competition means, with respect to a Product in any Region of the Territory in a given Calendar Quarter, that, during such Calendar Quarter, one or more Generic Products shall be commercially available in such Region and sold by a Third Party not authorized by Huadong or any of its Affiliates, and such Generic Products shall have a market share of at least [***] of the aggregate market share of Products and Generic Products (based on data provided by IMS International, or if such data is not available, such other reliable data source as reasonably determined by Huadong in consultation with vTv) as measured by unit volume.

1.31 "GCP". GCP means all applicable Good Clinical Practice standards for the design, conduct, performance, monitoring, auditing, recording, analyses and reporting of clinical trials, including, as applicable (a) as set forth in the International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use Harmonized Tripartite Guideline for Good Clinical Practice (CPMP/ICH/135/95) and any other guidelines for good clinical practice for trials on medicinal products in the Territory, (b) the Declaration of Helsinki (2004) as last amended at the 52nd World Medical Association in October 2000 and any further amendments or clarifications thereto, (c) U.S. Code of Federal Regulations Title 21, Parts 50 (Protection of Human Subjects), 56 (Institutional Review Boards) and 312 (Investigational New Drug Application), as may be amended from time to time, and (d) the equivalent applicable Laws in any Region in the Territory, each as may be amended and applicable from time to time and in each case, that provide for, among other things, assurance that the clinical data and reported results are credible and accurate and protect the rights, integrity, and confidentiality of trial subjects.

1.32 "Generic Product". Generic Product means, with respect to a given Product, any pharmaceutical preparation that contains a Compound as its active pharmaceutical ingredient and (a) is approved by a Regulatory Authority for sale in reliance, in whole or in part, on the prior approval (or on safety or efficacy data submitted in support of the prior approval) of such

Product as determined by the applicable Regulatory Authority or is approved for sale in reliance, in whole or in part, on the existing drug standard already approved by the applicable Regulatory Authority, or (b) is otherwise substitutable for such Product under applicable Laws by a pharmacist without the intervention of the prescribing physician.

1.33 "GLP". GLP means all applicable Good Laboratory Practice standards, including, as applicable, as set forth in the then current good laboratory practice standards promulgated or endorsed by the U.S. Food and Drug Administration as defined in 21 C.F.R. Part 58, or the equivalent applicable Laws in any Region in the Territory, each as may be amended and applicable from time to time.

1.34 "GLP-1r Agonist". GLP-1r Agonist means an agonist of the glucagon-like peptide-1 receptor or an incretin mimetic.

1.35 "Governmental Authority". Governmental Authority means any US federal, state or local or any foreign government, or political subdivision thereof, or any multinational organization or authority or any authority, agency or commission entitled to exercise any administrative, executive, judicial, legislative, police, regulatory or taxing authority or power, any court or tribunal (or any department, bureau or division thereof), or any governmental arbitrator or arbitral body.

1.36 "GSP". GSP means all applicable Good Supply Practice standards, including, as applicable, as set forth in the then current good supply practice standards promulgated or endorsed by the CFDA as defined in Good Supply Practice for Pharmaceutical Products or the equivalent applicable Laws in any Region in the Territory, each as may be amended and applicable from time to time.

1.37 "Hong Kong". Hong Kong means the Hong Kong Special Administrative Region of the PRC.

1.38 "Huadong Know-How". Huadong Know-How means all Know-How Controlled as of the Effective Date or thereafter during the Term by Huadong (other than any Know-How included in Joint Intellectual Property) and that is used by Huadong or any of its Affiliates in the Development, Manufacture or Commercialization of any Compound or Product.

1.39 "Huadong Patent Rights". Huadong Patent Rights means all Patent Rights Controlled as of the Effective Date or thereafter during the Term by Huadong (other than Joint Patent Rights) and that Cover the Development, Manufacture or Commercialization of any Compound or Product as such Development, Manufacture or Commercialization is conducted by Huadong or its Affiliates consistent with this Agreement.

1.40 "Information". Information means all technical, scientific, and other know-how and information, trade secrets, knowledge, technology, means, methods, processes, practices, formulae, instructions, skills, techniques, procedures, experiences, ideas, technical assistance, designs, drawings, assembly procedures, computer programs, apparatuses, specifications, data, results and other material, including: biological, chemical, pharmacological, toxicological, pharmaceutical, physical and analytical, pre-clinical, clinical, safety, manufacturing and quality control data and information, including study designs and protocols; assays; and biological

methodology; in each case (whether or not confidential, proprietary, patented or patentable) in written, electronic or any other form now known or hereafter developed.

1.41 "Joint Intellectual Property". Joint Intellectual Property means the Joint Inventions and the Joint Patent Rights.

1.42 "Know-How". Know-How means proprietary or non-public information or materials, whether patentable or not, including (a) ideas, discoveries, inventions, improvements or trade secrets, (b) pharmaceutical, chemical or biological materials, products or compositions, (c) tests, assays, techniques, data, methods, procedures, formulas or processes, (d) technical, medical, clinical, toxicological or other scientific data or other information relating to any of the foregoing, and (e) drawings, plans, designs, diagrams, sketches, specifications or other documents containing or relating to such information or materials.

1.43 "Law" or "Laws". Law or Laws means all laws, statutes, rules, regulations, orders, judgments or ordinances of any Governmental Authority.

1.44 "Legal Exclusivity". Legal Exclusivity means, with respect to a Product and a Region, that (a) a Valid Claim included within a vTv Patent Right or Joint Patent Right Covers such Product in such Region, or (b) data exclusivity rights, orphan drug designation or other similar exclusivity rights have been conferred as to such Product by a Regulatory Authority or other applicable Governmental Authority in such Region.

1.45 "Loan Agreement". Loan Agreement means the Venture Loan and Security Agreement, dated October 28, 2016, by and among vTv, Silicon Valley Bank and Horizon Technology Finance Corporation in effect as of the Effective Date.

1.46 "Losses". Losses means any and all (a) claims, losses, liabilities, damages, fines, royalties, governmental penalties or punitive damages, deficiencies, interest, awards, judgments, and settlement amounts (including special, indirect, incidental, and consequential damages, lost profits, and Third Party punitive and multiple damages), and (b) in connection with all of the items referred to in clause (a) above, any and all costs and expenses (including reasonable counsel fees and all other expenses reasonably incurred in investigating, preparing or defending any litigation or proceeding, commenced or threatened).

1.47 "Macau". Macau means the Macau Special Administrative Region of the PRC.

1.48 "Manufacture" or "Manufacturing". Manufacture or Manufacturing means all activities related to producing, manufacturing, processing, filling, finishing, packaging, labeling, quality assurance testing and release, shipping and storage of a product, or any intermediate thereof, including process development, process qualification and validation, scale-up, non-clinical, clinical and commercial manufacturing and analytic development, product characterization, stability testing, quality assurance, and quality control.

1.49 "NDA". NDA means a new drug application or application for market approval filed with the CFDA with respect to a Compound or Product, or an equivalent application filed with the Regulatory Authority of a Region in the Territory other than China Mainland, in accordance with the applicable Laws.

1.50 "Net Sales". Net Sales means [***] of the gross amounts billed or invoiced by Huadong, its Subsidiaries and Sublicensees to any Third Party that is not a Sublicensee with respect to sales of Products in the Territory; provided, that (a) [***] and (b) [***].

If a Product is sold as part of a Combination Product, Net Sales will be the product of (x) Net Sales of the Combination Product calculated as above (i.e., calculated as for a non-Combination Product) and (y) the fraction (A/(A+B)), where:

(a)A is [***]; and

(b)B is [***].

If A or B cannot be determined by reference to non-Combination Product sales as described above, then Net Sales for purposes of determining royalty payments will be calculated as above, but [***] shall be determined by mutual agreement reached in good faith by the Parties prior to the end of the accounting period in question based on an equitable method of determining such amounts that takes into account, in the applicable Region, variations in dosage units and the relative fair market value of each therapeutically active ingredient in the Combination Product. If the Parties are unable to reach such an agreement prior to the end of the applicable accounting period, then the Parties will refer such matter to a jointly selected Third Party with expertise in the pricing of pharmaceutical products that is not an employee, consultant, legal advisor, officer, director or stockholder of, and does not have any conflict of interest with respect to, either Party for resolution.

1.51 "Non-clinical Study". Non-clinical Study means any in vitro or in vivo study, other than a human clinical trial.

1.52 "Other Product". Other Product means (a) a Competing Product, (b) vTv's glucokinase activator, TTP399, or (c) any other small molecule compound whose primary therapeutic utility is the treatment of diabetes (provided, that if such small molecule compound is first discovered by vTv before the Effective Date of this Agreement, then whether the primary therapeutic utility is the treatment of diabetes shall be in the reasonable judgment of vTv). For the avoidance of doubt, no compound or product developed by any successor or assign of vTv (provided such successor or assign was not vTv Therapeutics Inc. or a Subsidiary of vTv prior to becoming vTv's successor or assign) shall be deemed an Other Product. For the further avoidance of doubt, the primary therapeutic utility of vTv's TTP488, in a Phase III Clinical Trial for the treatment of mild Alzheimer's disease as of the Effective Date, is Alzheimer's disease.

1.53 "Party". Party means either vTv or Huadong; "Parties" means both vTv and Huadong.

1.54 "Patent Rights". Patent Rights means the rights and interest in and to (i) all national, regional and international patents and pending patent applications, including provisional patent applications; (ii) all patent applications filed either from such patents, patent applications or provisional applications or from an application claiming priority from either of these, including divisionals, continuations, continuations-in-part, provisionals, converted provisionals and continued prosecution applications; (iii) any and all patents that have issued or in the future issue from the foregoing patent applications ((i) and (ii)), including utility models,

petty patents and design patents and certificates of invention; (iv) any and all extensions or restorations by existing or future extension or restoration mechanisms, including revalidations, reissues, re-examinations and extensions (including any supplementary protection certificates and the like) of the foregoing patents or patent applications ((i), (ii), and (iii)); and (v) any similar rights, including so-called pipeline protection or any importation, revalidation, confirmation or introduction patent or registration patent or patent of additions to any of such foregoing patent applications and patents.

1.55 "Payments". Payments means royalties, milestones and other amounts payable by Huadong to vTv pursuant to this Agreement.

1.56 "Person". Person means any natural person or any corporation, company, partnership, joint venture, firm, Governmental Authority or other entity, including a Party.

1.57 "Phase II Clinical Trial". Phase II Clinical Trial means a human clinical trial in any Region in the Territory, the principal purpose of which is a determination of safety and efficacy in the target patient population or a similar clinical study prescribed by the Regulatory Authorities pursuant to the applicable Laws or otherwise, which trial does not meet the definition of a Phase III Clinical Trial.

1.58 "Phase II MRCT". Phase II MRCT means a multi-region Phase II Clinical Trial including sites in the US, China Mainland, and other Regions in the Territory to be determined, the principal purpose of which is a determination of safety and efficacy of a Product that has the treatment of diabetes as its primary indication in the target patient population to satisfy CFDA requirements in order to start a registration Phase III Clinical Trial for such Product.

1.59 "Phase III Clinical Trial". Phase III Clinical Trial means a human clinical trial in any Region in the Territory on a sufficient number of subjects as required by the Regulatory Authority to establish that a pharmaceutical product is safe and efficacious for its intended use and to determine warnings, precautions, and adverse reactions that are associated with such pharmaceutical product in the dosage range to be prescribed, which trial is intended to support marketing approval of such Product pursuant to applicable Law.

1.60 "PRC". PRC means the People's Republic of China.

1.61 "Product". Product means any pharmaceutical preparation containing one or more Compounds as its only active ingredient(s) or any Combination Product. In any Region, a Product shall be considered a separate Product from other Products to the extent that it requires a separate Regulatory Approval.

1.62 "Regulatory Approval". Regulatory Approval means an approval by the applicable Regulatory Authority of an NDA.

1.63 "Regulatory Authority". Regulatory Authority means any Governmental Authority, including but not limited to the CFDA or the equivalent regulatory body in a Region other than China Mainland, with responsibility for granting licenses or approvals necessary for the marketing and sale of pharmaceutical products in a country or region.

1.64 "Regulatory Filings" means all (i) applications, registrations, licenses, authorizations, and approvals (including Regulatory Approvals, CTA, NDA and other regulatory filings); (ii) correspondence and reports submitted to or received from Regulatory Authorities during Development or Commercialization (including minutes and official contact reports relating to any communications with any Regulatory Authority) and all supporting documents with respect thereto, including all regulatory drug lists, advertising and promotion documents, adverse event files, regulatory inspections, and complaint files; and (iii) clinical data and data contained or relied upon in any of the foregoing, in each case ((i), (ii), and (iii)) relating to a Product.

1.65 "Segregate". Segregate means the implementation by vTv of a plan approved by Huadong to segregate the Competing Activities from any and all Development and Commercialization activities under this Agreement, including ensuring that: (i) no personnel involved in the Competing Activities has access to non-public plans or non-public information relating to the Development or Commercialization of Compounds and Products or any other Confidential Information of Huadong; and (ii) no personnel involved in the Development or Commercialization of Compounds and Products have access to non-public plans or information relating to the Competing Activities.

1.66 "Semi-annual Period". Semi-annual Period means each of the periods ending on June 30, and December 31 of any Calendar Year.

1.67 "Senior Executive". Senior Executive means, with respect to vTv, the Chief Executive Officer of vTv, or his or her designee, and, with respect to Huadong, the chairman of the board of directors of Huadong, or his or her designee. "Senior Executives" means the applicable officers of vTv and Huadong.

1.68 "Sublicensee". Sublicensee means a Third Party that has been granted a sublicense under the rights granted to Huadong pursuant to Section 2.1 of this Agreement. Third Parties that are permitted only to (a) distribute and resell a Product, (b) re-package a Product for resale, or (c) Manufacture a Compound or Product for supply to Huadong, its Affiliates or its Sublicensees (and have no other rights to Develop or Commercialize such Compound or Product) are not "Sublicensees".

1.69 "Subsidiary". Subsidiary means, with respect to any specified Person, any entity of which the specified Person (either alone or through or together with any other Subsidiary of such specified Person) directly or indirectly controls; provided, that the Subsidiaries of vTv shall be deemed to include the Subsidiaries of vTv Therapeutics Inc. other than vTv. For purposes of this definition, "control" means, with respect to a Person, possession, direct or indirect, of (a) the power to direct or cause direction of the management and policies of such Person (whether through ownership of securities or partnership or other ownership interests, by contract or otherwise), or (b) at least 50% of the voting securities (whether directly or pursuant to any vested and exercisable option, warrant or other similar arrangement) or other comparable equity interests.

1.70 "Territory". Territory means, for the purpose of this Agreement, (i) China Mainland, (ii) Hong Kong, (iii) Macau, (iv) Taiwan, (v) Thailand, (vi) Vietnam, (vii) Indonesia,

(viii) Malaysia, (ix) Philippines, (x) Singapore, (xi) Myanmar (Burma), (xii) Cambodia, (xiii) Laos, (xiv) Brunei, (xv) South Korea; and (xvi) Australia, each respectively a "Region".

1.71 "Third Party". Third Party means any Person other than vTv or Huadong or any of their respective Affiliates.

1.72 "TTP273". TTP273 means the molecule identified by vTv using vTv's internal reference number TTP234273, the structure of which vTv has disclosed to Huadong as of the Effective Date and is set forth in Exhibit B. For purposes of clarity, TTP273 shall be deemed to be a nonpeptidic, small molecule chemical GLP-1r Agonist.

1.73 "US". US means the United States of America.

1.74 "Valid Claim". Valid Claim means any claim from an issued and unexpired patent that (a) has not been revoked or held unenforceable or invalid by a final decision of a court or other Governmental Authority of competent jurisdiction and that has not been disclaimed, denied or admitted to be invalid or unenforceable through reissue or disclaimer or otherwise; or (b) a patent application; provided, that such a claim within a patent application has not been canceled, withdrawn, or abandoned or been pending for more than [***] years from the date of its first priority filing in the applicable country or region. For clarity, a claim of a patent that, pursuant to clause (b), had ceased to be a Valid Claim before it issued but that subsequently issues and is otherwise described by clause (a), shall again be considered to be a Valid Claim once it issues until it is no longer considered a Valid Claim in accordance with clause (a).

1.75 "vTv Intellectual Property". vTv Intellectual Property means the vTv Know-How and the vTv Patent Rights.

1.76 "vTv Know-How". vTv Know-How means all Know-How that is Controlled by vTv or any of its Subsidiary as of the Effective Date or thereafter during the Term (other than any Know-How included in Joint Intellectual Property) relating to, or that is necessary or useful for, the Development, Manufacture or Commercialization of Compounds or Products.

1.77 "vTv Patent Rights". vTv Patent Rights means all Patent Rights that are Controlled by vTv or any of its Subsidiary as of the Effective Date or thereafter during the Term (other than Joint Patent Rights) relating to, or that is necessary or useful for (or, with respect to patent applications, would be necessary or useful if such patent applications were to issue as patents), the Development, Manufacture or Commercialization of Compounds or Products. The vTv Patent Rights in the Territory existing as of the Effective Date are set forth on Schedule 9.1(e).

1.78 Additional Definitions. Each of the following definitions is set forth in the Section of this Agreement indicated below:

1.1

[***]6.3(a)
Abandoned Huadong Patents7.3(c)
Abandoned Joint Patents7.3(b)
Abandoned Patents7.3(a)
Acquirer12.8(c)

Adjusted Net Sales	6.5(a)
Administrator	12.2(b)(i)
Adverse Ruling	11.2
Agents	8.1
Agreement	Preamble
Alliance Manager	3.3(e)
Anti-Corruption Laws	9.5(a)
Arbitrators	12.2(b)(i)
Board of Directors	1.11(a)
Breaching Party	11.2
Claim	12.2(b)(i)
CNS Product	6.3(a)(iv)
Commencement Date	2.6(b)
Commercialization Report	4.2
Confidential Information	8.2
Confidentiality Agreement	8.2
Effective Date	Preamble
First Audit	6.7
Huadong	Preamble
Huadong [***] Notice	2.5(i)
Huadong Parties	10.2
Huadong Sole Inventions	7.2(a)
Indemnified Party	10.3(a)
Indemnifying Party	10.3(a)
Infringement Claim	7.4(a)
INN	7.9
JDC	3.3
JIPWG	7.1
Joint Inventions	7.2(b)
Joint IP Working Group	7.1
Joint Patent Rights	7.3(b)
Late Payment Notice	6.11
Manufacturing Technology Transfer Period	2.6(b)
Material Breach	11.2
Material Breach Notice	11.2
MRCT Development Plan	3.6(a)
MRCT Initiation Breach	11.2
Non-Breaching Party	11.2
Non-publishing Party	8.3
Other API	1.14
Paragraph IV Claim	7.10(a)
Product Marks	7.9
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Remedial Action	5.3(d)
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Safety Agreement5.3(a)(i)
Second Audit6.7
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Standard Redaction12.7
Term11.1
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Third Party Claims10.1
Third Party Licenses6.5(d)
USAN7.9
USANC7.9
Voting Stock1.11(a)
vTvPreamble
vTv Parties10.1
vTv Sole Inventions7.2(a)

1.1

1.79 Captions; Certain Conventions; Construction. All headings and captions herein are for convenience only and shall not be interpreted as having any substantive meaning. The Schedules to this Agreement are incorporated herein by reference and shall be deemed a part of this Agreement. Unless otherwise expressly provided herein or the context of this Agreement otherwise requires:

(a)words of any gender include each other gender;

(b)words such as “herein”, “hereof” and “hereunder” refer to this Agreement as a whole and not merely to the particular provision in which such words appear;

(c)words using the singular shall include the plural, and vice versa;

(d)the words “include,” “includes” and “including” shall be deemed to be followed by the phrase “but not limited to”, “without limitation”, “inter alia” or words of similar import;

(e)the word “or” shall be deemed to include the word “and” (i.e., shall mean “and/or”)

(f)references to “Article,” “Section,” “subsection”, “paragraph”, “clause” or other subdivision, or to a Schedule, without reference to a document, are to the specified provision or Schedule of this Agreement; and

(g)references to “$” or “dollars” shall be references to US Dollars.

This Agreement shall be construed as if the Parties drafted it jointly.

ARTICLE II
GRANTS OF RIGHTS

2.1 Grants of Rights.

(a)License Grant by vTv. Except as otherwise provided in Section 2.2, vTv (on behalf of itself and its Subsidiaries) hereby grants to Huadong an exclusive (even as to vTv and its Subsidiaries), royalty-bearing right and license, with the right to grant sublicense in accordance with Section 2.1(b), under the vTv Intellectual Property and vTv's interest in the Joint Intellectual Property, to (i) Develop Compounds and Products and (ii) Commercialize Products, in each case ((i) and (ii)) in the Field in the Territory.

(b)Sublicenses. Subject to vTv's prior written consent not to be unreasonably withheld, Huadong shall have the right to grant sublicenses (or further rights of reference) through multiple tiers under the licenses to vTv Intellectual Property and vTv's interest in the Joint Intellectual Property granted to Huadong under Section 2.1(a) to its Affiliates and to Third Parties (i) to Develop Compounds and Products, and (ii) to Commercialize Products, in each case, in the Field in the Territory; provided, however, that (i) any such sublicense shall be subject to all applicable terms and conditions of this Agreement and (ii) Huadong shall remain responsible for its sublicensee's compliance with the applicable terms and conditions of this Agreement. For the avoidance of doubt, Third Parties that are permitted only to (a) conduct Development activities on Huadong's behalf (i.e. Contract Research Organizations or Contract Manufacturing Organizations), (b) distribute and resell a Product, or (c) re-package a Product for resale are not deemed to be sublicenses and do not require vTv's prior written consent.

(c)License Grant by Huadong. Except as otherwise provided in this Section 2.1(c), Huadong hereby grants to vTv a non-exclusive, non-royalty-bearing right and license, with the right to grant sublicenses, under all Huadong Patent Rights, Huadong Know-How and Huadong's interest in the Joint Intellectual Property, to (i) Develop Compounds and Products and (ii) Commercialize Products, in each case ((i) and (ii)) in the Field outside of the Territory; provided, that the grant of rights to vTv under this Section 2.1(c) shall not include any right to any Other API that is a proprietary compound of Huadong or a Third Party (that is either licensed to or Controlled by Huadong) that is used in a Combination Product with a Compound; and provided, further, that, with respect to any Huadong Patent Rights or Huadong Know-How that Huadong acquires from a Third Party (by license or otherwise), the grant of rights to vTv under this Section 2.1(c) shall only be to the extent permitted, and shall be subject to any applicable terms and conditions, under Huadong's agreement with such Third Party, and vTv shall pay Huadong or such Third Party, as reasonably determined by Huadong, vTv's share of any payments required to be made to such Third Party in respect of vTv's exercise of such rights in the Field outside the Territory.

(d)Right to Reference. Each Party hereby grants to the other Party the right of reference to all Regulatory Filings pertaining to the Products in the Field submitted by or on behalf of such Party and/or its (sub)licensees. Huadong may use such right of reference to vTv's Regulatory Filings in the Field solely for the purpose of seeking, obtaining and maintaining Regulatory Approval of any Product in the Field in the Territory. vTv may use the right of reference to Huadong's Regulatory Filings in the Field solely for the purpose of seeking, obtaining and maintaining Regulatory Approval of any Product outside the Territory. To the extent that a right of reference is not recognized by a Regulatory Authority, each Party will make commercially reasonable efforts to further the other Party's regulatory obligations with respect to such Regulatory Authority.

2.2 Rights Retained by the Parties. Any rights of vTv or Huadong, as the case may be, not expressly granted to the other Party under the provisions of this Agreement shall be retained by such Party.

2.3 Section 365(n) of the Bankruptcy Code. All rights and licenses granted under or pursuant to any section of this Agreement, including the licenses granted under Section 2.1 or 11.5(d) to Patent Rights and Know-How (including any data included in the Know-How), are and will otherwise be deemed to be for purposes of Section 365(n) of the Bankruptcy Code, licenses of rights to "intellectual property" as defined in Section 101(35A) of the Bankruptcy Code. Each Party will retain and may fully exercise all of its respective rights and elections under the Bankruptcy Code. The Parties agree that each Party, as licensee of such rights under this Agreement, will retain and may fully exercise all of its rights and elections under the Bankruptcy Code or any other provisions of applicable Law outside the United States that provide similar protection for "intellectual property." The Parties further agree that, in the event of the commencement of a bankruptcy proceeding by or against the licensor Party under the Bankruptcy Code or analogous provisions of applicable Law outside the United States, the licensee Party will be entitled to a complete duplicate of (or complete access to, as the licensee Party deems appropriate) such intellectual property and all embodiments of such intellectual property, which, if not already in the licensee Party's possession, will be promptly delivered to it upon the licensee Party's written request thereof. Any agreements supplemental hereto will be deemed to be "agreements supplementary to" this Agreement for purposes of Section 365(n) of the Bankruptcy Code.

2.4 Exclusivity.

(a)Beginning on the Effective Date, neither Huadong nor any of its Subsidiaries shall, alone or in collaboration with any other Person, Commercialize any Competing Product in the Territory, or grant a license to any other Person to Commercialize any Competing Product in the Territory.

(b)If Huadong, either directly or through any Subsidiary, acquires a Competing Product that has received Regulatory Approval anywhere in the Territory, the sale or distribution of which would violate Section 2.4(a), through an acquisition, whether by merger, purchase of assets or equity, or otherwise, of the whole or substantially the whole of the business or assets of a Third Party, Huadong shall, within [***] days after the date of such acquisition, notify vTv of such acquisition. Huadong shall use Commercially Reasonable Efforts to (i) identify a Third Party purchaser to whom Huadong will divest its interest in such Competing Product and (ii) enter into a definitive agreement with such Third Party for such divestiture within [***] months after the closing of Huadong's acquisition thereof. So long as Huadong uses commercially reasonable efforts to divest the Competing Product in accordance with this Section 2.4(b), such acquisition shall not be deemed a violation of Section 2.4(a).

(c)If vTv, either directly or through any Subsidiary, acquires a Competing Product that has received Regulatory Approval anywhere within the Territory through an Acquisition, vTv shall, within [***] days after the date of such Acquisition, notify Huadong of such Acquisition. vTv shall use Commercially Reasonable Efforts to (i) identify a Third Party purchaser to whom vTv will divest its interest in such Competing Product and (ii) enter into a

definitive agreement with such Third Party for such divestiture within [***] months after the closing of vTv's acquisition thereof.

2.5 Huadong Right [***]. Prior to vTv [***], (i) vTv shall deliver to Huadong written notice (a "Huadong [***] Notice") that vTv; and (ii) if, within fifteen (15) Business Days of Huadong's receipt of a Huadong [***] Notice, Huadong delivers to vTv written notice [***], vTv shall [***].

2.6 Transfer of vTv Know-How.

(a)Promptly following the Effective Date, and with the objective of completing such transition within the [***] month period immediately following the Effective Date, vTv shall provide Huadong reasonable assistance in transitioning vTv Know-How (except for the vTv Know-How referred to under Section 2.6(b)), including all documentation and information listed in Schedule 2.6(a), to Huadong at no additional cost other than reimbursement of vTv's reasonable related out-of-pocket expenses. vTv shall reasonably cooperate with Huadong's requests in connection with such transfer so as not to delay the timelines set forth in the Development Plan. Such assistance shall include providing Huadong with reasonable amounts of consultation regarding the so transferred vTv Know-How.

(b)Prior to the date that is [***] Business Days after vTv's receipt of payment pursuant to Section 6.1 (the "Commencement Date"), vTv shall commence: (i) a full transfer to Huadong of all vTv Know-How (the "Manufacturing Process")[***], and (ii) provide [***] in support of the implementation of the Manufacturing Process [***]. For a period beginning on the Commencement Date and ending on the earlier of the date that is [***] months after the Commencement Date (the "Manufacturing Technology Transfer Period") or [***], vTv shall provide, and shall use commercially reasonable efforts to [***].

(c)vTv shall be responsible for [***]in connection with the Manufacturing Technology Transfer. Huadong shall be responsible for [***], and Huadong shall be responsible for [***] for purposes of implementing the Manufacturing Technology Transfer [***].

(d)If the Manufacturing Technology Transfer is not successfully completed within [***] after the end of Manufacturing Technology Transfer Period, then Huadong may terminate this Agreement pursuant to Section 11.3(b).

(e)If vTv makes any invention, discovery, or improvement related to the Manufacturing of a Compound or a Product in connection with Phase II MRCT, vTv shall promptly disclose such invention, discovery, or improvement to Huadong, and shall, at Huadong's request, transfer to Huadong the technology with respect to such invention, discovery, or improvement in the substantially same manner as provided in this Section 2.6.

2.7 Manufacturing. To the extent vTv licenses the vTv Intellectual Property for any territory outside the Territory to a Third Party, vTv agrees that it will identify Huadong to such Third Party as a preferred manufacturing partner for the Manufacture of any Product; provided, however, that Huadong acknowledges that vTv has no control over the ultimate decisions of any potential Third Party licensee in its selection of a Manufacturer for Manufacturing outside of the

Territory; provided, further, that Huadong shall offer a commercially reasonable manufacturing price for any such Third Party. vTv shall provide a written notice to Huadong with respect to any such license granted in accordance with this Section 2.7 within [***] days after the execution of such license agreement.

2.8 Generic Products. Neither Party shall introduce, or authorize any other Person to introduce, the first Product sold in generic form for a given Product in any country, but each Party shall be free to commence, or to authorize any other Person to commence, commercial sales of Products sold in generic form in any country upon the first sale of a Generic Product for such Product by a Third Party not authorized by such Party in such country.

ARTICLE III
DEVELOPMENT

3.1 General. From and after the Effective Date, and subject to the terms of this Agreement, including the requirements of ARTICLE V, Huadong shall be solely responsible for the Development of Compounds and Products in the Field in the Territory, including all costs and expenses relating thereto, and shall use Commercially Reasonable Efforts to perform such Development in accordance with the Development Plan.

3.2 Phase II MRCT. From and after the Effective Date, and subject to the terms of this Agreement, vTv shall conduct a Phase II MRCT, in collaboration with Huadong, and shall use Commercially Reasonable Efforts to conduct the Phase II MRCT in accordance with the Development Plan.

3.3 Joint Development Committee. The Parties hereby establish a Joint Development Committee (the "JDC") to oversee the Development of Products in the Field in the Territory and the Phase II MRCT in accordance with the Development Plan. The Development Plan may be amended from time to time by the JDC.

(a)Membership; Decision Making. The JDC shall comprise three (3) named representatives of Huadong and three (3) named representatives of vTv. Each Party shall notify the other within [***] days after the Effective Date of the appointment of its representatives to the JDC. Each Party may change its representatives to the JDC from time to time in its sole discretion, effective upon notice to the other Party of such change. These representatives shall have appropriate technical credentials, experience and knowledge, and ongoing familiarity with Development Plan activities as well as sufficient authority to take actions on behalf of a Party to the extent permitted under this Agreement. Subject to Huadong's prior consent not to be unreasonably withheld, vTv may include such Third Party representatives or consultants as non-voting participants in meetings and activities of the JDC, provided that, any such representative or Third Party shall be bound by obligations of confidentiality, non-disclosure and non-use consistent with those set forth herein, and prior to attending such meeting shall execute and deliver a confidentiality and non-disclosure agreement in a form satisfactory to Huadong. Additional representatives or consultants may from time to time, by mutual consent of the Parties, be invited to attend JDC meetings. Each Party shall have collectively one (1) vote in all decisions and the Parties shall attempt to make decisions by consensus. If the JDC cannot reach consensus on any matter within the scope of its oversight, then the dispute shall be referred to the

Parties' respective Senior Executives. If the Senior Executives cannot resolve the dispute within [***] Business Days after the dispute has been referred to them, then prior to the completion of the Phase II MRCT, vTv [***] or Huadong [***], and if following the completion of the Phase II MRCT, Huadong, shall, as applicable, have the final decision-making authority with respect to such dispute; provided, that (i) the party with final decision-making authority shall not exercise its final decision-making authority in any manner that (A) expands the non-decision making party's obligations or reduces the non-decision making party's rights under this Agreement or (B) expands the decision-making party's rights or reduces the decision-making party's obligations under this Agreement; (ii) any final decision made by the decision-making party with respect to a proposed clinical trial shall be in compliance with the applicable requirements of FDA, CFDA, or other applicable Regulatory Authority, and (iii) the decision-making party shall give reasonable consideration to any conclusions timely issued by a special scientific committee, which, at the non-decision-making party's request from time to time, shall be formed with an equal number of professionals nominated by each Party to consider any science-related matters not otherwise resolved by the JDC or the Senior Executives. Each Party shall bear its own expenses related to the attendance of such meetings by its representatives. A representative from [***] shall act as the chairperson of the JDC meetings. The chairperson shall conduct the following activities: (i) calling meetings of the JDC; (ii) preparing and issuing minutes of each such meeting; and (iii) preparing and circulating an agenda for the upcoming meeting.

(b)Meetings. The JDC shall meet in accordance with a schedule established by mutual written agreement of the Parties, but no less frequently than [***] times each Calendar Year during the Development by Huadong of Compounds or Products, with the location for such meetings alternating between vTv and Huadong facilities (or such other location as may be agreed by the Parties). Alternatively, the JDC may meet by means of teleconference, videoconference or other similar communications equipment. Meetings of the JDC shall be effective only if at least one (1) representative of each Party is participating.

(c)Scope of Joint Development Committee Oversight. The JDC's oversight responsibilities shall be limited to the Development of Compounds and Products in the Field in the Territory and the Phase II MRCT. Within such scope the JDC may: (i) confer regarding the status of Development Plan activities; (ii) review and approve amendments to the Development Plan; (iii) address such other matters relating to the Development of Compounds and Products in the Field in the Territory or to the Phase II MRCT (subject to Section 3.6) as either Party may bring before the JDC; and (iv) attempt to resolve any dispute within the JDC on an informal basis. The JDC shall have no authority to (x) determine whether any milestone event set forth in Sections 6.3 or 6.4 has been met, (y) make any decision expressly allocated herein to either or both Parties, or (z) amend any provision of this Agreement, other than the Development Plan pursuant to Section 3.1.

(d)Protocol Review and Approval. The JDC shall also review and approve any protocols at least [***] Business Days prior to the earlier of submission to a Regulatory Authority or the initiation of any clinical study. Such review and approval will occur, as necessary, outside the context of the JDC meetings set forth in Section 3.3(b).

(e)Alliance Manager. Each Party shall appoint a person(s) who shall oversee contact between the Parties for all matters related to Development of Compounds and/or Products between meetings of the JDC and shall have such other responsibilities as the Parties may agree in writing after the Effective Date (each, an "Alliance Manager"). Each Party may replace its Alliance Manager at any time by notice in writing to the other Party.

3.4 Exchange of Information Regarding Development.

(a)Each of Huadong and vTv shall regularly provide the other Party, through the JDC, with all material information and data Controlled by the first Party and relating to its Development and Commercialization of Compounds and Products (i.e. preclinical and clinical study reports, pharmacology reports, toxicology reports, CMC reports, formulation reports, and raw data). In addition, each of Huadong and vTv shall, promptly upon request by the other Party, provide such other Party with all reasonable additional information Controlled by the first Party relating to its Development and Commercialization of Compounds and Products within [***] days following the receipt of such request.

(b)During the Phase II MRCT, vTv shall provide Huadong, through the JDC, with all material information and data relating to the Phase II MRCT.

(c)In furtherance of the obligations in this Section 3.4, vTv shall use its commercially reasonable efforts to [***]. If vTv [***] Huadong shall [***].

3.5 vTv Specific Assistance. [***].

3.6 Phase II MRCT.

(a)Generally. Within [***] Business Days following the establishment of the JDC, the JDC shall hold a meeting to prepare a Development Plan for the Phase II MRCT (the "MRCT Development Plan"). vTv shall use Commercially Reasonable Efforts, in collaboration with Huadong, to conduct the Phase II MRCT in accordance with the MRCT Development Plan. vTv shall be the sponsor for the Phase II MRCT. Huadong shall be responsible for all costs and expenses incurred in connection with the Phase II MRCT; provided, however that vTv shall contribute not more than three million dollars ($3,000,000) in support of the Phase II MRCT. After the Effective Date and in connection with the Development Plan for the Phase II MRCT, Huadong and vTv shall negotiate in good faith to establish a system for coordinating payments in connection with the Phase II MRCT. The MRCT Development Plan shall set out activities to be undertaken under the Phase II MRCT, together with timelines for such activities. vTv shall initiate the US trials for the Phase II MRCT on or prior to [***].

(b)Communications and Filings with Regulatory Authorities. Under the oversight of the JDC and subject to Section 3.6, vTv shall be responsible for preparing and filing all Regulatory Filings with respect to the Phase II MRCT. All Regulatory Filings with respect to the Phase II MRCT shall be filed in the name of vTv, to the extent permitted by applicable Laws, and vTv shall be responsible for all communications and other dealings with the Regulatory Authorities relating to the Phase II MRCT; provided, however, that vTv shall provide Huadong with reasonable advanced notice of all meetings, conferences, discussions or other communications (whether face-to-face or by teleconference) with a Regulatory Authority, or

with any experts convened by a Regulatory Authority, in each case, in connection with the Phase II MRCT within [***] Business Days after the earliest of the occurrence, notice or scheduling of such meeting, including copies of all related documents and other relevant information relating to such meetings, conferences, discussions or other communications. Huadong shall have the right to have reasonable representation present at and to participate in such meetings, conferences, discussions and other communications. In addition, vTv shall promptly provide Huadong with: (i) copies of all regulatory correspondence to or from the Regulatory Authorities; (ii) advance copies of Regulatory Filings and a reasonable opportunity to comment in advance thereon (which comments vTv shall consider in good faith and incorporate to the extent reasonable); and (iii) reasonable responses to inquiries by Huadong regarding the Regulatory Filings and Regulatory Approvals for or with respect to any Product outside the Territory, including reasonable access to vTv's personnel in connection with such inquiries. vTv shall promptly provide Huadong with copies of all Regulatory Filings and other documents and correspondence in connection with the Phase II MRCT after it has been submitted to, or received from, the Regulatory Authorities. vTv shall use Commercially Reasonable Efforts to implement procedures reasonably designed to avoid any failure to provide any material required to be provided to Huadong under this Section 3.6(b) and to cure any such failure promptly after its discovery.

3.7 Huadong Regulatory Filings in the Territory. Other than in connection with the Phase II MRCT, (a) Huadong shall be responsible for, and be the owner of all Regulatory Filings in any Region of the Territory, to the extent permitted by applicable Laws, in connection with the Compound or Products, (b) Huadong shall keep vTv reasonably informed of regulatory developments related to the Products in the Territory and shall promptly notify vTv in writing of any decision by a Regulatory Authority in the Territory regarding any Product, and (c) Huadong shall notify vTv of any Regulatory Filings submitted to or received from any Regulatory Authority in the Territory and provide vTv electronic copies thereof within [***] days after submission or receipt, provided that at vTv's reasonable request, Huadong shall, at vTv's cost, prepare and provide vTv with English translations of all such Regulatory Filings.

ARTICLE IV
COMMERCIALIZATION

4.1 General. From and after the Effective Date, and subject to the terms of this Agreement, including the requirements of ARTICLE V, Huadong shall be solely responsible for the Commercialization of Products in the Field in the Territory, including all costs and expenses relating thereto.

4.2 Commercialization Reports. No later than the later of (a) [***] Business Days after the date Huadong files the first NDA for a Product in the Territory; or (b) [***] months following the Effective Date, and every [***] months thereafter, during the Royalty Term, Huadong shall provide a report with respect to each Product (a "Commercialization Report") to vTv summarizing Huadong's sales, marketing and promotional activities for such Product during the prior applicable period, including copies of the material visual aids and other material detail materials used in the promotion of such Product in any Region in the Territory, key opinion leader activities and projected pricing information, and a summary of the progress during the

applicable period against the planned Commercialization activities. Huadong shall reasonably respond to any vTv question about the contents of each such report.

ARTICLE V
DILIGENCE

5.1 Commercially Reasonable Efforts. During the Term, Huadong shall, directly or through its Subsidiaries or Sublicensees, use Commercially Reasonable Efforts to (a) [***] and (b) [***].

5.2 Failure to Meet Diligence Obligations. Huadong's failure to meet its obligations in any material respect under Section 5.1 shall be considered a material breach that may entitle vTv to terminate this Agreement in accordance with Section 11.2.

5.3 Regulatory Obligations.

(a)Adverse Events Reporting.

(i) Following the Effective Date, but in no event later than ninety (90) days prior to the initiation of Phase II MRCT, Huadong and vTv shall develop and agree to the worldwide safety and pharmacovigilance procedures for the Parties with respect to the Products, such as safety data sharing and exchange, Adverse Events reporting and prescription events monitoring in a written agreement (the "Safety Agreement"). Such agreement shall describe the coordination of collection, investigation, reporting, and exchange of information concerning Adverse Events or any other safety problem of any significance, and product quality and product complaints involving Adverse Events, sufficient to permit each Party, its Affiliates, licensees or sublicensees to comply with its legal obligations. The Safety Agreement shall be promptly updated if required by changes in legal requirements. Each Party hereby agrees to comply with its respective obligations under the Safety Agreement and to cause its Affiliates, licensees and sublicensees to comply with such obligations. To the extent there is any disagreement between this Section 5.3 or any related definitions and the Safety Agreement, the Safety Agreement shall control with respect to safety matters and this Agreement shall control with respect to all other matters.

(ii) Each of Huadong and vTv shall maintain an Adverse Event database for the Products in the Territory (in the case of Huadong) or outside the Territory (in the case of vTv), at its sole cost and expense, and shall be responsible for reporting quality complaints, Adverse Events and safety data related to the Products to the applicable Regulatory Authorities in the Territory (in the case of Huadong) or outside the Territory (in the case of vTv), as well as responding to safety issues and to all requests of Regulatory Authorities related to the Products in the Territory (in the case of Huadong) or outside the Territory (in the case of vTv). Each of Huadong and vTv shall provide reasonable access to, and the information contained in, such Party's Adverse Event database to the other Party in accordance with the Safety Agreement. Each Party shall provide the other Party with information in the Control of such first Party as necessary for the other Party to comply with its pharmacovigilance responsibilities in respect of the Products in the Territory, in accordance with the Safety Agreement.

(iii) Each Party shall be responsible for complying with all applicable Laws governing Adverse Events in the Territory (in the case of Huadong) or outside the Territory (in the case of vTv) that occur after the Effective Date. Each Party shall notify the other Party on a timely basis of any Adverse Events occurring at or reported by any clinical trial location at which such first Party (or its licensees or sublicensees) is responsible for performing clinical trials. Each Party shall submit copies of reports of Adverse Events to the other Party reasonably promptly with submission to the applicable Regulatory Authorities. Each Party shall notify the other in a timely manner and in any event within twenty-four (24) hours of receiving any serious Adverse Event reports from clinical trials that each Party (or its licensees or sublicensees) is monitoring, notice from a Regulatory Authority, independent review committee, data safety monitoring board or another similar clinical trial or post-marketing monitoring body alleging significant concern regarding a patient safety issue or other material information relevant to the safety or efficacy of any Product.

(b)No Harmful Actions. If either Party believes that the other Party is taking or intends to take any action with respect to a Product that could have a material adverse impact upon the regulatory status of any Product in the Territory (in the case of Huadong) or outside the Territory (in the case of vTv), such Party shall have the right to bring the matter to the attention of the JDC and the Parties shall discuss in good faith to resolve such concern. Without limiting the foregoing, unless the Parties otherwise agree: (i) Huadong shall not communicate with any Regulatory Authority having jurisdiction outside the Territory with respect to a Product, unless (A) so ordered by such Regulatory Authority, in which case Huadong shall immediately notify vTv of such order or (B) in connection with the Phase II MRCT pursuant to Section 3.6(b); (ii) Huadong shall not submit any Regulatory Filings or seek regulatory approvals for any Product outside the Territory; (iii) vTv shall not communicate with any Regulatory Authority having jurisdiction in the Territory with respect to a Product, unless (A) so ordered by such Regulatory Authority, in which case vTv shall immediately notify Huadong of such order, or (B) in connection with the Phase II MRCT; (d) vTv shall not submit any Regulatory Filings or seek regulatory approvals for any Product in the Territory except in connection with the Phase II MRCT. To the extent practicable, vTv shall provide Huadong with any information that reasonably could affect the Development or Commercialization of the Product in the Territory, prior to making such information public.

(c)Notification of Threatened Action. Each Party shall immediately notify the other Party of any information it receives regarding any threatened or pending action, inspection or communication by any Regulatory Authority, which may materially affect the safety or efficacy claims of any Product or the continued marketing of any Product. Upon receipt of such information, the Parties shall consult with each other in an effort to arrive at a mutually acceptable procedure for taking appropriate action.

(d)Remedial Actions. Each Party shall notify the other immediately, and promptly confirm such notice in writing, if it obtains information indicating that any Product may be subject to any recall, corrective action or other regulatory action by any Governmental Authority or Regulatory Authority (a "Remedial Action"). The Parties shall assist each other in gathering and evaluating such information as is necessary to determine the necessity of conducting a Remedial Action. Huadong shall have sole discretion with respect to any matters relating to any Remedial Action in the Territory, including the decision to commence such

Remedial Action and the control over such Remedial Action. The cost and expenses of any Remedial Action in the Territory shall be borne solely by Huadong. Huadong shall maintain, and shall ensure that its Subsidiaries and Sublicensees shall maintain, adequate records to permit the Parties to trace the manufacture, distribution and use of the Product in the Territory.

ARTICLE VI
FINANCIAL PROVISIONS

6.1 Initial License Payment. Huadong shall make the non-refundable, non-creditable payment to vTv in the amount of eight million dollars ($8,000,000), to be received within [***] Business Days after [***]. Huadong shall deliver to the bank or regulatory institutions such documentation and information not later than [***] Business Days following receipt from vTv of the items listed on Schedule 6.1. For the avoidance of doubt, (a) pursuant to Section 6.8, the payment under this Section 6.1 shall be inclusive of all applicable taxes and surcharges and (b) the cure period for payment breaches in Section 11.2 shall apply to the payment required by this Section 6.1.

6.2 Development and Commercialization Costs. For clarity, following the Effective Date, except as otherwise provided in this Agreement, Huadong shall be solely responsible for all costs it incurs in Developing and Commercializing Compounds and Products, including all Manufacturing costs.

6.3 Event Milestone Payments.

(a)Huadong shall pay to vTv the non-refundable, non-creditable, one-time payments set forth below not later than [***] Business Days after the earliest date on which the corresponding milestone event set forth below is achieved by Huadong or any of its Subsidiaries or Sublicensees with respect to a Compound or Product, as the case may be:

Milestone Event	Payment
(i)[***]	$[***]
(ii)[***]	$[***]
(iii)[***]	$[***]
(iv)Receipt of Regulatory Approval in China Mainland for a Product for a CNS disease indication (a "CNS Product"), [***].	$20,000,000

where "[***]" means [***].

(b)Each milestone payment set forth in Section 6.3(a) shall be paid at most once, even if more than one Compound or Product shall achieve the same milestone event.

(c)If, with respect to milestones (i), (ii) and (iii) set forth in Section 6.3(a), a later Development milestone event is achieved prior to the achievement of an earlier Development milestone event, then all milestone payments due and payable for the earlier Development milestone event, if not previously paid, shall become due and payable

simultaneously with the payment for achievement of the subsequent Development milestone event.

6.4 Sales Milestone Payments. In addition to all other amounts payable under this Agreement, Huadong shall pay to vTv non-refundable, non-creditable, one-time milestone payments based on Net Sales of Products in all Regions of the Territory, in the amounts provided below:

Milestone Event	Payment
(i)Aggregate Net Sales of all Products in all Regions of the Territory first exceeds $[***] in a Calendar Year	$[***]
(ii)Aggregate Net Sales of all Products in all Regions of the Territory first exceeds $[***] in a Calendar Year	$[***]
(iii)Aggregate Net Sales of all Products in all Regions of the Territory first exceeds $[***] in a Calendar Year	$[***]
(iv)Aggregate Net Sales of all Products in all Regions of the Territory first exceeds $[***] in a Calendar Year	$[***]

Each milestone payment set forth in this Section 6.4 shall be paid within the time period specified in Section 6.6 for such payment and shall be paid once only. If two (2) or more of the milestone events set forth in this Section 6.4 are achieved in the same Calendar Year, then Huadong shall pay each applicable milestone payment within the time period specified in Section 6.6 for each such payment.

6.5 Product Royalties.

(a)Royalty Rate. Subject to the remainder of this Section 6.5, Huadong shall pay to vTv royalties, on a Product-by-Product basis, on Adjusted Net Sales of Products in the Territory during each Calendar Year during the applicable Royalty Term as follows:

(i) [***]% of Calendar Year Adjusted Net Sales greater than $[***] and less than or equal to $[***] of such Product;

(ii) [***]% of Calendar Year Adjusted Net Sales greater than $[***] and less than or equal to $[***] of such Product;

(iii) [***]% of Calendar Year Adjusted Net Sales greater than $[***] and less than or equal to $[***] of such Product;

(iv) [***]% of all Calendar Year Adjusted Net Sales of such Product in excess of $[***].

where the "Adjusted Net Sales" of any Product in any Calendar Year are (i) in China Mainland, the Net Sales for such Product for such Calendar Year, and (ii) in each other Region, an amount equal to the excess of (A) [***] over (B) [***].

By way of example, if Adjusted Net Sales of Product by Huadong and its Subsidiaries and Sublicensees in a Calendar Year are $[***], Huadong will pay vTv a royalty of $[***], comprising $[***] on that portion of Adjusted Net Sales that is greater than $[***] and less than or equal to $[***], $[***] on that portion of Adjusted Net Sales that is greater than $[***] and less than or equal to $[***], $[***] on that portion of Net Sales that is greater than $[***] and less than or equal to $[***], and $[***] on that portion of Adjusted Net Sales that is in excess of $[***].

(b)Royalty Term and Adjustments. Huadong's royalty obligations to vTv under this Section 6.5 shall commence on a Region-by-Region and Product-by-Product basis on the Effective Date and shall expire on a Region-by-Region basis and Product-by-Product basis on the later of (i) expiration of all Legal Exclusivity as to such Product in such Region or (ii) the eighth (8th) anniversary of the date of the First Commercial Sale by Huadong or any of its Subsidiaries or Sublicensees to a non-Sublicensee Third Party of such Product in such Region (the "Royalty Term"); provided that, during any period within the Royalty Term, if any, remaining after the expiration of all Legal Exclusivity as to such Product in such Region, the royalties payable as to such Product in such Region under this Section 6.5 shall be reduced to [***] of the royalties otherwise payable as to such Product in such Region pursuant to Section 6.5(a). For the avoidance of doubt, Huadong shall have no obligation to pay any royalty with respect to Net Sales of any Product in any Region after the Royalty Term for such Product in such Region has expired.

(c)Royalty Adjustment for Generic Competition. If there is Generic Competition with respect to a particular Product in a particular Region, then, for so long as such Generic Competition exists with respect to such Product in such Region, the royalties payable as to such Product in such Region under this Section 6.5 shall be reduced to [***] of the royalties otherwise payable as to such Product in such Region pursuant to Section 6.5(a).

(d)Third Party Payments. If Huadong reasonably determines that it cannot fully exercise the rights granted to it under this Agreement in the Field in a Region of the Territory without infringing a Patent Right, trade secret, or other intellectual property right not licensed hereunder unless it obtains a license to such Patent Right, trade secret, or other intellectual property right from a Third Party and pays a royalty or other payment under such license (a "Third Party License") with respect to any Product in such Region, then, as between the Parties, Huadong shall have the first right, but not the obligation, to negotiate and obtain such Third Party License and [***] of any consideration paid under such Third Party License by Huadong, its Affiliates or Sublicensees shall be creditable against royalties payable to vTv hereunder with respect to such Product in the applicable Region; provided, however, that in no event shall such credit cause the royalties paid to vTv for such Product in such Region for such Calendar Year to be reduced to less than [***] of the amount that would otherwise be payable to vTv for such Product in such Region for such Calendar Year pursuant to Section 6.5(a).

(e)Royalty Adjustment for Compulsory License. If a court or a Governmental Authority of competent jurisdiction requires Huadong or any of its Affiliates or Sublicensees to grant a compulsory license to a Third Party permitting such Third Party to make and sell a Product in a Region in the Territory, then the royalties payable as to such Product in

such Region under this Section 6.5 shall be reduced to [***] of the royalties otherwise payable as to such Product in such Region pursuant to Section 6.5(a).

(f)Aggregate Royalty Reductions. Notwithstanding anything to the contrary in this Section 6.5, subject to Section 11.6, in no event shall the royalties otherwise payable under this Section 6.5 with respect to Adjusted Net Sales of any Product in any Region in any Calendar Year be reduced to less than [***] of the royalties payable under Section 6.5(a) with respect to Net Sales of such Product in such Region in such Calendar Year.

6.6 Reports; Payments. Within [***] days after the end of each [***] during which there are Net Sales giving rise to a payment obligation under Section 6.4 or 6.5, Huadong shall submit to vTv a report identifying, for each Product, the Net Sales for such Product for each Region in the Territory for such [***], any sales milestone and royalty payable to vTv and the basis for any reduction in royalties pursuant to any subsection of Section 6.5. Concurrently with each such report, Huadong shall pay to vTv all sales milestones and royalties payable by it under Sections 6.4 and 6.5. In addition, within [***] days after the end of each [***], Huadong shall deliver to vTv a report in a form mutually agreeable to both Parties detailing Net Sales and Adjusted Net Sales on a Product-by-Product and Region-by-Region basis. It is agreed by Huadong and vTv that if Huadong is required to report the sales of a Product on a [***] basis in a Region under the applicable Laws, then the reporting and payment obligations with respect to such Product under this Section 6.6 shall be changed from reporting and payment for each [***] to reporting and payment for each [***],

6.7 Books and Records; Audit Rights. Huadong shall keep complete and accurate records of the underlying revenue and expense data relating to the calculations of Adjusted Net Sales and payments required by Sections 6.4 and 6.5 in accordance with China GAAP and the internal policies and procedures of Huadong; provided, that at vTv's reasonable request and at vTv's sole cost and expense, Huadong shall prepare a conversion of the records in accordance with the International Financial Reporting Standards (IFRS). vTv shall have the right, once annually at its own cost and expense, to have an independent, certified public accounting firm, selected by vTv and approved by Huadong in its reasonable discretion, review any such records of Huadong in the location(s) where such records are maintained by Huadong upon reasonable notice (which shall be no less than [***]days prior notice) and during regular business hours and under obligations of strict confidence, for the sole purpose of verifying the basis and accuracy of payments made under Sections 6.4 and 6.5 within the [***] month period preceding the date of the request for review. The report of such accounting firm shall be limited to a certificate stating whether any report made or payment submitted by Huadong during such period is accurate or inaccurate and the actual amounts of Net Sales, and sales milestones and royalties due, for such period. Huadong shall receive a copy of each such report concurrently with receipt by vTv ("First Audit"). Should such inspection lead to the discovery of a discrepancy to vTv's detriment, and only to the extent that Huadong agrees with and accepts such conclusion under the First Audit, Huadong shall pay within [***] Business Days after its receipt from the accounting firm of the certificate the amount of the discrepancy plus interest calculated in accordance with Section 6.11. If Huadong does not agree with the conclusion of such report, vTv shall engage another accounting firm, selected by Huadong and approved by vTv in its reasonable discretion, at Huadong's expense to conduct the audit in accordance with Section 6.7 ("Second Audit"). If the conclusion of the First Audit is consistent with the conclusion of the

Second Audit, Huadong shall pay within [***] Business Days after its receipt from the accounting firm of the certificate the amount of the discrepancy plus interest calculated in accordance with Section 6.11. If the conclusion of the First Audit is not consistent with the conclusion of the Second Audit, the matter shall be referred to arbitration in accordance with Section 12.2(b). vTv shall pay the full cost of the review unless the underpayment of sales milestones or royalties is greater than [***] of the amount due for any applicable Calendar Year, in which case Huadong shall pay the reasonable cost charged by such accounting firm for such review. Any overpayment by Huadong revealed by an examination shall be fully creditable against future Payments.

6.8 Tax Matters. No Payments shall be reduced on account of any taxes or government surcharges attached to such taxes unless required by Law; provided, that Huadong shall be entitled to deduct and withhold from any Payments otherwise payable to vTv pursuant to this Agreement such amounts as it is required to deduct and withhold with respect to the making of such payment under any other applicable national, local or foreign tax Law. To the extent that amounts are so deducted or withheld by Huadong, such withheld amounts shall be (a) remitted by Huadong to the applicable Governmental Authority, and (b) deducted and treated for all purposes of this Agreement as having been paid to vTv in respect of which such deduction and withholding was made by Huadong. vTv alone shall be responsible for paying any and all taxes (other than withholding taxes, value-added taxes and all government surcharges attached to the value-added taxes deducted and withheld on vTv's behalf by Huadong in accordance with the previous sentence) levied on account of, or measured in whole or in part by reference to, any Payments vTv receives. The Parties will cooperate in good faith to obtain the benefit of any relevant tax treaties and applicable Law to minimize as far as reasonably possible any taxes that may be levied on any Payments. Notwithstanding the foregoing, if vTv is entitled under any applicable tax treaty or applicable Law to a reduction of the rate of, or the elimination of, applicable withholding tax or value-added tax, it may deliver to Huadong or the appropriate Governmental Authority (with the assistance of Huadong to the extent that this is reasonably required and is expressly requested in writing) the prescribed forms necessary to reduce the applicable rate of withholding tax or value-added tax, or to relieve Huadong of its obligation to withhold taxes, and Huadong shall apply the reduced rate of withholding tax or value-added tax, or dispense with withholding tax or value-added tax, as the case may be, provided that Huadong has received evidence of vTv's delivery of all applicable forms (and, if necessary, its receipt of appropriate governmental authorization) at least [***] days prior to the time that the Payment is due; provided, further, that if Huadong is able to obtain the prescribed forms necessary for obtaining exemption of the Chinese value-added tax, Huadong shall be responsible for delivering such prescribed forms to vTv. If, in accordance with the foregoing, Huadong withholds any amount, it shall make timely payment to the proper taxing authority of the withheld amount, and send to vTv proof of such payment within [***] days following that latter payment.

6.9 Payment Method and Currency Conversion. All Payments shall be made in US dollars in immediately available funds via either a bank wire transfer, an ACH (automated clearing house) mechanism, or any other means of electronic funds transfer, at Huadong's election, to a bank account specified by vTv in a notice at least [***] days before the payment is due. For the purposes of determining the achievement of any sales milestone payment under Section 6.4 or the amount of any royalties due for the relevant Calendar Year under Section 6.5, the amount of Net Sales in any foreign currency shall be converted into US dollars in accordance

with the prevailing rates of exchange for the relevant month for converting such first currency into such other currency used by Huadong's internal accounting systems, which are independently audited on an annual basis. Upon request by vTv, Huadong shall disclose the bases for the rates of exchange used for purposes of assuring that such rates reflect prevailing rates of exchange.

6.10 Blocked Payments. Huadong or its Affiliates shall take all actions required by applicable Laws for the purpose of transferring, or having transferred on its behalf, milestones, royalties or any other payments to vTv pursuant to this Agreement, including but not limited to filing or registration of this Agreement with the competent Government Authority and obtaining any required approval, permit or license for the payment transfer from the competent Government Authority. If by reason of applicable Laws (or the application thereof by any Government Authority) in any Region in the Territory, it becomes impossible or illegal for Huadong or its Affiliates or Sublicensees to transfer, or have transferred on its behalf, milestones, royalties or other payments to vTv or to Huadong or its Affiliates or Sublicensees, Huadong shall promptly notify vTv of the conditions preventing such transfer. To the extent any payments to vTv cannot be transferred pursuant to the preceding sentence, such amounts shall be deposited in local currency in the relevant Region to the credit of vTv in a recognized banking institution designated by vTv or, if none is designated by vTv within a period of [***] days upon Huadong's notification to vTv of the conditions preventing the transfer, in a recognized banking institution selected by Huadong or its Affiliate or Sublicensee, as the case may be, and identified in a notice given to vTv. If so deposited in a foreign country or region, Huadong shall provide, or cause its Affiliate or Sublicensee to provide, reasonable cooperation to vTv so as to allow vTv to assume control over such deposit as promptly as practicable.

6.11 Late Payments. If a Party shall fail to make a timely payment pursuant to the terms of this Agreement, the other Party shall provide written notice of such failure to the non-paying Party (a "Late Payment Notice"), and interest shall accrue on the past due amount starting on the date of the Late Payment Notice at the thirty (30) day US dollar London Interbank Offered Rate effective for the date that payment was due (as published in the Wall Street Journal) plus three percent (3%) per annum, computed for the actual number of days after the date of the Late Payment Notice that the payment was past due. For avoidance of doubt, Huadong and vTv agree that any late payment arising from such payment being blocked or delayed by reason of applicable Laws (or application thereof by any Government Authority) in any Region in the Territory (including in connection with the foreign exchange control) shall not be subject to this Section 6.11.

6.12 Net Sales Calculations. The Parties acknowledge and agree that, in the definition of "Net Sales," the discount applied to the gross amount billed or invoiced by Huadong is intended to [***]. The Parties agree from time to time during the Term, if reasonably requested by the other Party, to discuss in good faith [***].

ARTICLE VII
INTELLECTUAL PROPERTY OWNERSHIP, PROTECTION AND RELATED MATTERS

7.1 Joint IP Working Group. Promptly following the Effective Date, the Parties shall establish a joint working group consisting of at least one (1) designee of vTv and at least one (1) designee of Huadong, each of which shall have experience in the prosecution and enforcement of intellectual property rights in the pharmaceutical field (the "Joint IP Working Group" or "JIPWG"). Each Party may change its designee(s) on the JIPWG upon written notice to the other Party. The JIPWG shall be responsible for coordinating all activities and communications relating to the prosecution, maintenance and enforcement of Patent Rights and shall communicate and meet on an *ad hoc*, as-needed basis. The JIPWG shall strive to reach consensus; provided, that in exercising its rights under this ARTICLE VII, each Party shall implement or incorporate, absent a substantial reason to the contrary, all reasonable comments of the other Party.

7.2 Ownership of Inventions.

(a)Sole Inventions. Each Party shall exclusively own all inventions made solely by such Party, its employees, agents and consultants ("Sole Inventions"). Sole Inventions made solely by Huadong, its employees, agents and consultants are referred to herein as "Huadong Sole Inventions." Sole Inventions made solely by vTv, its employees, agents and consultants are referred to herein as "vTv Sole Inventions."

(b)Joint Inventions. The Parties shall jointly own all inventions made jointly by employees, agents and consultants of Huadong, on the one hand, and employees, agents and consultants of vTv, on the other hand, on the basis of each Party having an undivided interest in the whole ("Joint Inventions").

(c)Examples. As an illustrative example for the general principles set forth in Sections 7.2(a) and 7.2(b), [***] as part of the Manufacturing Technology Transfer pursuant to Section 2.6, if [***]is first carried out solely by employees, agents and consultants of Huadong, then any resulting invention shall be deemed a "Huadong Sole Invention." If [***] is first carried out jointly by employees, agents and consultants of Huadong, on the one hand, and employees, agents and consultants of vTv, on the other hand, then any resulting invention shall be deemed "Joint Invention." If [***] is first carried out solely by employees, agents and consultants of vTv, then any resulting invention shall be deemed a "vTv Sole Invention."

(d)Inventorship. For purposes of determining whether an invention is a Huadong Sole Invention, a vTv Sole Invention, or a Joint Invention, questions of inventorship shall be resolved in accordance with the applicable patent Laws in the jurisdiction where the invention is conceived and reduced to practice.

7.3 Prosecution and Maintenance of Patent Rights.

(a)Prosecution of vTv Patent Rights. With respect to vTv Patent Rights in the Territory, vTv and Huadong shall cooperate in connection with the continued prosecution and maintenance by vTv of such vTv Patent Rights, provided that vTv shall have final decision making authority with respect to any and all vTv Patent Rights in the Field in the Territory. The out-of-pocket costs and expenses incurred to obtain, prosecute and maintain vTv Patent Rights in the Territory shall be borne [***], and the out-of-pocket costs and expenses

incurred to obtain, prosecute and maintain vTv Patent Rights outside the Territory shall be borne [***]. If vTv files a new patent application anywhere in the world for which a vTv Patent Right in the Territory could be filed, then within [***] days of such filing, vTv shall notify Huadong and provide Huadong with a copy of such filings. vTv shall notify Huadong at least [***] days prior to the earliest deadline for entering into national phase with respect to any Patent Cooperation Treaty (PCT) application included in vTv Patent Rights. No later than [***] days prior to the earliest deadline to enter into the national phase, Huadong shall provide vTv with a list of Regions within the Territory in which Huadong would like vTv to file. vTv shall file international patent applications, or designate for national filing and file, in the Territory when requested by Huadong. vTv shall keep Huadong fully informed of all steps with regard to the preparation, filing, prosecution, and maintenance of vTv Patent Rights in the Territory, including by providing Huadong with a copy of all material communications to and from any patent authority in the Territory regarding such vTv Patent Right, and by providing Huadong drafts of any filings or responses to be made to such patent authorities in the Territory sufficiently in advance of submitting such filings or responses so as to allow for a reasonable opportunity for Huadong to review and comment thereon. vTv, its agents and attorneys shall implement or incorporate all comments of Huadong, absent a substantial reason to the contrary, regarding any aspect of such patent prosecutions. vTv shall not abandon any vTv Patent Rights in the Territory (the "Abandoned Patents") without at least [***] days' prior notice to Huadong. If vTv decides to abandon any vTv Patent Rights in the Territory, Huadong shall, at its sole expense, have the option to continue to prosecute and maintain the Abandoned Patents in vTv's name by providing a written notice to vTv. In such event, vTv shall promptly provide Huadong with the appropriate documents to continue to prosecute or maintain the Abandoned Patents in vTv's name. For avoidance of doubt, upon completion of such transfer, such Abandoned Patents shall continue to be a vTv Patent Right.

(b)Prosecution of Joint Patent Rights. Patent Rights Covering Joint Inventions are "Joint Patent Rights." On a worldwide basis, vTv shall be responsible for obtaining, prosecuting, and/or maintaining Joint Patent Rights Covering inventions conceived and first reduced to practice during the period starting from the Effective Date and ending upon completion of the Manufacturing Technology Transfer. Following the completion of the Manufacturing Technology Transfer, on a worldwide basis, Huadong shall be responsible for obtaining, prosecuting, and/or maintaining Joint Patent Rights Covering Joint Inventions conceived and first reduced to practice following completion of the Manufacturing Technology Transfer. The out-of-pocket costs and expenses incurred to obtain, prosecute and maintain Joint Patent Rights outside the Territory shall be borne [***], and the out-of-pocket costs and expenses incurred to obtain, prosecute and maintain Joint Patent Rights in the Territory shall be borne [***]. The prosecuting Party shall notify the non-prosecuting Party at least [***] days prior to the earliest deadline for entering into national phase with respect to any Patent Cooperation Treaty (PCT) application included in the Joint Patent Rights. No later than [***] days prior to the earliest deadline to enter into national phase, the prosecuting Party shall provide the other Party with a list of any Region (within the Territory, in the case that vTv is the prosecuting Party, or outside the Territory, in the case that Huadong is the prosecuting Party) in which the non-prosecuting Party would like the prosecuting Party to file. The prosecuting Party shall file international patent applications, or designate for national filing and file, (i) in the Territory when requested by Huadong in the case that vTv is the prosecuting Party and (ii) outside the Territory when requested by vTv in the case that Huadong is the prosecuting Party.

The prosecuting Party shall keep the non-prosecuting Party fully informed of all steps with regard to the preparation, filing, prosecution, and maintenance of Joint Patent Rights, including by providing the non-prosecuting Party with a copy of material communications to and from any patent authority regarding such Joint Patent Right, and by providing the non-prosecuting Party drafts of any material filings or responses to be made to such patent authorities sufficiently in advance of submitting such filings or responses so as to allow for a reasonable opportunity for the non-prosecuting Party to review and comment thereon. The prosecuting Party, its agents and attorneys shall consider in good faith all timely comments of the non-prosecuting Party regarding any aspect of such patent prosecutions. The prosecuting Party shall not abandon any Joint Patent Rights in the Territory (the "Abandoned Joint Patents") without at least [***] days' prior notice to the non-prosecuting Party. If the prosecuting Party decides to abandon any Joint Patent Rights, the non-prosecuting Party shall have the option to continue to prosecute and maintain the Abandoned Joint Patent Rights by providing a written notice to the prosecuting Party, subject to the prosecuting Party's prior written consent (such consent not to be unreasonably withheld, conditioned or delayed). Upon non-prosecuting party's written exercise of such option, the prosecuting Party shall promptly provide non-prosecuting party with the appropriate documents to allow non-prosecuting party to continue to prosecute or maintain such Abandoned Joint Patents in such Region. For avoidance of doubt, upon the completion of such transfer, such Abandoned Joint Patents shall continue to be a Joint Patent Right.

(c)Prosecution of Huadong Patent Rights. Huadong has the sole right, but not the responsibility, to obtain, prosecute and/or maintain the Huadong Patent Rights worldwide. Huadong shall notify vTv at least [***] days prior to the earliest deadline for entering into national phase with respect to any Patent Cooperation Treaty (PCT) application included in Huadong Patent Rights. No later than [***] days prior to the earliest deadline to enter into the national phase, vTv shall provide Huadong with a list of countries or regions outside the Territory in which vTv would like Huadong to file. Huadong shall file international patent applications, or designate for national filing and file, outside the Territory when requested by vTv, solely to the extent that vTv agrees in writing to bear [***] incurred to obtain, prosecute and maintain such Huadong Patent Rights outside the Territory. To the extent permitted by applicable Laws, if vTv agrees in writing to bear, and bears, [***]incurred to obtain, prosecute and maintain one or more families of Huadong Patent Rights outside the Territory, then on a patent family-by-patent family basis, Huadong shall keep vTv fully informed of all steps with regard to the preparation, filing, prosecution, and maintenance of such Huadong Patent Rights outside the Territory, including by providing vTv with a copy of material communications to and from any patent authority outside the Territory regarding such Huadong Patent Rights, and by providing vTv drafts of any material filings or responses to be made to such patent authorities outside the Territory sufficiently in advance of submitting such filings or responses so as to allow for a reasonable opportunity for Huadong to review and comment thereon. Huadong, its agents and attorneys shall consider in good faith all timely comments submitted by vTv pursuant to the immediately preceding sentence. If vTv has agreed in writing to bear, and has borne, [***] incurred to obtain, prosecute and maintain one or more families of Huadong Patent Rights outside the Territory, then Huadong shall not abandon such Huadong Patent Rights (the "Abandoned Huadong Patents") without at least [***] days' prior notice to vTv. If Huadong decides to abandon any Huadong Patent Rights outside the Territory with respect to which vTv has born [***] pursuant to the immediately preceding sentence, vTv shall have the option [***] to continue to prosecute and maintain such Abandoned Huadong Patents in Huadong's name by

providing a written notice to Huadong. In such event, Huadong shall promptly provide vTv with the appropriate documents to continue to prosecute or maintain the Abandoned Huadong Patents in Huadong's name. For avoidance of doubt, upon the completion of such transfer, such Abandoned Huadong Patents shall continue to be a Huadong Patent Right.

7.4 Third Party Infringement.

(a)Notice. Each Party shall promptly report in writing to the other Party during the Term any known or suspected (i) infringement of any of the vTv Patent Rights or Joint Patent Rights, or (ii) unauthorized use or misappropriation of any of the vTv Know-How or Joint Inventions, in the case of either clause (i) or clause (ii), that could reasonably be expected to impact the (A) Development, Manufacture, use or Commercialization of a Compound or Product in the Field in the Territory by Huadong, or (B) scope of the rights licensed to Huadong under ARTICLE II (an "Infringement Claim"), of which such Party becomes aware, and shall provide the other Party with all available evidence supporting such Infringement Claim.

(b)Initial Right to Enforce. Subject to Section 7.4(c), Huadong shall have the first right, but not the obligation, to initiate a suit, or take other appropriate action that it believes is reasonably required to protect (*i.e.*, prevent or abate actual or threatened infringement or misappropriation of) or otherwise enforce the vTv Intellectual Property and Joint Intellectual Property relating to a Compound or Product in the Field in the Territory, with respect to an Infringement Claim. Any such suit by Huadong shall be brought either in the name of vTv or its Affiliate, the name of Huadong or its Affiliate, or jointly by Huadong, vTv and their respective Affiliates, as may be required by the Law of the forum. For this purpose, vTv shall execute such legal papers and cooperate in the prosecution of such suit as may be reasonably requested by Huadong; provided that Huadong shall promptly reimburse all out-of-pocket expenses (including reasonable counsel fees and expenses) actually incurred by vTv in connection with such cooperation. For clarity, as between vTv and Huadong, (i) vTv shall have the sole right, but not the obligation, to protect vTv Intellectual Property against any suspected misappropriation or infringement that does not constitute an Infringement Claim and (ii) the Parties shall jointly determine by mutual agreement whether and how to protect Joint Intellectual Property against any suspected misappropriation or infringement that does not constitute an Infringement Claim, and the provisions of this ARTICLE VII shall not apply with respect thereto.

(c)Step-In Right. If Huadong does not initiate a suit or take other appropriate action that it has the initial right to initiate or take with respect to an Infringement Claim pursuant to Section 7.4(b), then vTv may, in its discretion, provide Huadong with notice of vTv's intent to initiate a suit or take other appropriate action. If vTv provides such notice and Huadong does not initiate a suit or take such other appropriate action within thirty (30) days after receipt of such notice from vTv, then vTv shall have the right to initiate a suit or take other appropriate action that it believes is reasonably required to protect the vTv Intellectual Property. Any suit by vTv shall be either in the name of vTv or its Affiliate, the name of Huadong or its Affiliate, or jointly by Huadong, vTv and their respective Affiliates, as may be required by the Law of the forum. For this purpose, Huadong shall execute such legal papers and cooperate in the prosecution of such suit as may be reasonably requested by vTv; provided, that vTv shall

promptly reimburse all out-of-pocket expenses (including reasonable counsel fees and expenses) actually incurred by Huadong in connection with such cooperation.

(d)Conduct of Certain Actions; Costs. The Party initiating suit with respect to an Infringement Claim shall have the sole and exclusive right to select counsel for, and otherwise control, any suit initiated by it pursuant to Section 7.4(b) or 7.4(c). The initiating Party shall assume and pay all of its own out-of-pocket costs incurred in connection with any litigation or proceedings initiated by it pursuant to Sections 7.4(b) and 7.4(c), including the fees and expenses of the counsel selected by it. The other Party shall have the right to participate, but not control, and be represented in, any such suit by its own counsel at its own expense.

(e)Recoveries. Any damages, settlements, accounts of profits, or other financial compensation recovered from a Third Party by the Party that assumes control over enforcing any Infringement Claim shall be allocated between the Parties as follows:

(i) first, the Party that assumes control over enforcing such Infringement Claim shall retain an amount equal to [***]; and

(ii) second, any remaining amount shall be [***] by the enforcing Party and paid [***] to the other Party.

7.5 Patent Invalidity Claim. Each of the Parties shall promptly notify the other in the event of any legal or administrative action by any Third Party against a vTv Patent Right, a Joint Patent Right, or a Huadong Patent Right in the Territory of which it becomes aware, including any nullity, revocation, reexamination or compulsory license proceeding. Huadong shall have the first right, but not the obligation, to defend against any such action involving a vTv Patent Right, a Joint Patent Right, or a Huadong Patent Right in its own name, and the costs of any such defense shall be at Huadong's expense. vTv, upon request of Huadong, agrees to join in any such action and to cooperate reasonably with Huadong; provided that Huadong shall promptly reimburse all out-of-pocket expenses (including reasonable counsel fees and expenses) actually incurred by vTv in connection with such cooperation. If Huadong does not defend against any such action involving such vTv Patent Right, a Joint Patent Right, or a Huadong Patent Right, then vTv shall have the right, but not the obligation, to defend such action and any such defense shall be at vTv's expense. Huadong, upon request of vTv, agrees to join in any such action and to cooperate reasonably with vTv, provided that vTv shall promptly reimburse all out-of-pocket expenses (including reasonable counsel fees and expenses) actually incurred by Huadong in connection with such cooperation.

7.6 Claimed Infringement. Each of the Parties shall promptly notify the other in the event a Party becomes aware that the practice by either Party of the vTv Patent Rights or Joint Patent Rights infringes the intellectual property rights of any Third Party in the Territory, and shall promptly provide the other Party with any notice it receives or has received from a Third Party related to such suspected infringement. Huadong shall have the first right, but not the obligation, to defend and control the defense of any such claim, suit, or proceeding at its own expense (but subject to deduction as provided below), using counsel of its own choice. vTv may participate in any such claim, suit, or proceeding with counsel of its choice at its own expense. Without limitation of the foregoing, if Huadong finds it necessary or desirable to join

vTv as a party to any such action, vTv shall execute all papers and perform such acts as shall be reasonably required. If Huadong elects (in a written communication submitted to vTv within a reasonable amount of time after notice of the alleged patent infringement) not to defend or control the defense of, or otherwise fails to initiate and maintain the defense of, any such claim, suit, or proceeding, within such time period as is necessary to ensure that vTv is not prejudiced by any such delay, vTv may conduct and control the defense of any such claim, suit, or proceeding at its own expense. Each Party shall keep the other Party reasonably informed of all material developments in connection with any such claim, suit, or proceeding. Any recoveries by Huadong in connection with defending any third party infringement claim under this Section 7.6 shall first be applied to [***]. Any remaining recoveries shall be allocated as set forth in Section 7.4(e) above.

7.7 Patent Term Extensions. Huadong shall have the exclusive right and obligation to seek patent term extensions or supplemental patent protection, including supplementary protection certificates, in any Region in the Territory in relation to the Products at Huadong's expense. vTv and Huadong shall cooperate in connection with all such activities, and Huadong, its agents and attorneys will give due consideration to all timely suggestions and comments of vTv regarding any such activities; provided that all final decisions shall be made by Huadong.

7.8 Patent Marking. Huadong shall comply with the patent marking statutes in each Region in the Territory in which the Product is sold by Huadong, its Subsidiaries or its Sublicensees.

7.9 Product Trademarks. Huadong will have the right to brand the Products in the Territory using trademarks, logos, and trade names it determines appropriate for the Products, which may vary by Region or within a Region (the "Product Marks"). Huadong will own all rights in the Product Marks in the Territory and will register and maintain the Product Marks in the Territory that it determines reasonably necessary, at Huadong's cost and expense. vTv will have the sole right to determine the international nonproprietary name of the Products, provided that, prior to Huadong's initiation of the Phase III Clinical Trial, vTv shall obtain the International Non-proprietary Name (INN) from the World Health Organization and the US Adopted Name (USAN) from the US adopted Names Council (USANC) as the generic name(s) for the Products. In the event that vTv fails to obtain the INN name prior to Huadong's initiation of the Phase III Clinical Trial, Huadong shall then have the right to determine and obtain the INN from the World Health Organization and the USAN from the USANC as the generic name(s) for the Products.

7.10 Certification under Drug Price Competition and Patent Restoration Act.

(a)Notice. If a Party becomes aware of any certification filed pursuant to 21 U.S.C. § 355(b)(2)(A) or 355(j)(2)(A)(vii)(IV) or its successor provisions or any similar provision in a country other than the US claiming that any vTv Patent Rights, Joint Patent Rights, or Huadong Patent Rights Covering a Product in the Field are invalid or otherwise unenforceable, or that infringement will not arise from the manufacture, use, import or sale of a product by a Third Party (a "Paragraph IV Claim"), such Party shall promptly notify the other Party in writing within [***] Business Days after its receipt thereof.

(b)Control of Response; Recoveries.

(i) Huadong shall have the first right, but not the obligation, to initiate and control patent infringement litigation for such Paragraph IV Claim in the Territory. Any suit by Huadong shall be brought either in the name of vTv or its Affiliate, the name of Huadong or its Affiliate, or jointly by Huadong, vTv and their respective Affiliates, as may be required by the Law of the forum. For this purpose, vTv shall execute such legal papers and cooperate in the prosecution of such suit as may be reasonably requested by Huadong; provided that Huadong shall promptly reimburse all out-of-pocket expenses (including reasonable counsel fees and expenses) actually incurred by vTv in connection with such cooperation. If Huadong elects not to assume control over litigating any Paragraph IV Claim in the Territory, Huadong shall notify vTv as soon as practicable but in any event not later than [***] days before the first action required to litigate such Paragraph IV Claim so that vTv may, but shall not be required to, assume sole control over litigating such Paragraph IV Claim using counsel of its own choice. Any suit by vTv shall be either in the name of vTv or its Affiliate, the name of Huadong or its Affiliate, or jointly by Huadong, vTv and their respective Affiliates, as may be required by the Law of the forum. For this purpose, Huadong shall execute such legal papers and cooperate in the prosecution of such suit as may be reasonably requested by vTv; provided that vTv shall promptly reimburse all out-of-pocket expenses (including reasonable counsel fees and expenses) actually incurred by Huadong in connection with such cooperation. Any compensation recovered as a result of such litigation shall be allocated as set forth in Section 7.4(e) above.

(ii) vTv shall have the first right, but not the obligation, to initiate and control patent infringement litigation for such Paragraph IV Claim outside the Territory. Any suit by vTv shall be brought either in the name of vTv or its Affiliate, the name of Huadong or its Affiliate, or jointly by Huadong, vTv and their respective Affiliates, as may be required by the Law of the forum. For this purpose, Huadong shall execute such legal papers and cooperate in the prosecution of such suit as may be reasonably requested by vTv; provided that vTv shall promptly reimburse all out-of-pocket expenses (including reasonable counsel fees and expenses) actually incurred by vTv in connection with such cooperation. Any compensation recovered as a result of such litigation shall be allocated as set forth in Section 7.4(e) above.

7.11 Privileged Communications. In furtherance of this Agreement, it is expected that Huadong and vTv will, from time to time, disclose to one another privileged communications with counsel, including opinions, memoranda, letters and other written, electronic and verbal communications. Such disclosures are made with the understanding that they shall remain confidential, that they will not be deemed to waive any applicable attorney-client or attorney work product or other privilege and that they are made in connection with the shared community of legal interests existing between vTv and Huadong, including the community of legal interests in avoiding infringement of any valid, enforceable patents of Third Parties and maintaining the validity of vTv Patent Rights and Huadong Patent Rights.

7.12 Foreign Filing Licenses. The Parties shall cooperate (i) to obtain any foreign patent filing licenses, and (ii) to first file any patent application(s) on a domestic invention in the country of origin, so as to comply with 35 U.S.C. §§181 to 188 or its successor provisions or any similar provision in a country other than the US.

ARTICLE VIII
CONFIDENTIAL INFORMATION

8.1 Treatment of Confidential Information. During the Term and for [***] years thereafter, each Party shall maintain Confidential Information (as defined in Section 8.2) of the other Party in confidence, and shall not disclose, divulge or otherwise communicate such Confidential Information to others (except for agents, directors, officers, employees, consultants, subcontractors, licensees, partners, Affiliates and advisors (collectively, "Agents") under obligations of confidentiality) or use it for any purpose other than in connection with the Development or Commercialization of Compounds or Products pursuant to this Agreement, and each Party shall exercise Commercially Reasonable Efforts to prevent and restrain the unauthorized disclosure of such Confidential Information by any of its Agents, which efforts shall be at least as diligent as those generally used by such Party in protecting its own confidential and proprietary information. Each Party will be responsible for a breach of this ARTICLE VIII by its Agents. For clarity, Huadong may disclose Confidential Information of vTv (a) to Governmental Authorities (i) to the extent desirable to obtain or maintain INDs or Regulatory Approvals for any Compound or Product within the Territory and (ii) in order to respond to inquiries, requests or investigations by Governmental Authorities; (b) to outside consultants, scientific advisory boards, managed care organizations, and non-clinical and clinical investigators to the extent necessary to Develop or Commercialize any Compound or Product; (c) to the extent useful to Develop or Commercialize any Compound or Product; and (d) to the extent necessary or useful in order to enjoy its rights under this Agreement (including to defend or prosecute litigation); provided that Huadong shall obtain the same confidentiality obligations from any Third Parties to which it discloses the Confidential Information of vTv as it obtains with respect to its own similar types of confidential information.

8.2 Confidential Information. "Confidential Information" means all trade secrets or other proprietary information, including any proprietary data and materials (whether or not patentable or protectable as a trade secret), regarding a Party's or its Affiliate's or licensor's technology, products, business, financial status or prospects or objectives regarding the Products that is disclosed by a Party to the other Party. All information disclosed prior to the Effective Date by vTv to Huadong pursuant to the Mutual Non-Disclosure Agreement by and between the Parties, dated as of December 19, 2016, as amended through the Effective Date (the "Confidentiality Agreement"), shall be deemed "Confidential Information" of vTv. For clarity, all data and information regarding Products and Compounds generated after the Effective Date by or on behalf of Huadong, its Subsidiaries or their Sublicensees, shall be deemed "Confidential Information" of Huadong. Notwithstanding the foregoing, there shall be excluded from the foregoing definition of Confidential Information any of the foregoing that:

(a)either before or after the date of the disclosure to the receiving Party is lawfully disclosed to the receiving Party by a Third Party without any violation of any obligation to the other Party; or

(b)either before or after the date of the disclosure to the receiving Party, becomes published or generally known to the public through no fault or omission on the part of the receiving Party or its Agents; or

(c)is independently developed by or for the receiving Party without reference to or reliance upon the disclosing Party's Confidential Information as demonstrated by contemporaneous written records of the receiving Party.

Notwithstanding the foregoing, the receiving Party may disclose the disclosing Party's Confidential Information if it is required to be disclosed to comply with applicable Laws, to defend or prosecute litigation or to comply with governmental regulations or the regulations or requirements of any stock exchange, provided that the receiving Party promptly provides prior notice of such disclosure to the other Party and uses Commercially Reasonable Efforts to avoid or minimize the degree of such disclosure.

8.3 Publications. The Parties recognize the desirability of publishing and publicly disclosing the results of clinical trials of pharmaceutical products. Accordingly, subject to coordination through designated representatives of each Party, the publishing Party shall be free to publicly disclose the results of clinical trials involving Compounds or Products conducted pursuant to this Agreement, subject to prior review by the non-publishing Party for issues of patentability and protection of its Confidential Information, in a manner consistent with all Laws applicable to the publishing Party and best industry practices. In addition, if either Party (the "Publishing Party") intends to publish articles in scientific or medical journals or to make presentations of the results of clinical trials involving Compounds or Products conducted pursuant to this Agreement, such Party shall provide the other Party (the "Non-publishing Party") through the designated representatives of each Party at its earliest opportunity with any proposed abstracts, manuscripts or summaries of presentations that cover the results of Development of any Compound or Product. The Non-publishing Party shall respond promptly through its designated representative, and in any event no later than [***] days after receipt of such proposed publication or presentation, or such shorter period as may be required by the publication. The Publishing Party agrees to allow a reasonable period (not to exceed [***] days) to permit filings for patent protection and to otherwise address issues of Confidential Information or related competitive harm to the reasonable satisfaction of the Non-Publishing Party. In addition, the Publishing Party will give due regard to comments furnished by the Non-publishing Party and such comments shall not be unreasonably rejected. The Publishing Party shall be responsible to assure that its Subsidiaries and licensees agree to equivalent undertakings in favor of the Non-publishing Party. All publications involving Compounds or Products pursuant to this Agreement shall be in accordance with any guidelines or strategies promulgated by the JDC, which shall include appropriate acknowledgement consistent with standard scientific practice of any contributions of each Party to the results being publicly disclosed.

8.4 Press Releases and Other Disclosures. The Parties hereby each approve the respective English language and Chinese language press releases set forth in Schedule 8.4 and will cooperate in the release thereof as soon as practicable after the Effective Date. The Parties also recognize that each Party may from time to time desire to issue additional press releases and make other public statements or disclosures regarding the subject matter of this Agreement. In such event, the Party desiring to issue an additional press release or make a public statement or disclosure shall provide the other Party with a copy of the proposed press release, statement or disclosure for review and approval in advance (except that neither Party shall have any obligation to disclose Confidential Information except to the extent required or permitted

pursuant to this ARTICLE VIII). No other public statement or disclosure concerning the existence or terms of this Agreement shall be made, either directly or indirectly, by either Party, without first obtaining the written approval of the other Party. Once any public statement or disclosure has been approved in accordance with this Section 8.4, then either Party may appropriately communicate information contained in such permitted statement or disclosure. Notwithstanding the foregoing provisions of this Section 8.4, Schedule 8.4 or of this ARTICLE VIII, a Party may (a) disclose the existence and terms of this Agreement where required, as reasonably determined by the disclosing Party, by applicable Law, by applicable stock exchange regulation or by order or other ruling of a competent court, (b) disclose the existence and terms of this Agreement under obligations of confidentiality to agents, advisors, contractors, investors and acquirors, and to potential agents, advisors, contractors, investors and acquirors, and (c) publicly announce any of the matters set forth in Schedule 8.4, provided that such announcements do not entail disclosure of non-public technical or scientific information (which, for clarity, excludes clinical trial results that are subject to disclosure pursuant to Section 8.3) and the announcing Party provides the other Party with a copy of the proposed text of such announcement sufficiently in advance of the scheduled release or publication thereof to afford such other Party a reasonable opportunity to review and comment upon the proposed text. To the extent a Party determines in good faith that it is required by applicable Law to publicly file, register or notify this Agreement with a Governmental Authority, including public filings pursuant to securities Laws, it shall provide the proposed redacted form of the Agreement to the other Party a reasonable amount of time prior to filing for the other Party to review such draft and propose changes to such proposed redactions. The Party making such filing, registration or notification shall incorporate any proposed changes timely requested by the other Party, absent a substantial reason to the contrary, and shall use commercially reasonable efforts to seek confidential treatment for any terms that the other Party timely requests be kept confidential, to the extent such confidential treatment is reasonably available consistent with applicable Law. Each Party shall be responsible for its own legal and other external costs in connection with any such filing, registration or notification.

ARTICLE IX
REPRESENTATIONS, WARRANTIES AND COVENANTS

9.1 vTv's Representations. vTv hereby represents and warrants as of the Effective Date as follows:

(a)vTv has the corporate power and authority to execute and deliver this Agreement and to perform its obligations hereunder. The execution, delivery and performance of this Agreement has been duly and validly authorized and approved by all necessary corporate action on the part of vTv. vTv has taken all other action required by Law, its certificate of incorporation or by-laws or any agreement to which it is a party or by which it or its assets are bound, to authorize such execution, delivery and performance. Assuming due authorization, execution and delivery on the part of Huadong, this Agreement constitutes a legal, valid and binding obligation of vTv, enforceable against vTv in accordance with its terms.

(b)The execution and delivery of this Agreement by vTv and the performance by vTv contemplated hereunder will not violate any US Law or, to vTv's knowledge, any Law of any Governmental Authority outside the US.

(c)Neither the execution and delivery of this Agreement nor the performance hereof by vTv requires vTv to obtain any permit, authorization or consent from any Governmental Authority or from any other Person, and such execution, delivery and performance by vTv will not result in the breach of or give rise to any termination of, rescission, renegotiation or acceleration under or trigger any other rights under any agreement or contract to which vTv may be a party that relates to the vTv Patent Rights or the vTv Know-How.

(d)To vTv's knowledge, vTv owns or possesses adequate licenses or other valid rights to use all Patent Rights and Know-How necessary to Develop and Manufacture TTP273 in the Territory and to use, sell, offer for sale and import Products containing TTP273 in the Territory. To vTv's knowledge, there is no actual or threatened infringement by a Third Party of any of the vTv Patent Rights, or any other infringement or threatened infringement by a Third Party that would adversely affect Huadong's rights under this Agreement. To vTv's knowledge, the Development, Manufacture, Commercialization, use, sale, offer for sale or importation by Huadong, or its Subsidiaries or Sublicensees, of the Product(s) containing TTP273 as Developed prior to the Effective Date does not and will not infringe or constitute a misappropriation or other violation of the rights of any Third Party. To vTv's knowledge, the issued patents encompassed within vTv Patent Rights are valid and enforceable patents and no Third Party has challenged the validity or enforceability of such patents (including through the institution or written threat of institution of interference, nullity, revocation or similar invalidity proceedings before the US Patent and Trademark Office or any equivalent foreign entity), and vTv is not aware of any reasonable basis for such a claim by a Third Party.

(e)Schedule 9.1(e) is a complete and correct list of all vTv Patent Rights in the Territory owned by vTv as of the Effective Date. No vTv Patent Right or vTv Know-How has been licensed to vTv.

(f)vTv is the sole and exclusive legal and beneficial owner of all the vTv Patent Rights identified on Schedule 9.1(e), free of any encumbrance, lien, or claim of ownership by any Third Party other than pursuant to the Loan Agreement, and vTv is entitled to grant the licenses thereto specified herein. All assignments to vTv of ownership rights relating to the vTv Patent Rights in the Territory are valid and enforceable. vTv has not previously assigned, transferred, licensed, conveyed or otherwise encumbered its right, title and interest in the vTv Intellectual Property in the Territory in a manner that conflicts with any rights granted to Huadong hereunder.

(g)The vTv Patent Rights in the Territory are being prosecuted in the respective patent offices in accordance with applicable Law. To vTv's knowledge, all applicable maintenance fees with respect to the vTv Patent Rights have been paid on or before the due date for payment.

(h)vTv has generated, prepared, maintained, and retained all Regulatory Filings that are required to be maintained or retained pursuant to and in accordance with good laboratory and clinical practice and applicable Law, and all such information is true, complete and correct and what it purports to be.

(i)In respect of the pending patent applications included in the vTv Patent Rights in the Territory, to its knowledge vTv has presented all required references, documents, or information of which it and the inventors are aware to the relevant patent examiner at the relevant patent office.

(j)To vTv's knowledge, each of the vTv Patent Rights in the Territory properly identifies each and every inventor of the claims thereof as determined in accordance with the laws of the jurisdiction in which such vTv Patent Right is issued or such application is pending. To vTv's knowledge, each Person who has or has had any rights in or to any vTv Intellectual Property in the Territory, has assigned and has executed an agreement assigning its entire right, title, and interest in and to such vTv Intellectual Property to vTv. To vTv's knowledge, no current officer, employee, agent, or consultant of vTv is in violation of any term of any assignment or other agreement regarding the protection of vTv Patent Rights in the Territory.

(k)There is no action, claim, demand, suit, proceeding, arbitration, grievance, citation, summons, subpoena, inquiry or investigation of any nature, civil, criminal, regulatory or otherwise, in law or in equity, pending or, to vTv's knowledge, threatened against vTv in connection with or relating to TTP273 or any vTv Patent Rights, vTv Know-How or the transactions contemplated by this Agreement.

(l)To vTv's knowledge, all Development activities conducted by vTv prior to the Effective Date have been and are being conducted in material compliance with experimental protocols, procedures and controls pursuant to generally accepted professional scientific standards, and applicable local, state and federal Laws, rules, and regulations, including applicable requirements of GLP and GCP, as applicable. vTv has not received any written notices from the FDA or any other Regulatory Authority requiring the termination, suspension or material modification of any clinical trials that have been or are currently being conducted by vTv. Neither vTv nor, to the knowledge of vTv, any of its directors, officers, employees, agents or subcontractors has been convicted of any crime or engaged in any conduct that has resulted in, or would reasonably be expected to result, in debarment by the FDA under 21 U.S.C. § 335a or any similar state or foreign Law.

(m)True, complete and correct copies (as of the Effective Date) of all material adverse information with respect to the safety and efficacy of the Compound and the Product known to vTv or any of its Affiliates have been provided to Huadong prior to the Effective Date. Except as disclosed by vTv to Huadong prior to the Effective Date, neither vTv nor any of its Affiliates is aware of anything that could materially adversely affect the acceptance or the subsequent approval, by any Regulatory Authority of any filing, application or request for Regulatory Approval.

(n)The representations and warranties of vTv in this Agreement, and the information, documents and materials furnished to vTv in connection with its period of diligence prior to the Effective Date, do not, taken as a whole, (i) contain any untrue statement of a material fact, or (ii) omit to state any material fact necessary to make the statements or facts contained therein, in light of the circumstances under which they were made, not misleading.

9.2 Huadong's Representations. Huadong hereby represents and warrants as of the Effective Date as follows:

(a)Huadong has the corporate power and authority to execute and deliver this Agreement and to perform its obligations hereunder. The execution, delivery and performance of this Agreement has been duly and validly authorized and approved by all necessary corporate action on the part of Huadong. Huadong has taken all other action required by Law, its certificate of incorporation or by-laws or any agreement to which it is a party or by which it or its assets are bound to authorize such execution, delivery and (subject to obtaining all necessary governmental approvals with respect to the Development and Commercialization of Compounds and Products) performance. Assuming due authorization, execution and delivery on the part of vTv, this Agreement constitutes a legal, valid and binding obligation of Huadong, enforceable against Huadong in accordance with its terms.

(b)The execution and delivery of this Agreement by Huadong and the performance by Huadong contemplated hereunder will not violate (subject to obtaining all necessary governmental approvals with respect to the continued Development and Commercialization of Compounds and Products) any PRC Law, or to Huadong's knowledge, any Law of any other Governmental Authority in the Territory (except for China Mainland).

(c)There is no action, claim, demand, suit, proceeding, arbitration, grievance, citation, summons, subpoena, inquiry or investigation of any nature, civil, criminal, regulatory or otherwise, in law or in equity, pending or, to the knowledge of Huadong, threatened against Huadong in connection with or relating to the transactions contemplated by this Agreement.

(d)Neither the execution and delivery of this Agreement nor the performance hereof by Huadong requires Huadong to obtain any permit, authorization or consent from any Governmental Authority (subject to obtaining all necessary governmental approvals with respect to the continued Development and Commercialization of Compounds and Products) or from any other Person, and such execution, delivery and performance by Huadong will not result in the breach of or give rise to any termination of, rescission, renegotiation or acceleration under or trigger any other rights under any agreement or contract to which Huadong may be a party that relates to the Products, Huadong Patent Rights or Huadong Know-How.

(e)Neither Huadong nor, to the knowledge of Huadong, any of its directors, officers, employees, agents or subcontractors has been convicted of any crime or engaged in any conduct that has resulted in, or would reasonably be expected to result, in debarment by the FDA under 21 U.S.C. § 335a or any similar state or foreign Law.

9.3 vTv Covenants. vTv covenants and agrees during the Term that:

(a)vTv shall comply, and cause its Subsidiaries to comply, and use commercially reasonable efforts to cause its Third Party manufacturers to comply, with all applicable Laws and all applicable cGMP, GCP, and GLP (or similar standards) in their conduct of the Development, Manufacturing, and Commercialization activities outside the Territory;

(b)vTv shall not grant to any Third Party any rights that would be inconsistent with Huadong's rights hereunder.

(c)Subject to Section 12.9, vTv shall not assign, transfer, convey or otherwise encumber its right, title and interest in the vTv Intellectual Property in a manner that conflicts with any rights granted to Huadong hereunder.

(d)vTv shall inform Huadong in writing immediately if it or any Person who is performing activities hereunder is debarred or is the subject of a conviction described in §335a (a) or (b) of the Generic Drug Enforcement Act of 1992, or if any action, suit, claim, investigation or legal or administrative proceeding is pending or, to the best of vTv's or its Affiliates' knowledge, is threatened, relating to the debarment or conviction of vTv or any Person performing services hereunder.

9.4 Huadong Covenants. Huadong covenants and agrees during the Term:

(a) Huadong shall comply, cause its Subsidiaries to comply, and require and use Commercially Reasonable Efforts to cause its Sublicensees to comply, with all applicable Laws and all applicable cGMP, GCP, GSP, and GLP (or similar standards) in their conduct of the Development, Manufacturing, and Commercialization activities under this Agreement; and

(b) Huadong shall not, shall cause its Subsidiaries not to transfer or divert, and shall use Commercially Reasonable Efforts to cause its Sublicensees not to transfer or divert, the Compound or Product to an entity other than Huadong, or an entity approved by Huadong, in each case in a manner that would cause the sale of such Compound or Product in the chain of distribution (from Huadong or its Subsidiaries or Sublicensees to the end user) to be excluded (except as an exception provided in the Net Sales definition) in the calculation of Net Sales, provided that for each unit of the Compound and/or Product, the inclusion of such sales in the calculation of Net Sales shall occur only once.

Upon reasonable notification, but no more than annually (provided that the foregoing frequency limit shall not apply if vTv has cause), vTv shall have the right to conduct audits of Huadong, and Huadong shall procure such right for vTv to audit Huadong's Subsidiaries and shall use Commercially Reasonable Efforts to procure such right for vTv to audit Huadong's Sublicensees (either directly or through Huadong and its designee), to ensure compliance with Section 9.4(a) and Section 9.4(b).

9.5 Compliance with Anti-Corruption Laws. Notwithstanding anything to the contrary in the Agreement, each of Huadong and vTv hereby agrees that:

(a)it will not, in the performance of this Agreement, perform any actions that are prohibited by local and other anti-corruption laws (including the provisions of the U.S. Foreign Corrupt Practices Act, collectively "Anti-Corruption Laws") that are applicable to one or both Parties to the Agreement;

(b)it will not, in the performance of this Agreement, directly or indirectly, make any payment, or offer or transfer anything of value, or agree or promise to make any payment or offer or transfer anything of value, to a government official or government employee, to any political party or any candidate for political office or to any other Third Party with the purpose of influencing decisions related to either Party and/or its business in a manner that would violate Anti-Corruption Laws;

(c)it will, on an annual basis upon request by the other Party, verify in writing that to the best of such Party's knowledge, there have been no violations of Anti-Corruption Laws by such Party or its Subsidiaries, or their respective employees or subcontractors in the performance of the Agreement, or will provide details of any exception to the foregoing; and

(d)it will maintain records (financial and otherwise) and supporting documentation related to the subject matter of the Agreement in order to document or verify compliance with the provisions of this Section 9.5, and upon request of the other Party, up to once per year and upon reasonable advance notice, will provide a Third Party auditor mutually acceptable to the Parties with access to such records for purposes of verifying compliance with the provisions of this Section 9.5. Acceptance of a proposed Third Party auditor may not be unreasonably withheld by either Party. It is expressly agreed that the costs related to the Third Party auditor will be fully paid by the Party requesting such audit, and that any auditing activities may not unduly interfere with the normal business operations of the Party to be audited, or its Subsidiaries or Sublicensees. The Party to be audited may require the Third Party auditor to enter into a reasonable confidentiality agreement in connection with such an audit.

9.6 Language. The Parties agree that all communications, interactions, reporting, documentation, and dispute resolution to be conducted pursuant to this Agreement shall be in English.

9.7 No Warranty. EXCEPT AS OTHERWISE EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER PARTY MAKES ANY REPRESENTATION AND EXTENDS NO WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED. IN PARTICULAR, BUT WITHOUT LIMITATION, EXCEPT AS OTHERWISE EXPRESSLY SET FORTH IN THIS AGREEMENT, vTv MAKES NO REPRESENTATION AND EXTENDS NO WARRANTY CONCERNING WHETHER TTP273 IS FIT FOR ANY PARTICULAR PURPOSE OR SAFE FOR HUMAN CONSUMPTION.

ARTICLE X
INDEMNIFICATION

10.1 Indemnification in Favor of vTv. Huadong shall indemnify, defend and hold harmless the vTv Parties (as hereinafter defined) from and against any and all Losses incurred, suffered or sustained by any of the vTv Parties, or to which any of the vTv Parties becomes subject as a result of any Third Party claim, action, suit, proceeding, liability or obligation (collectively, "Third Party Claims"), arising out of, relating to or resulting from:

(a)any misrepresentation or breach of any representation, warranty, covenant or agreement made by Huadong in this Agreement;

(b)in the case of Third Party Claims only, the Development or Commercialization of Compounds or Products by Huadong, its Subsidiaries, licensees or sublicensees in the Territory; or

(c)the gross negligence or willful misconduct of any of the Huadong Parties (as hereinafter defined) in connection with Huadong's performance of this Agreement.

For purposes of this ARTICLE X, "vTv Parties" means vTv, its Affiliates and their respective agents, directors, officers, and employees; provided, that, if the vTv Party seeking indemnification under this ARTICLE X is a shareholder, then the foregoing indemnification obligation shall be limited to Losses to the extent arising from Third Party Claims based on the circumstances described in clauses (a)-(c) above (as applicable) and defenses thereof based on the circumstances described in clauses (a)-(c) above (as applicable), and shall not include Losses to the extent arising from any claim or defense relating to such vTv Party's status as a shareholder.

The indemnification obligations set forth in this Section 10.1 shall not apply to the extent that any Loss is the result of (i) a breach of this Agreement by vTv or (ii) the gross negligence or willful misconduct of such vTv Party.

10.2 Indemnification in Favor of Huadong. vTv shall indemnify, defend and hold harmless the Huadong Parties from and against any and all Losses incurred, suffered or sustained by any of the Huadong Parties, or to which any of the Huadong Parties becomes subject as a result of any Third Party Claim, arising out of, relating to or resulting from:

(a)any misrepresentation or breach of any representation, warranty, covenant or agreement made by vTv in this Agreement;

(b)the gross negligence or willful misconduct of any of the vTv Parties in connection with vTv's performance of this Agreement; or

(c)in the case of Third Party Claims only, the Development or Commercialization of Compounds or Products by vTv, its Subsidiaries, licensees or sublicensees outside of the Territory.

For purposes of this ARTICLE X, "Huadong Parties" means Huadong, its Affiliated and their respective agents, directors, officers, and employees provided that, if the Huadong Party seeking indemnification under this ARTICLE X is a shareholder, then the foregoing indemnification obligation shall be limited to Losses to the extent arising from Third Party Claims based on the circumstances described in clauses (a)-(c) above (as applicable) and defenses thereof based on the circumstances described in clauses (a)-(c) above (as applicable), and shall not include Losses to the extent arising from any claim or defense relating to such Huadong Party's status as a shareholder.

The indemnification obligations set forth in this Section 10.2 shall not apply to the extent that any Loss is the result of (i) a breach of this Agreement by Huadong, or (ii) the gross negligence or willful misconduct of such Huadong Party.

10.3 General Indemnification Procedures. Subject to Section 7.4(b) above:

(a)All indemnification claims in respect of a Party, its Affiliates, or its or their respective agents, directors, officers or employees shall be made solely by such Party to this Agreement (the "Indemnified Party"). An Indemnified Party seeking indemnification pursuant to this ARTICLE X shall give prompt notice to the Party from whom such indemnification is sought (the "Indemnifying Party") of any Losses or discovery of fact upon which such

Indemnified Party intends to base a request for indemnification under this ARTICLE X, or the commencement or assertion of any Third Party Claim (which in no event includes any claim by any Huadong Party or any vTv Party) in respect of which indemnity may be sought hereunder, and shall give the Indemnifying Party such information with respect to any indemnified matter as the Indemnifying Party may reasonably request.

(b)An Indemnified Party shall not make any admission concerning any Third Party Claim, unless such admission is required by applicable Law or legal process, including in response to questions presented in depositions or interrogatories. Any admission made by the Indemnified Party or the failure to give such notice shall relieve the Indemnifying Party of any liability hereunder only to the extent that the ability of the Indemnifying Party to defend such Third Party Claim is prejudiced thereby (and no admission required by applicable Law or legal process shall be deemed to result in prejudice). The Indemnifying Party shall assume and conduct the defense of such Third Party Claim, with counsel selected by the Indemnifying Party and reasonably acceptable to the Indemnified Party. Subject to the initial and continuing satisfaction of the terms and conditions of this ARTICLE X, the Indemnifying Party shall have full control of such Third Party Claim, including settlement negotiations and any legal proceedings. If the Indemnifying Party does not assume the defense of such Third Party Claim in accordance with this Section 10.3, the Indemnified Party may defend the Third Party Claim at the Indemnifying Party's reasonable cost and expense. If both Parties are Indemnifying Parties with respect to the same Third Party Claim, the Parties shall determine by mutual agreement, within twenty (20) days following their receipt of notice of commencement or assertion of such Third Party Claim (or such lesser period of time as may be required to respond properly to such claim), which Party shall assume the lead role in the defense thereof. Should the Indemnifying Parties be unable to mutually agree on which of them shall assume the lead role in the defense of such Third Party Claim, both Indemnifying Parties shall be entitled to participate in such defense through counsel of their respective choosing.

(c)Any Indemnified Party or Indemnifying Party not managing the defense of a Third Party Claim shall have the right to participate in (but not control), at its own expense (subject to the immediately succeeding sentence), the defense. The Indemnifying Party managing the defense shall not be liable for any litigation cost or expense incurred, without its consent, by the Indemnified Party where the action or proceeding is under the control of such Indemnifying Party; provided, however, that if the Indemnifying Party managing the defense fails to take reasonable steps necessary to defend such Third Party Claim, the Indemnified Party may assume its own defense, and the Indemnifying Party managing the defense will be liable for all reasonable costs or expenses paid or incurred in connection therewith.

(d)The Indemnifying Party shall not consent to a settlement of, or the entry of any judgment against an Indemnified Party arising from any such Third Party Claim to the extent such Third Party Claim involves equitable or other non-monetary relief from the Indemnified Party. No Party shall, without the prior written consent of the other Party or the Indemnified Party, enter into any compromise or settlement that commits the other Party or the Indemnified Party to take, or to forbear to take, any action.

(e)The Parties shall cooperate in the defense or prosecution of any Third Party Claim and shall furnish such records, information and testimony, and attend such

conferences, discovery proceedings, hearings, trials and appeals, as may be reasonably requested in connection therewith; provided, however, that the Indemnifying Party shall reimburse the Indemnified Party for any out-of-pocket expenses actually and reasonably incurred in connection with any such cooperation.

(f)Any indemnification hereunder shall be made net of any insurance proceeds actually recovered by the Indemnified Party from unaffiliated Third Parties; provided, however, that if, following the payment to the Indemnified Party of any amount under this ARTICLE X, such Indemnified Party recovers any such insurance proceeds in respect of the claim for which such indemnification payment was made, the Indemnified Party shall promptly pay an amount equal to the amount of such proceeds (but not exceeding the amount of such net indemnification payment) to the Indemnifying Party.

(g)The Parties agree and acknowledge that the provisions of this ARTICLE X represent the Indemnified Party's exclusive recourse with respect to any Losses for which indemnification is provided to the Indemnified Party under this ARTICLE X.

10.4 Insurance. During the Term and thereafter for so long as a Third Party Claim may be brought for which an Indemnifying Party must indemnify the Indemnified Party pursuant to Sections 10.1 and 10.2, the Indemnifying Party shall obtain or maintain, at its sole cost and expense, product liability insurance in amounts that are reasonable and customary in the pharmaceutical industry in the respective Territory and in accordance with applicable Law. Such product liability insurance shall insure against all liability, including product liability and property damage arising out of the Development, use or Commercialization of Compounds and Products. Without limiting the generality of the foregoing, the Indemnified Party shall maintain comprehensive general liability insurance, including product liability insurance, to cover its activities and, unless its Subsidiaries and Sublicensees maintain comparable coverage, the activities of its Subsidiaries and Sublicensees, with respect to Compounds and Products. The Indemnified Party shall provide satisfactory evidence of adequate insurance coverage to the Indemnifying Party upon the request of the Indemnifying Party prior to the Effective Date and, upon the written request of the Indemnifying Party, concurrent with any renewal or replacement of such coverage.

ARTICLE XI
TERM AND TERMINATION

11.1 Term. The term of this Agreement (the "Term") shall commence on the Effective Date and, unless earlier terminated as provided in this ARTICLE XI, shall continue in full force and effect, on a Region-by-Region and Product-by-Product basis until there is no remaining royalty obligation in such Region with respect to such Product, at which time (unless earlier terminated) this Agreement shall expire with respect to such Product in such Region and the grants in Sections 2.1(a) and 2.1(b) shall become fully-paid, royalty-free, and irrevocable with respect to such Product in such Region. In addition, upon the expiration of the last Royalty Term, the grants in Sections 2.1(a) and 2.1(b) shall become fully-paid, royalty-free, and irrevocable with respect to all Products and Compounds and this Agreement shall otherwise terminate.

11.2 Termination for Cause. If either Party (the "Non-Breaching Party") believes that the other Party (the "Breaching Party") has materially breached one or more of its material obligations under this Agreement (a "Material Breach"), then the Non-Breaching Party may give the Breaching Party notice of such Material Breach (a "Material Breach Notice") specifying the nature of the breach. If the Breaching Party does not dispute that it has committed a Material Breach, then, if the Breaching Party fails to cure such breach, or fails to take steps as would be considered reasonable to effectively cure such breach, within [***] after receipt of the Material Breach Notice, the Non-Breaching Party may terminate this Agreement upon written notice to the Breaching Party. If the Breaching Party disputes that it has committed a Material Breach, the dispute shall be resolved pursuant to Section 12.2. If, as a result of the application of such dispute resolution procedures, the Breaching Party is determined to have committed a Material Breach (an "Adverse Ruling"), then, if the Breaching Party fails to complete the actions specified by the Adverse Ruling to cure such breach within [***] after such ruling or such longer period as specified in the Adverse Ruling, the Non-Breaching Party may terminate this Agreement upon written notice to the Breaching Party. The right of either Party to terminate this Agreement as set forth in this Section 11.2 shall not be affected in any way by its waiver of, or failure to take action with respect to, any previous default. Notwithstanding the foregoing, the Parties acknowledge and agree that (a) vTv's failure to initiate the US trials for the Phase II MRCT on or prior to [***] after the date that CFDA has issued the approval for the conduct of the Phase II MRCT in China Mainland (an "MRCT Initiation Breach") shall constitute a "Material Breach," subject to immediate termination, and, upon occurrence of such Material Breach, Huadong may immediately terminate this Agreement upon delivery of an applicable Material Breach Notice to vTv, (b) Huadong's failure to make any payment in accordance with ARTICLE VI shall constitute a "Material Breach," and, upon occurrence of such Material Breach and delivery of an applicable Material Breach Notice to Huadong, if Huadong fails to cure such breach within [***] after receipt of such Material Breach Notice, vTv may terminate this Agreement upon written notice to Huadong, and (c) without limitation in respect of any other obligation under this Agreement, Huadong's obligations pursuant to Sections 2.4(a) and 2.4(b) shall constitute "material obligations" for purposes of the definition of "Material Breach." Notwithstanding anything to the contrary in this Section 11.2, (i) if a Material Breach pertains only to facts relating to one or more Regions other than China Mainland, then, pursuant to this Section 11.2, the Non-Breaching Party shall have a right to terminate this Agreement only with respect to such Regions and (ii) if a Material Breach pertains to facts relating to China Mainland, then, pursuant to this Section 11.2, the Non-Breaching Party shall have a right to terminate this Agreement in its entirety. The Regions or the Territory (as applicable) with respect to which the Non-Breaching Party exercises its termination right pursuant this Section 11.2 is referred to as the "Terminated Region."

11.3 Additional Termination Rights for Huadong.

(a)Termination for Convenience. At any time (i) prior to the initiation of the Phase II MRCT, (ii) following the completion of the Phase II MRCT, or (iii) following the Phase II MRCT being terminated by the applicable Regulatory Authority, Huadong may terminate this Agreement in its entirety for any reason or no reason upon [***] days prior written notice to vTv.

(b)Termination for Failure of Manufacturing Technology Transfer. Huadong may terminate this Agreement for the reasons set forth in Section 2.6(d).

(c)Termination for Failure to Obtain Loan Agreement Consent. Huadong may immediately terminate this Agreement (without any of the consequences set forth in Section 11.5 or Section 11.6) if it has not received the items listed on Schedule 6.1 within [***] after the Effective Date.

11.4 Termination for Insolvency. This Agreement may be terminated by a Party upon written notice to the other Party (a) if the other Party shall make an assignment for the benefit of its creditors, file a petition in bankruptcy, petition or apply to any tribunal for the appointment of a custodian, receiver or trustee for it or a substantial part of its assets, or shall commence any proceeding under any bankruptcy, reorganization, readjustment of debt, dissolution or liquidation law or statute of any jurisdiction, whether now or hereafter in effect; or (b) if there shall have been filed against the other Party any such *bona fide* petition or application, or any such proceeding shall have been commenced against it, in which an order for relief is entered or that remains undismissed or unstayed for a period of ninety (90) days or more; or (c) if the other Party by any act or omission shall indicate its consent to, approval of or acquiescence in any such petition, application or proceeding or order for relief or the appointment of a custodian, receiver or trustee for it or any substantial part of its assets, or shall suffer any such custodianship, receivership or trusteeship to continue undischarged or unstayed for a period of ninety (90) days or more; or (d) anything analogous to any of the foregoing occurs in any applicable jurisdiction. Termination pursuant to this Section 11.4 shall be effective upon the date specified in such notice.

11.5 Consequences of Termination by vTv or by Huadong for Convenience. If this Agreement is terminated by vTv under Section 11.2 or 11.4, or by Huadong under Section 11.3(a), then, with respect to each Terminated Region only (in the case of termination pursuant to Section 11.2) or with respect to the Territory (in the case of termination other than pursuant to Section 11.2):

(a)The licenses granted to Huadong in Sections 2.1(a) and 2.1(b) and the licenses granted to vTv in Section 2.1(c) shall terminate;

(b)Huadong shall grant, and shall cause any applicable Subsidiaries and use Commercially Reasonable Efforts to cause its applicable Sublicensees to grant, vTv any combination of the following elected by vTv:

(i) Regulatory Matters. Ownership of all Regulatory Filings and Regulatory Approvals relating to Compounds and Products, including related correspondence with Regulatory Authorities, and provide copies thereof; provided, to the extent that transfer of the ownership of any Regulatory Filings or Regulatory Approvals relating to Compounds and Products is not feasible under applicable Laws, Huadong shall withdraw or cancel, and shall cause any applicable Affiliate or Sublicensee to withdraw or cancel, such Regulatory Filings or Regulatory Approvals at vTv's option; and

(ii) Non-clinical and Clinical Matters. To the extent feasible under applicable Laws, ownership and possession of all non-clinical and clinical data in Huadong's or its applicable Subsidiaries' or Sublicensees' Control exclusively relating to Compounds and Products, and reasonable access to and right to use (only for purposes of the Development and Commercialization of Compounds and Products) any such other data that relates non-exclusively to Compounds and Products;

provided, that, in each case, Huadong (I) shall be entitled to redact or withhold such Information that is proprietary to Huadong and (II) shall not be required to transfer or assign, as applicable, to vTv of any raw data or assays (in vivo or in vitro), or methods, protocols, or information that would enable vTv to reverse engineer any of Huadong's methods or protocols;

(c)Manufacturing Matters. At vTv's option, to be exercised no later than the later of (x) thirty (30) days after the effective date of termination or (y) thirty (30) days after vTv's receipt of the applicable Manufacturing agreements, Huadong shall:

(i) use Commercially Reasonable Efforts, and use Commercially Reasonable Efforts to cause each of its Subsidiaries and Sublicensees to effect the assignment, to cause its Subsidiaries and Sublicensees to effect the assignment of each Manufacturing agreement specific and exclusive to Compounds or Products to vTv, if such agreement is then in effect and such assignment is permitted under such agreement or by the applicable Third Party; provided, that Huadong and its applicable Subsidiaries and Sublicensees shall be released to the extent the applicable Third Party will permit from any obligation arising out of such agreement following such assignment and vTv shall execute such documentation reasonably satisfactory to Huadong to effectuate such agreement; provided, further that, if any such agreement is specific but not exclusive to Compounds or Products, or is not assigned to vTv for any reason, Huadong and its Subsidiaries and Sublicensees shall use Commercially Reasonable Efforts to provide vTv with the benefits of such agreement to the extent it relates to Compounds or Products;

(ii) for a period of up to [***] following the effective date of termination, (A) cooperate with vTv in reasonable respects to transfer Manufacturing documents and materials that are used (at the time of the termination) by Huadong or its Subsidiaries or Sublicensees exclusively in the Manufacture of Compounds and Products to the extent such Manufacturing documents and materials are not obtained by vTv pursuant to the assignment of agreements pursuant to paragraph (i) above, and (B) provide vTv with reasonable access to and right to use such Manufacturing documents and materials to the extent they relate to, but are not used exclusively in, the Manufacture of Compounds and Products;

(iii) for a period of up to [***] following the effective date of termination, (A) cooperate with vTv in reasonable respects to transfer Manufacturing technologies that are used (at the time of the termination) and Controlled by Huadong or its Subsidiaries or Sublicensees exclusively in the Manufacture of Compounds and Products, and (B) provide vTv with reasonable access to and right to use such Manufacturing technologies, to the extent they relate to, but are not used exclusively in, the Manufacture of Compounds and Products;

provided that vTv shall reimburse Huadong for Huadong's reasonable out-of-pocket expenses to provide such requested assistance, to the extent such Manufacturing technologies are not obtained by vTv pursuant to the assignment of agreements pursuant to paragraph (i) above; provided, further, that Huadong expressly disclaims any representations or warranties, and shall not be liable, with respect to the adequacy of any Manufacturing technologies transferred to vTv under this Section 11.5(c)(iii);

(iv) sell Huadong's or use Commercially Reasonable Efforts to cause its Subsidiaries or Sublicensees to sell then-existing inventory of Compounds and Products to vTv, at Huadong's or its applicable Subsidiaries' or Sublicensees' cost of Manufacture, but only if the following conditions have been met: (A) such Compounds and Products meets the applicable release specifications; and (B) Huadong does not reasonably believe the continued use of such Compounds and Products causes safety concerns; and

(v) if this Agreement is terminated after initiation of a Phase III Clinical Trial of a Product and Huadong does not reasonably believe the continued use of such Compounds and Products causes safety concerns, use Commercially Reasonable Efforts, and use Commercially Reasonable Efforts to cause its Subsidiaries and Sublicensees, for a reasonable period of up to months (A) to transition to vTv Manufacturing activities as conducted by Huadong and its Subsidiaries and Sublicensees prior to the effective date of termination (including the assignment of Manufacturing agreements under clause (i) above) and to cooperate with vTv to qualify an alternate manufacturer chosen by vTv, and (B) to the extent Huadong or any of its Subsidiaries or Sublicensees is performing Manufacturing activities related to such Product immediately prior to termination, to Manufacture and supply vTv's requirements of such Product to the extent such requirements can be met using Huadong's, or its applicable Subsidiaries' or Sublicensees', then-existing manufacturing facilities and equipment, at Huadong's, or its applicable Subsidiaries' or Sublicensees' cost of Manufacture, provided that vTv shall use Commercially Reasonable Efforts to transition Manufacturing activities under clause (A) in a reasonably prompt manner, and provided, further that any obligation under clause (B) shall terminate upon the earlier of [***] months or the completion of the activities in clause (A);

provided, that, in each case, Huadong (I) shall be entitled to redact or withhold such Information that is proprietary to Huadong and (II) shall not be required to transfer or assign, as applicable, to vTv of any raw data or assays (in vivo or in vitro), or methods, protocols, or information that would enable vTv to reverse engineer any of Huadong's methods or protocols;

(d)License Grant. At vTv's option, to be exercised no later than thirty (30) days after the effective date of termination, the Parties shall negotiate in good faith a license agreement, on customary terms and reflecting a market-rate royalty and a reasonable percentage of sublicensing revenue, effecting an exclusive, irrevocable and perpetual license to vTv, with the right to sublicense, under the Huadong Patent Rights, Huadong Know-How, Huadong's interest in the Joint Intellectual Property, and any Information redacted, withheld, or not transferred or assigned pursuant to the provisos at the end of Section 11.5(a) or 11.5(b) solely to make, have made, use, sell, offer for sale and import Compounds and Products in the Field outside of the Territory, which Huadong Patent Rights, Huadong Know-How and Huadong's interest in the Joint Intellectual Property were Developed or Commercialized prior to the

effective date of termination; provided, that, with respect to any Huadong Patent Rights or Huadong Know-How that Huadong acquired from a Third Party (by license or otherwise), Huadong shall only be required to grant to vTv a license to such Huadong Patent Rights or Huadong Know-How to the extent permitted under its agreement with such Third Party, and vTv shall pay Huadong or such Third Party, as determined by Huadong, any payment due to such Third Party relating to the Compounds and Products; provided, further that vTv shall execute such documentation reasonably satisfactory to Huadong to effectuate such agreement; and vTv shall have the same enforcement rights with respect to any Huadong Patent Rights that exclusively Cover Products that are licensed to vTv pursuant to this Section 11.5(d) as Huadong has with respect to Infringement Claims pursuant to Section 7.4, provided that any enforcement of Huadong Patent Rights or Joint Patent Rights that Cover subject matter other than such Products shall be performed by vTv with the consultation and prior agreement of Huadong; and

(e)Assignment of Trademarks. At vTv's option, to be exercised no later than [***] days after the effective date of termination, Huadong shall negotiate in good faith to assign to vTv [***] all of Huadong's right, title and interest in any trademark used solely in connection with the Products, along with all associated goodwill.

Notwithstanding anything to the contrary in this Section 11.5, if the Agreement is terminated with respect to a Terminated Region smaller than the Territory, then the Parties shall discuss in good faith an arrangement whereby (i) Huadong shall only be required to perform the covenants in this Section 11.5 to the extent necessary to allow vTv to Develop and Commercialize the Compounds and the Products in the Terminated Region and (ii) Huadong's rights under this Agreement, including its ability to Develop and Commercialize the Compounds and the Products, in the Territory outside of the Terminated Region shall be preserved.

11.6 Consequences of Termination by Huadong for Other Causes. If this Agreement can be terminated by Huadong under Section 11.2, 11.3(b) or 11.4, then, at Huadong's election (in its sole discretion), with respect to each Terminated Region only (in the case of termination pursuant to Section 11.2) or with respect to the Territory (in the case of termination other than pursuant to Section 11.2), either:

(a)this Agreement shall remain in effect, except that the royalties due following the date of such termination pursuant to Section 6.5(a) shall be reduced to [***]of royalties due pursuant to Section 6.5, and (ii) Sections 2.1(c), 6.1, 6.3, and 6.4 shall be terminated; or

(b)this Agreement shall terminate; provided, that, in the case of termination by Huadong,

(i) under Section 11.2 due to an MRCT Initiation Breach, [***]; or

(ii) under Section 11.3(b) (Termination for Failure of Manufacturing Technology Transfer), [***].

11.7 Effect of Termination; Accrued Rights and Obligations. Termination of this Agreement for any reason shall not release either Party from any liability that, at the time of such termination, has already accrued or that is attributable to a period prior to such termination

(including payment obligations accrued prior to the effective date of termination pursuant to ARTICLE VI) nor preclude either Party from pursuing any right or remedy it may have hereunder or at Law or in equity with respect to any breach of this Agreement. Notwithstanding the foregoing, the Parties agree that no milestone payment under Section 6.3 or 6.4 shall be due if the milestone event or sales threshold, as applicable, is not achieved or met prior to the date a notice of termination under this ARTICLE XI is provided by the terminating Party. It is understood and agreed that monetary damages may not be a sufficient remedy for any breach of this Agreement and that the non-breaching Party may be entitled to seek injunctive relief as a remedy for any such breach.

11.8 Effect of Termination on Sublicenses. Termination of this Agreement by vTv pursuant to Section 11.2 shall not terminate any sublicense granted by Huadong pursuant to Sections 2.1(b) with respect to a Sublicensee; provided that (a) such Sublicensee is not in breach of any provision of this Agreement or the applicable sublicense agreement, (b) such Sublicensee shall perform all obligations of Huadong under this Agreement that are applicable to the sublicensed rights, and (c) vTv shall have all rights with respect to any and all Sublicensees as it had hereunder with respect to Huadong prior to termination of this Agreement with respect to Huadong.

11.9 Survival. The rights and obligations set forth in this Agreement shall extend beyond the Term or termination of this Agreement only to the extent expressly provided for in this Agreement or to the extent required to give effect to a termination of this Agreement or the consequences of a termination of this Agreement as expressly provided for in this Agreement. Without limiting the generality of the foregoing, it is agreed that the provisions of ARTICLE I (Definitions), Sections 2.2 (Rights Retained by the Parties), 2.3 (Section 365(n) of the Bankruptcy Code), 6.6 (Reports; Payments), 6.7 (Books and Records; Audit Rights), 6.8 (Tax Matters), 6.9 (Payment Method and Currency Conversion), 6.10 (Blocked Payments), 6.11 (Late Payments), 8.1 (Treatment of Confidential Information), 8.2 (Confidential Information), ARTICLE X (Indemnification), and Sections 11.5 (Consequence of Termination by vTv or by Huadong for Convenience), 11.6 (Consequences of Termination by Huadong for Other Causes) 11.7 (Effect of Termination; Accrued Rights and Obligations), 11.9 (Survival), 12.1 (Governing Law; Jurisdiction), 12.2 (Dispute Resolution; Arbitration), 12.3 (Waiver), 12.4 (Notices), 12.8 (Assignment), 12.12 (Third-Party Beneficiaries), 12.13 (Relationship of the Parties), 12.14 (Performance by Affiliates), and 12.15 (No Consequential or Punitive Damages) shall survive expiration or termination of this Agreement for any reason.

ARTICLE XII
MISCELLANEOUS

12.1 Governing Law; Jurisdiction. This Agreement shall be governed by and interpreted in accordance with the internal laws of New York, without regard to its conflicts of laws rules. Subject to Section 12.2, each Party shall have the right to institute judicial proceedings against the other Party or anyone acting by, through or under such other Party, in any court of competent jurisdiction, in order to enforce the instituting Party's rights hereunder through reformation of contract, specific performance, injunction or similar equitable relief.

12.2 Dispute Resolution; Arbitration.

(a)Dispute Resolution. In the event of a dispute arising out of or relating to this Agreement, either Party shall provide written notice of the dispute to the other, in which event the dispute shall be referred to the Senior Executives of each Party, for attempted resolution by good faith negotiations within twenty (20) days after such notice is received. In the event the Senior Executives do not resolve such dispute within the allotted twenty (20) days, either Party may, after the expiration of the twenty (20) day period, seek to resolve the dispute through arbitration in accordance with Section 12.2(b).

(b)Arbitration.

(i) Claims. Any claim, dispute, or controversy of whatever nature arising between the Parties out of or relating to this Agreement that is not resolved under Section 12.2(a) within the required twenty (20) day time period, including any action or claim based on tort, contract, or statute (including any claims of breach or violation of statutory or common law protections from discrimination, harassment and hostile working environment), or concerning the interpretation, effect, termination, validity, performance or breach of this Agreement ("Claim"), shall be resolved by final and binding arbitration before a panel of three (3) experts with relevant industry experience (the "Arbitrators"). Each of vTv and Huadong shall designate, in the notice of arbitration and the answer to the notice of arbitration, respectively, one Arbitrator each. If either party fails to designate an arbitrator, the Administrator (as defined below) shall appoint the Arbitrator. The Presiding Arbitrator shall be chosen promptly by mutual agreement of the two Arbitrators appointed by the Parties, but in no event later than thirty (30) days after the date that the last of such Arbitrators was appointed. Failing such appointment within thirty (30) days, the Administrator shall appoint the Presiding Arbitrator. The arbitration shall be administered by the Hong Kong International Arbitration Centre (the "Administrator") in accordance with the Hong Kong International Arbitration Centre Administered Arbitration Rules in force when the notice of arbitration is submitted. The law of this arbitration clause shall be Hong Kong law. The place of arbitration shall be Hong Kong. The arbitration proceedings shall be conducted in English.

(ii) Arbitrators' Award. The Arbitrators shall endeavor, within three (3) months after the conclusion of the arbitration hearing, issue a written award and statement of decision describing the essential findings and conclusions on which the award is based, including the calculation of any damages awarded. The decision or award rendered by the Arbitrators shall be final and binding, and judgment may be entered upon it in accordance with applicable Law in the Hong Kong or any other court of competent jurisdiction. The Arbitrators shall be authorized to award compensatory damages, but shall not be authorized to reform, modify or materially change this Agreement or any other agreements contemplated hereunder.

(iii) Compliance with this Agreement. Unless the Parties otherwise agree in writing, during the period of time that any arbitration proceeding is pending under this Agreement, the Parties shall continue to comply with all those terms and provisions of this Agreement that are not the subject of the pending arbitration proceeding.

(iv) Injunctive or Other Equity Relief. Nothing contained in this Agreement shall deny any Party the right to seek injunctive or other equitable relief from a court of competent jurisdiction in the context of a *bona fide* emergency or prospective irreparable

harm, and such an action may be filed and maintained notwithstanding any ongoing arbitration proceeding.

(v) Confidentiality. All arbitration proceedings and decisions of the Arbitrator under this Section 12.2(b) shall be deemed Confidential Information of both Parties under ARTICLE VIII.

12.3 Waiver. Waiver by a Party of a breach hereunder by the other Party shall not be construed as a waiver of any succeeding breach of the same or any other provision. No delay or omission by a Party to exercise or avail itself of any right, power or privilege that it has or may have hereunder shall operate as a waiver of any right, power or privilege by such Party. No waiver shall be effective unless made in writing with specific reference to the relevant provision(s) of this Agreement and signed by a duly authorized representative of the Party granting the waiver.

12.4 Notices. All notices, instructions and other communications hereunder or in connection herewith shall be in writing, shall be sent to the address specified in this Section 12.4 and shall be: (a) delivered personally; (b) sent by registered or certified mail, return receipt requested, postage prepaid; (c) sent via a reputable nationwide overnight courier service; or (d) sent by electronic mail or facsimile transmission. Any such notice, instruction or communication shall be deemed to have been delivered upon receipt if delivered by hand, three (3) Business Days after it is sent by registered or certified mail, return receipt requested, postage prepaid, one (1) Business Day after it is sent via a reputable nationwide overnight courier service, or when transmitted with electronic confirmation of receipt, if transmitted by electronic mail or facsimile (if such transmission is on a Business Day; otherwise, on the next Business Day following such transmission).

Notices to Huadong shall be addressed to:

Hangzhou Zhongmei Huadong Pharmaceutical Co., Ltd.
No, 866 Moganshan Road,
Hangzhou 310011, China
ATTN: Mr. Wang Zigen
Email: [***]

Notices to vTv shall be addressed to:

vTv Therapeutics LLC
4170 Mendenhall Oaks Pkwy
High Point, NC 27265
ATTN: Law Department
Email: [***]

Either Party may change its address by giving notice to the other Party in the manner provided above.

12.5 Entire Agreement. This Agreement (including Schedules) contains the complete understanding of the Parties with respect to the subject matter hereof and supersedes all prior understandings and writings between the Parties relating to such subject matter. In particular, and without limitation, it supersedes and replaces the Confidentiality Agreement and any and all term sheets relating to the transactions contemplated by this Agreement and exchanged between the Parties prior to the Effective Date.

12.6 Severability. If any provision of this Agreement is held unenforceable by a court or tribunal of competent jurisdiction because it is invalid or conflicts with any Law of any relevant jurisdiction, the validity of the remaining provisions shall not be affected. In such event, the Parties shall negotiate a substitute provision that, to the extent possible, accomplishes the original business purpose.

12.7 Registration, Filing and Disclosure of the Agreement. To the extent a Party (a) determines in good faith that it is required by applicable Law to publicly file, register or notify this Agreement with a Governmental Authority, including public filings pursuant to securities Laws or (b) desires to disclose the terms of this Agreement to investors and sublicensees, and to potential investors and sublicensees, in each case, pursuant to obligations of confidentiality no less stringent than set forth in this Agreement, in connection with such Party's activities hereunder and in connection with such Party's financing activities, in each case of clause (a) and (b) above, it shall either (i) provide only a redacted form of this Agreement that excludes financial and diligence terms (the "Standard Redaction"), or (ii) provide a proposed redacted draft of the Agreement with less redaction than the Standard Redaction to the other Party with a reasonable amount of time prior to filing or disclosure for the other Party to approve such draft, such approval not to be unreasonably withheld, and, for clarity, shall not be required to provide the other Party the name of any Third Party receiving disclosure or the purpose of such disclosure; provided that such other Party may propose reasonable changes to such proposed redactions. With respect to (ii), the Party making such filing, registration, notification or disclosure shall incorporate any proposed changes timely and reasonably requested by the other Party, absent a substantial reason to the contrary, and shall use Commercially Reasonable Efforts to seek confidential treatment for any terms that the other Party timely requests be kept confidential, to the extent such confidential treatment is applicable and reasonably available consistent with applicable Law. vTv shall, at its own expense, promptly provide Huadong with all necessary assistance and documents required for all government approvals, registrations and/or recordals required or advisable under any applicable Laws in each Region in the Territory to enable the Parties to exercise, enforce and enjoy all of the rights and obligations contained thereunder, including, any approval, registration or recordal required under the PRC technology import and export laws and the PRC patent laws. Each Party shall be responsible for its own legal and other external costs in connection with any such filing, registration or notification. In furtherance of the obligations set forth in this Section 12.7, the Parties shall execute (i) no later than sixty (60) days after the Effective Date, a short form agreement for submission to with the Ministry of Commerce of China, and (ii) no later than three (3) months after the Effective Date, a short form agreement for recordal with the State Intellectual Property Office of China, in each case, in customary form, consistent with the terms of this Agreement, and as required by applicable Law.

12.8 Change in Control.

(a)vTv (or its successor) shall provide Huadong with written notice of any Change in Control of vTv or Acquisition by vTv as soon as possible after vTv announces publicly any information regarding any such Change in Control or Acquisition (whether pending or consummated thereafter) or, if the Change in Control or Acquisition will not be publicly announced, then no later than three (3) Business Days after the signing of a definitive agreement with respect to such Change in Control or Acquisition (whether pending or consummated thereafter).

(b)In the event of a Change in Control of vTv, or any Acquisition involving vTv or its Affiliates that results in (or will, upon closing, result in) vTv having an Affiliate that is a Competitor, Huadong shall have the right, in its sole and absolute discretion, by written notice delivered to vTv (or its successor) at any time during [***] following Huadong's receipt of the written notice contemplated by Section 12.8(a) (or, if no such notice has been received, at any time following the closing of such transaction), to take one or more of the following actions, effective upon the later of (x) the closing of such Change of Control or Acquisition or (y) Huadong's written notice to vTv (or its successor):

(i) [***];

(ii) [***];

(iii) [***];

(iv) [***];

(v) [***]; and

(vi) [***].

(c)For the avoidance of doubt, if vTv is acquired by way of an Acquisition by or to a Third Party (the "Acquirer"), Huadong shall not obtain any rights or access under this Agreement to any Know-How or Patent Rights owned by or licensed to such Acquirer, or any of such Acquirer's Affiliates that were not Affiliates of vTv immediately prior to the consummation of such Acquisition, that were not already within vTv Intellectual Property of Joint Intellectual Property immediately prior to the consummation of such Acquisition.

12.9 Assignment. Neither this Agreement nor any right or obligation hereunder may be assigned or otherwise transferred by either Party without the consent of the other Party, not to be unreasonably withheld; provided, that, each Party may, without such consent, assign this Agreement, in whole or in part: (a) to any of its respective Subsidiaries, provided that the assigning Party shall remain responsible for the performance by such Subsidiary of the rights and obligations hereunder; or (b) to any successor in interest by way of merger, acquisition or sale of all or substantially all of its business or assets, provided that such successor agrees in writing to be bound by the terms of this Agreement to the identical extent applicable to the assigning Party. Any purported assignment in violation of this Section 12.9 shall be void. Any permitted assignee shall assume all obligations of its assignor under this Agreement.

12.10 Counterparts; Exchange by Facsimile. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and that together shall constitute one and the same instrument. Such counterparts may be exchanged by facsimile or PDF (provided that each executed counterpart is transmitted in one complete transmission or electronic mail message). Where there is an exchange of executed counterparts by facsimile or PDF, each Party shall be bound by the Agreement notwithstanding that original copies of the Agreement may not be exchanged immediately. The Parties shall cooperate after execution of the Agreement and exchange by facsimile or PDF to ensure that each Party obtains an original executed copy of this Agreement with reasonable promptness.

12.11 Force Majeure. No Party shall be liable for failure of or delay in performing obligations set forth in this Agreement, and no Party shall be deemed in breach of its obligations, if such failure or delay is due to a natural disaster, explosion, fire, flood, tornadoes, thunderstorms, earthquake, war, terrorism, riots, embargo, losses or shortages of power, labor stoppage, substance or material shortages, damage to or loss of product in transit not due to a failure by such Party or its Affiliates to exercise reasonable care, events caused by reason of Laws of any Governmental Authority, events caused by acts or omissions of a Third Party not induced or solicited by such Party or its Affiliates, or any other cause reasonably beyond the control of such Party or its Affiliates; provided that such Party uses Commercially Reasonable Efforts to overcome the difficulties created by such force majeure event and to resume performance of its obligations as soon as practicable.

12.12 Third-Party Beneficiaries. None of the provisions of this Agreement shall be for the benefit of or enforceable by any Third Party other than the provisions for the benefit of a vTv Party or a Huadong Party, as applicable, that is an Indemnified Party under ARTICLE X, and no Third Party shall obtain any right under any provision of this Agreement or shall by reason of any such provision make any claim in respect of any debt, liability or obligation (or otherwise) against either Party.

12.13 Relationship of the Parties. Each Party shall bear its own costs incurred in the performance of its obligations hereunder without charge or expense to the other, except as expressly provided in this Agreement. Neither Party shall have any responsibility for the hiring, termination or compensation of the other Party's employees or for any employee compensation or benefits of the other Party's employees. No employee or representative of a Party shall have any authority to bind or obligate the other Party for any sum or in any manner whatsoever, or to create or impose any contractual or other liability on the other Party without said other Party's approval. For all purposes, and notwithstanding any other provision of this Agreement to the contrary, the legal relationship under this Agreement of each Party to the other Party shall be that of independent contractor. Nothing in this Agreement shall be construed to establish a relationship of partners or joint venturers between the Parties.

12.14 Performance by Affiliates. To the extent that this Agreement imposes obligations on Affiliates of a Party, such Party agrees to use Commercially Reasonable Efforts to cause its Affiliates to perform such obligations.

12.15 No Consequential or Punitive Damages. NEITHER PARTY SHALL BE LIABLE FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL, EXEMPLARY OR

PUNITIVE DAMAGES, INCLUDING LOST PROFITS, ARISING FROM OR RELATING TO THIS AGREEMENT, REGARDLESS OF ANY NOTICE OF SUCH DAMAGES. NOTHING IN THIS SECTION 12.15 IS INTENDED TO LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF EITHER PARTY UNDER THIS AGREEMENT WITH RESPECT TO THIRD PARTY CLAIMS, OR WITH RESPECT TO THE INFRINGEMENT OR MISAPPROPRIATION OF THE OTHER PARTY'S INTELLECTUAL PROPERTY RIGHTS OR CONFIDENTIAL INFORMATION, OR THE WILLFUL MISCONDUCT, INTENTIONAL BREACH OR FRAUD OF THE OTHER PARTY.

[Signature page follows]

IN WITNESS WHEREOF, the Parties have signed this Agreement as of the Effective Date.

HANGZHOU ZHONGMEI HUADONG PHARMACEUTICAL CO., LTD.	**vTv THERAPEUTICS LLC**
By: /s/ Bangliang Li	By: /s/ Stephen L. Holcombe
Name: Bangliang Li	Name: Stephen L. Holcombe
Title: Chairman of the Board of Directors	Title: President and Chief Executive Officer

Schedule 2.6(a)

vTv Know-How to be Transferred

[***]

Schedule 6.1

Required Documentation for Payments by Huadong

[***]

Schedule 8.4

Forms of Press Releases

[Attached.]

Schedule 9.1(e)

vTv Patent Rights

Description	vTv File No.	Country	Application No.	
[***]	[***]	[***]	[***]	[***]

Exhibit A

[***]

Exhibit A

Exhibit B

Structure of TTP273

[***]

Exhibit B

Exhibit 10.20

EXECUTION COPY

LICENSE AGREEMENT

*** CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO PORTIONS OF THIS AGREEMENT AS INDICATED BY "[***]" AND SUCH CONFIDENTIAL PORTIONS HAVE BEEN DELETED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED.**

This License Agreement (the "**Agreement**") is made and entered into as of December 21, 2017 (the "**Effective Date**") by and between **Reneo Pharmaceuticals, Inc.**, a Delaware corporation ("**Reneo**"), having a place of business at 12730 High Bluff Drive, Suite 160, San Diego, CA 92130, USA, and **vTv Therapeutics LLC**, a limited liability company organized under the laws of Delaware ("**vTv**"), with its principal place of business at 4170 Mendenhall Oaks Pkwy, High Point, NC 27265. Reneo and vTv are sometimes referred to herein individually as a "**Party**" and collectively as the "**Parties**".

Recitals

A. vTv controls certain intellectual property related to its PPAR program and, in particular, a proprietary compound designated as HPP593.

B. Reneo is a privately-held biotechnology company focused on developing treatments for genetic and rare diseases.

C. Reneo desires to acquire an exclusive worldwide license under vTv's intellectual property related to vTv's PPAR program or Compounds (as defined below) to develop, manufacture and commercialize Licensed Products (as defined below), and vTv is willing to grant such a license to Reneo, on the terms and conditions set forth herein.

Now, Therefore, in consideration of the foregoing premises and the mutual promises, covenants and conditions contained in this Agreement, the Parties agree as follows:

1. DEFINITIONS

Capitalized terms used in this Agreement (other than the headings of the Sections or Articles) have the following meanings set forth in this Article 1, or, if not listed in this Article 1, the meanings as designated in the text of this Agreement.

1.1 "Affiliate" means, with respect to a particular person, corporation, partnership, or other entity, a second person, corporation, partnership, or other entity that controls, is controlled by or is under common control with such first person, corporation, partnership, or other entity. For the purposes of the definition in this Section 1.1, the word "**control**" (including, with correlative meaning, the terms "**controlled by**" or "**under the common control with**") means the actual power, either directly or indirectly through one (1) or more intermediaries, to direct or cause the direction of the management and policies of such entity, whether by the ownership of more than fifty percent (50%) of the voting stock of such entity, or by contract or otherwise. Notwithstanding with foregoing, no member of the Sponsor Group shall be considered an Affiliate of vTv.

1.2 **"CMC Activities"** means the activities necessary or useful for generating the Information related to the chemistry, manufacturing and controls of any Compound or Licensed Product required for the Regulatory Approval of Licensed Products, as specified by the FDA or other applicable Regulatory Authority.

1.3 **"Combination Product"** means either: (a) any pharmaceutical product that consists of a Compound and at least one other active ingredient that is not a Compound; or (b) any combination of a Licensed Product and another pharmaceutical product that contains at least one other active ingredient that is not a Compound where such products are not formulated together but are sold together and invoiced as one product.

1.4 **"Commercialize"** means to promote, market, distribute, sell, offer for sale, contract to sell or import any compound or product. For clarity, **"Commercializing"** and **"Commercialization"** have a correlative meaning.

1.5 **"Commercially Reasonable Efforts"** means, with respect to Reneo's obligations under this Agreement, the carrying out of such obligations or tasks with a level of efforts and resources consistent with the commercially reasonable practices of a similarly situated company in the pharmaceutical industry for the research, development or commercialization of a similarly situated pharmaceutical product as the Licensed Product at a similar stage of development or commercialization, taking into account efficacy, safety, patent and regulatory exclusivity, anticipated or approved labeling, present and future market potential, competitive market conditions and the profitability of the Licensed Product in light of pricing and reimbursement issues. Commercially Reasonable Efforts shall be determined on a market-by-market and indication-by-indication basis, and it is anticipated that the level of efforts required shall be different for different markets and indications and shall change over time, reflecting changes in the status of the Licensed Product and markets involved.

1.6 **"Compound**" means: (a) any PPAR delta agonist Controlled by vTv, or any Affiliate it controls (within the meaning of Section 1.1), as of the Effective Date, including HPP593; (b) any PPAR delta agonist Covered by the Patents listed on Exhibit 1.50 as of the Effective Date (or any counterparts, continuations, continuations in part, divisionals, substitute applications, provisionals, patents issued or granted on any such patent applications, extensions (including supplementary protection certificates), reissues, reexaminations, registrations or confirmations of the Patents listed on Exhibit 1.50 as of the Effective Date, and foreign counterparts of any of the foregoing, whether existing on the Effective Date or filed or issued thereafter, but in each case solely to the extent such claims are entitled to claim priority to the Patents listed on Exhibit 1.50 as of the Effective Date); or (c) any pharmacologically active derivatives of any of the foregoing, including isomers, esters, salts, hydrates, anhydrous forms and other solvates and polymorphs of such compounds; in each case ((a) through (c)), in any dosage strength or formulation.

1.7 **"Confidential Information"** of a Party means any and all Information of such Party or any of its Affiliates that is disclosed or made available to the other Party or any of its Affiliates under this Agreement, whether in oral, written, graphic, or electronic form.

1.8 **"Controlled"** means, with respect to a Party, or any Affiliate that it controls (within the meaning of Section 1.1), as applicable, and any compound, material, Information or intellectual property right, that such Party or any such controlled Affiliates(s), as applicable, has the legal authority or right (whether by ownership, license or otherwise (including by way of any license or other rights received from any Sublicensee) but without taking into account any rights granted by one Party to the other Party pursuant to this Agreement) to grant to the other Party access, a license or a sublicense (as applicable) to such compound, material, Information or intellectual property right as provided for herein without violating the terms of any agreement or other arrangements with any Third Party existing at the time such Party or any such Affiliate(s), as applicable, would be first required hereunder to grant the other Party such access, license or sublicense.

1.9 **"Cover"** means, with respect to a product, composition, technology, process or method and a Patent, that, in the absence of ownership of, or a license granted under, a claim in such Patent, the manufacture, use, offer for sale, sale or importation of such product or composition or the practice of such technology, process or method would infringe such claim (or, in the case of a claim of a pending patent application, would infringe such claim if it were to issue as a claim of an issued patent).

1.10 **"Develop"** or **"Development"** means, with respect to any compound or product, all activities relating to preparing and conducting non-clinical studies and other analyses, clinical studies, and regulatory activities (*e.g.*, preparation and submission of regulatory applications) that are necessary or useful to obtain or maintain Regulatory Approval of any Licensed Product, excluding the CMC Activities and the Manufacture of any Compound or Licensed Product.

1.11 **"Dollars"** or **"$"** means the legal tender of the U.S.

1.12 **"EMA"** means the European Medicines Agency or any successor entity.

1.13 **"EU"** means the European Union, as its membership may be altered from time to time, and any successor thereto. Notwithstanding the foregoing, the EU shall include the United Kingdom and each country within the United Kingdom for purposes of this definition regardless of whether such country officially exits the EU during the Term.

1.14 **"Executive Officers"** means the Chief Executive Officer of Reneo and the Chief Executive Officer of vTv, or such other person (of similar seniority within Reneo or vTv) designated by Reneo or vTv from time to time.

1.15 **"FDA"** means the United States Food and Drug Administration, and any successor thereto.

1.16 **"Field"** means any therapeutic, prophylactic or diagnostic application in humans.

1.17 **"First Commercial Sale"** means, with respect to a Licensed Product in a particular country, the first sale of such Licensed Product by a Selling Party to a Third Party for end use or consumption in such country.

1.18 **"GAAP"** means, as applicable, (a) generally accepted accounting principles in the U.S. or internationally, as applicable, or (b) the international financial reporting standards if a Party

uses the international financial reporting standards, in each case ((a) and (b)) consistently applied and as they exist from time to time.

1.19 "Governmental Authority" means any multi-national, federal, state, local, municipal, provincial or other government authority of any nature (including any governmental division, prefecture, subdivision, department, agency, bureau, branch, office, commission, council, court or other tribunal).

1.20 "Indication" means any disease or condition which could be listed under the header "INDICATIONS AND USAGE" or described under the header "CLINICAL STUDIES" of a Licensed Product's label upon Regulatory Approval in the United States, or equivalent thereof.

1.21 "Initiation" of a clinical trial means the first dosing of the first subject enrolled in such clinical trial.

1.22 "Information" means all tangible and intangible techniques, technology, practices, trade secrets, inventions (whether patentable or not), processes, formulations, compounds, products, biological materials, cell lines, samples of assay components, media, designs, formulas, ideas, programs, software models, algorithms, developments, experimental works, protocols, methods, knowledge, know-how, skill, experience, data and results (including pharmacological, toxicological and chemical and clinical data and results), compilations of data, other works of analytical and quality control data, specifications, methods, results, descriptions, compositions of matter, regulatory submissions, minutes, correspondence strategy, medical uses, adverse reactions and manufacture and quality control methods.

1.23 "Knowledge" means, with respect to a Party, the good faith understanding of the facts and information in the possession of an officer of such Party, or any in-house legal counsel of, or in-house patent agents employed by, such Party or its Affiliates, without any duty to conduct any additional investigation with respect to such facts and information by reason of the execution of this Agreement. For purposes of this definition, an **"officer"** means any person in the position of vice president, senior vice president, president or chief executive officer of a Party.

1.24 "Laws" means all laws, statutes, rules, regulations, ordinances and other pronouncements having the effect of law of any federal, national, multinational, state, provincial, county, city or other political subdivision, domestic or foreign.

1.25 "Licensed Product" means any pharmaceutical product in any dosage strength or formulation containing a Compound, either alone or in combination with other agents.

1.26 "Loan Agreement" means the Venture Loan and Security Agreement dated October 28, 2016, by and among vTv, Silicon Valley Bank and Horizon Technology Finance Corporation in effect as of the Effective Date, as the same is amended from time to time during the Term.

1.27 "Manufacturing" means all activities related to the manufacture, formulation, processing, filling, finishing, packaging, labeling, inspection or receiving of any compound or product, including holding and shipping of any compound, product, or any raw materials or packaging materials with respect thereto, or any intermediate of any of the foregoing, and including

process and cost optimization, process development, qualification and validation, equipment and facility qualification, validation, commercial manufacture, stability and release testing, quality assurance and quality control, and CMC Activities. For clarity, **"Manufacture"** has a correlative meaning.

1.28 "Marketing Authorization Application" or "**MAA**" means: (a) in the United States, a New Drug Application (as defined in Title 21, Section 314.50 et seq. of the U.S. Code of Federal Regulations or any successor regulations), including any amendment or supplement thereto, and (b) in any other country or regulatory jurisdiction, an application for regulatory approval required for marketing or sale of a Licensed Product in such country or regulatory jurisdiction, including any amendment or supplement thereto.

1.29 "Net Sales" means, with respect to a given period of time, the gross amount invoiced by Reneo or any of its Affiliates or Sublicensees (each, a **"Selling Party"**) to any Third Party (other than another Selling Party, unless such Selling Party is the end user of the applicable Licensed Product) for the sale or distribution to such Third Party of any Licensed Product, less the following deductions and offsets that are actually incurred, allowed, accrued, paid or taken and are allocated with respect to such sale or distribution, but solely to the extent that such deductions or offsets are not otherwise recovered by or reimbursed to any Selling Party:

(a) trade, cash and quantity discounts, allowances and credits based on the invoiced price or net price to Third Party purchasers, including cash coupons, inventory management fees and retroactive price reductions;

(b) credits, refunds or allowances actually granted for damaged or expired Licensed Product, returns or rejections of Licensed Product, recalls, reserve for returns, price adjustments and billing errors, in each case not in excess of the selling price of Licensed Product;

(c) rebates, chargebacks and discounts (or equivalents thereof), based on the invoiced price or net price to Third Party purchasers, granted to managed health care organizations, commercial insurance companies, pharmacy benefit managers (or equivalents thereof), distributors, federal, state/provincial, local and other governments, their agencies and purchasers and reimbursers, or to trade customers;

(d) transportation costs, including insurance, for outbound freight related to delivery or distribution of Licensed Product;

(e) bad debts and uncollectible amounts relating to the sale of Licensed Product that are actually written off; and

(f) sales taxes, duties and other governmental charges (including value added tax, but solely to the extent not otherwise creditable or reimbursed) imposed upon and paid with respect to the sale, transportation, delivery, use, exportation, or importation of Licensed Product (but excluding what is commonly known as income taxes and taxes or charges required by U.S. Federal or state Medicaid, Medicare or similar state program or equivalent foreign governmental program).

Such amounts shall be determined in accordance with GAAP.

The sale of any Licensed Product by a Selling Party to another Selling Party for resale by such Selling Party to a Third Party (other than a Selling Party) shall not be deemed a sale for purposes of this definition of "Net Sales," *provided* that the subsequent resale is included in the computation of Net Sales. Further, transfers or dispositions of Licensed Products as [***], consistent with prevailing industry standards, and Licensed Products provided [***] shall be disregarded in determining Net Sales.

If any discounts or other deductions or rebates are made in connection with sales of a Licensed Product that is bundled or sold together with other products of the Selling Parties, then the discount, deduction or rebate applied to the Licensed Product shall not exceed the discount, deduction or rebate applied to any of the other products of the Selling Parties in such arrangement based upon the respective list prices of the Licensed Product and such other products prior to applying the discount, *unless* Reneo provides evidence reasonably satisfactory to vTv that such difference is commercially reasonable and does not unfairly prejudice the Licensed Product in favor of such other products.

For any Licensed Product which is sold as a Combination Product, the Net Sales for such Combination Product shall be adjusted by multiplying the actual Net Sales of such Combination Product by the fraction A/(A+B) where A is [***], and B is [***]. If the other product(s) or product component(s) is(are) not sold separately, then the actual Net Sales of such Combination Product shall be adjusted by multiplying the actual Net Sales of such Combination Product by the fraction A/C where A is [***], and C is [***]. If neither the Compound nor the other active product(s) or product component(s) of the Combination Product are sold separately in the applicable country, then Reneo shall determine the Net Sales of the Combination Product in good faith based on the respective values of the components of such Combination Product, subject to agreement by vTv, not to be unreasonably withheld, conditioned or delayed.

1.30 "Patent" means all: (a) letters patent (including inventor's certificates), including any substitution, extension, registration, confirmation, validation, reissue, re-examination, supplementary protection certificates, confirmation patents, patent of additions, renewal or any like filing thereof; (b) pending applications for letters patent (including applications for inventor's certificates), including any continuation, division or continuation-in-part thereof and any provisional applications; and (c) any United States and international counterparts to any of (a) and (b) above.

1.31 "Phase 2 Clinical Trial" means a study of a Licensed Product in the Field in human patients designed or intended to determine initial efficacy, pharmacological effect or dose range or regimen, as further defined in 21 C.F.R. 312.21(b), or the corresponding regulations in any jurisdiction or country other than the United States, or any amended or successor regulations, to permit the design of further clinical trials.

1.32 "Phase 3 Clinical Trial" means a pivotal study in the Field in human patients with a defined dose or a set of defined doses of a Licensed Product designed or intended to ascertain efficacy and safety of such Licensed Product for the purpose of enabling the preparation and submission of a Marketing Authorization Application to the competent Regulatory Authority in a country of the Territory, as further defined in 21 C.F.R. 312.21(c), or the corresponding regulations in any jurisdiction or country other than the United States, or any amended or successor regulations.

1.33 **"PPAR"** means peroxisome proliferation activated receptor.

1.34 **"Regulatory Approval"** means any and all approvals (including supplements, amendments, and pre- and post-approvals), licenses, registrations or authorizations (or waivers) of any national, supra-national (e.g., the European Commission or the Council of the EU), regional, state or local regulatory agency, department, bureau, commission, council or other governmental entity, that are necessary for the manufacture, distribution, use, import, transport, promotion, marketing, offer for sale or sale of a product in a regulatory jurisdiction; but excluding any pricing and reimbursement approval.

1.35 **"Regulatory Authority"** means the applicable national (e.g., the FDA), supra-national (e.g., the European Commission or the Council of the EU), regional, state or local regulatory agency, department, bureau, commission, council or other Governmental Authority that, in each case, regulates or governs the Development of a Compound or Licensed Product or the granting of Regulatory Approval of a Licensed Product in a regulatory jurisdiction.

1.36 **"Regulatory Exclusivity"** means any exclusive marketing rights or data exclusivity rights granted by a Regulatory Authority (other than Patents) with respect to a Licensed Product sold in a given country, including orphan drug exclusivity, new chemical entity exclusivity, data exclusivity or pediatric exclusivity.

1.37 **"Regulatory Materials"** means applications, submissions, notifications, registrations, Regulatory Approvals or other filings made to or with, or other approvals granted by, a Regulatory Authority that are necessary or reasonably desirable in order to Develop, Manufacture, use, market, sell or otherwise Commercialize a Licensed Product in a particular country or regulatory jurisdiction.

1.38 **"Reneo Know-How"** means all Information Controlled by Reneo, or any Affiliate it controls (within the meaning of Section 1.1), in each case as of the effective date of any termination of this Agreement (but not expiration of this Agreement), that is necessary to Develop, Manufacture or Commercialize any Compound or any Licensed Product; *provided*, *however*, that "Reneo Know-How" excludes Information Controlled by Reneo or any such controlled Affiliates to the extent relating to any compound, other than a Compound, that may be included in a Licensed Product that is a Combination Product or the Development, Manufacture or Commercialization of such other compounds.

1.39 **"Reneo Patents"** means (a) any Patents Controlled by Reneo, or any Affiliate it controls (within the meaning of Section 1.1), in each case as of the effective date of any termination of this Agreement (but not expiration of this Agreement), that Cover any Compound or any Licensed Product or any Reneo Know-How, including Reneo's interest in any Patents that Cover any Compound or any Licensed Product or any Reneo Know-How and are jointly owned by Reneo or any such controlled Affiliates, on the one hand, and vTv or any Affiliate it controls (within the meaning of Section 1.1), on the other hand, and (b) any counterparts, continuations, continuations in part, divisionals, substitute applications, provisionals, patents issued or granted on any such patent applications, extensions (including supplementary protection certificates), reissues, reexaminations, registrations or confirmations of the foregoing, and foreign counterparts of any of the foregoing, whether existing on the effective date of such termination of this Agreement or filed

or issued thereafter, but in each case solely to the extent such claims are entitled to claim priority to any Patent described in clause (a); *provided*, *however*, that "Reneo Patents" excludes Patents Controlled by Reneo or any such controlled Affiliates to the extent relating to any compound, other than a Compound, that may be included in a Licensed Product that is a Combination Product or the Development, Manufacture or Commercialization of such other compounds.

1.40 **"Reneo Technology"** means the Reneo Know-How and Reneo Patents.

1.41 **"SEC"** means the U.S. Securities and Exchange Commission, and any successor thereto.

1.42 **"Securities Act"** means the Securities Act of 1933, as amended.

1.43 **"Sponsor Group"** means (a) M&F Worldwide Corp., (b) MacAndrews & Forbes Holdings Inc., (c) each of M&F Worldwide Corp.'s and MacAndrews & Forbes Holdings Inc.'s Affiliates, excluding vTv and its direct and indirect subsidiaries, (d) Ronald O. Perelman and (e) any of the directors or executive officers of MacAndrews & Forbes Holdings Inc.

1.44 **"Sublicensee"** means a Third Party that is granted a sublicense under any of the vTv Technology to Develop or Commercialize any Compound or Licensed Product in the Territory, beyond the mere right to purchase the Licensed Product from or to provide services on behalf of Reneo and its Affiliates. In no event shall vTv or any of its Affiliates be deemed a Sublicensee.

1.45 **"Territory"** means all countries in the world.

1.46 **"Third Party"** means any person or entity other than: (a) Reneo; (b) vTv; or (c) an Affiliate of either Party.

1.47 **"U.S."** or **"United States"** means the United States of America, including all possessions and territories thereof.

1.48 **"Valid Claim"** means (a) a claim in an issued Patent that has not: (i) expired or been canceled; (ii) been declared invalid by an unreversed and unappealable or unappealed decision of a court or other appropriate body of competent jurisdiction; (iii) been admitted to be invalid or unenforceable through reissue, disclaimer or otherwise; or (iv) been abandoned in accordance with or as permitted by the terms of this Agreement or by mutual written agreement of the Parties or (b) a claim of any patent application that has not been cancelled, withdrawn, abandoned or finally rejected by an administrative agency action from which no appeal can be taken; *provided* that any such claim in any pending patent application has not been pending for more than [***] years from the filing date of the earliest patent application from which such claim derives priority; and *provided*, *further*, that, if any such claim issues after the end of such [***] year period, it will upon such issuance again be a Valid Claim subject to clause (a) above.

1.49 **"vTv Know-How"** means all Information Controlled by vTv, or any Affiliate it controls (within the meaning of Section 1.1), as of the Effective Date or during the Term that is necessary to Develop, Manufacture or Commercialize any Compound or any Licensed Product, including all Information contained or embodied in all documents and materials listed on

Exhibit 1.49; *provided, however*, that "vTv Know-How" excludes Information Controlled by vTv or any such controlled Affiliates to the extent relating to any compound, other than a Compound, that may be included in a Licensed Product that is a Combination Product or the Development, Manufacture or Commercialization of such other compounds.

1.50 "vTv Patents" means (a) any Patents Controlled by vTv, or any Affiliate it controls (within the meaning of Section 1.1), as of the Effective Date or during the Term that Cover any Compound or any Licensed Product or any vTv Know-How, including (i) those Patents listed on Exhibit 1.50 and (ii) vTv's interest in any Patents that Cover any Compound or any Licensed Product or any vTv Know-How and are jointly owned by vTv or any such controlled Affiliates, on the one hand, and Reneo or any Affiliates it controls (within the meaning of Section 1.1), on the other hand, and (b) any counterparts, continuations, continuations in part, divisionals, substitute applications, provisionals, patents issued or granted on any such patent applications, extensions (including supplementary protection certificates), reissues, reexaminations, registrations or confirmations of the foregoing, and foreign counterparts of any of the foregoing, whether existing on the Effective Date or filed or issued thereafter, but in each case solely to the extent such claims are entitled to claim priority to any Patent described in clause (a); *provided, however*, that "vTv Patents" excludes Patents Controlled by vTv or any such controlled Affiliates to the extent relating to any compound, other than a Compound, that may be included in a Licensed Product that is a Combination Product or the Development, Manufacture or Commercialization of such other compounds. Exhibit 1.50 may be updated from time-to-time during the Term upon the mutual written agreement of the Parties.

1.51 "vTv Technology" means the vTv Know-How and vTv Patents.

1.52 Additional Definitions. Each of the following definitions is set forth in the section of the Agreement indicated below:

Definition	Section
"Acquirer Program"	2.3(c)
"[***]"	3.2(b)
"Agreement"	Preamble
"Alliance Manager"	4.1
"Charter"	8.2(a)(iii)
"Claims"	9.1(a)
"[***]"	2.3(b)
"Competitive Infringement"	5.3(a)
"Development Plan"	4.4
"Effective Date"	Preamble
"Equity Securities"	3.2(b)
"[***]"	3.2(b)
"First Indication"	3.3(a)
"Fully Diluted Shares"	3.2(b)
"[***]"	3.3(a)
"ICC"	10.3

"Indemnified Party"	9.1(c)
"Indemnifying Party"	9.1(c)
"[***]"	3.2(a)
"[***]"	3.2(a)
"Party" and **"Parties"**	Preamble
"Pre-Existing Affiliates"	11.4(b)
"Prior CDA"	6.7
"Product Marks"	4.7
"Reneo"	Preamble
"Reneo Indemnitees"	9.1(b)
"Royalty Term"	3.5(b)
"Sale Transaction"	11.4(b)
"Second Indication"	3.3(b)
"Selling Party"	1.29
"Shares"	3.2(b)
"Sublicensing Revenues"	3.6
"Table 3.3(a)	3.3(a)
"Table 3.3(b)"	3.3(b)
"Term"	7.1
"Third Party Acquirer"	11.4(b)
"Third Party License"	3.5(e)(ii)
"US First Approval"	3.3(a)
"US Second Approval"	3.3(b)
"vTv"	Preamble
"vTv Indemnitees"	9.1(a)

2. LICENSES AND RELATED RIGHTS

2.1 License Grant. Subject to the terms and conditions of this Agreement, vTv hereby grants Reneo during the Term an exclusive (even as to vTv and its Affiliates), royalty-bearing license, with the right to sublicense through multiple tiers as provided in Section 2.2, under the vTv Technology to Develop, Manufacture, have Manufactured, seek Regulatory Approval for, use, sell, offer to sell, import and otherwise Commercialize Compounds and Licensed Products in the Field in the Territory.

2.2 Sublicensing; Subcontracting. Reneo shall have the right to grant sublicenses of the license granted to it under Section 2.1, through multiple tiers of sublicense, or subcontract its activities with respect to any Compound or Licensed Product, to its Affiliates, contractors and any other Third Party, *provided* that: (a) Reneo shall remain responsible for the compliance with this Agreement by any such Affiliate, Sublicensee or subcontractor; (b) each such sublicense or subcontract agreement shall be consistent with the terms and conditions of this Agreement; and (c) Reneo shall use Commercially Reasonable Efforts to obtain the written agreement of each Sublicensee to grant Reneo Control of applicable rights as necessary to enable Reneo to grant to vTv the scope of rights set forth in Section 7.7, provided that the foregoing shall not be construed to limit the rights of Sublicensees under Section 7.6(b)(ii). Reneo shall provide vTv with a copy

of each sublicense agreement entered into with each Sublicensee, and each amendment thereto, within thirty (30) days of its execution (*provided* that Reneo may redact any confidential information contained therein that is not necessary to ensure compliance with this Agreement).

2.3 Negative Covenants.

(a) Reneo covenants that it will not and will not permit any of its Affiliates, Sublicensees or subcontractors to use or practice any vTv Technology outside the scope of the license granted under Section 2.1.

(b) vTv covenants that it will not and will not permit any of its Affiliates to, and it and its Affiliates will not grant the right to or assist or collaborate with any Third Party (including any member of the Sponsor Group) to, directly or indirectly, [***].

(c) If, during the Term, vTv or any of its Affiliates is acquired by a Third Party (whether such acquisition occurs by way of a purchase of assets, merger, consolidation, change of control or otherwise), then, notwithstanding anything to the contrary in Section 2.3(b), neither the acquiring Third Party nor any of such Third Party's Pre-Existing Affiliate(s), shall be prohibited from [***] (any such activities, an "**Acquirer Program**"), and such Acquirer Program will not constitute a violation of Section 2.3(b); *provided* that (i) no vTv Technology, Reneo Technology or other Confidential Information of Reneo is used in such Acquirer Program and (ii) the acquiring Third Party shall establish reasonable internal safeguards designed to prevent any use of vTv Technology, Reneo Technology or other Confidential Information of Reneo in such Acquirer Program.

2.4 No Implied Licenses. Except as explicitly set forth in this Agreement, neither Party shall be deemed by estoppel, implication or otherwise to have granted the other Party any license or other right to any intellectual property of such Party.

3. COMPENSATION

3.1 Upfront Payment. Reneo shall pay vTv a one-time, non-refundable and non-creditable upfront cash payment of three million Dollars ($3,000,000), which shall be paid within two (2) business days after the Effective Date.

3.2 Equity Consideration.

(a) [***]. Upon the Effective Date, in partial consideration of the rights granted hereunder, Reneo shall issue to vTv [***] shares of Reneo's Common Stock (the "**[***]**") pursuant to the terms of the stock purchase agreement attached hereto as Exhibit 3.2(a) (the "**[***]**").

(b) [***]. [***]. To the extent Reneo has granted or in the future grants any registration rights to one or more stockholders, Reneo will grant vTv a comparable right to register all Shares and [***], subject to customary exceptions (which obligation may be satisfied by providing such rights in the context of an investor rights agreement or similar agreement pursuant to which vTv and such other stockholders are granted such rights on a collective (*i.e.*, not on an individual basis)). [***].

(c) Stock Agreement. As a condition precedent to the effectiveness of this Agreement, the Parties shall have duly authorized, executed and delivered the [***] Stock Purchase Agreement and performed their respective obligations that are required to be performed thereunder. In addition, Reneo's obligation to [***] is subject to and conditioned upon [***].

3.3 Development Milestone Payments.

(a) First Indication. Reneo shall make each of the non-refundable and non-creditable development milestone payments set forth in the table below in this Section 3.3(a) ("**Table 3.3(a)**") to vTv within thirty (30) days after the first achievement (whether by or on behalf of Reneo or any of its Affiliates or, subject to Section 3.6, Sublicensees) of the corresponding milestone event set forth in Table 3.3(a) by the first Licensed Product to achieve such milestone event. The Indication in which each milestone event in Table 3.3(a) is first achieved by any Licensed Product is referred to herein as the "**First Indication**"; *provided, however,* that the Indication constituting the "First Indication" in which a given milestone event in Table 3.3(a) is achieved may be the same as or different from the Indication constituting the "First Indication" in which any other milestone event in Table 3.3(a) is achieved. Each milestone payment set forth in Table 3.3(a) shall be paid only once during the Term, for the first time any Licensed Product reaches such milestone event for the First Indication in which such milestone event is achieved, and regardless of the number of Licensed Products that achieve such milestone event, the number of times such milestone event is achieved by any Licensed Product, or the number of additional Indications in which such milestone event is subsequently achieved. For clarification, the total milestone payments payable under this Section 3.3(a) if all milestone events in Table 3.3(a) are achieved is [***].

Milestone Event	Milestone Payment
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]

(b) Second Indication. Reneo shall make each of the non-refundable and non-creditable development milestone payments set forth in the table below in this Section 3.3(b) ("**Table 3.3(b)**") to vTv within thirty (30) days after the first achievement (whether by or on behalf of Reneo or any of its Affiliates or, subject to Section 3.6, Sublicensees) of the corresponding milestone event set forth in Table 3.3(b) by the first Licensed Product to achieve such milestone event for the second Indication (*i.e.*, the first additional Indication other than the First Indication for which the milestone payment for the corresponding milestone event in Table 3.3(a) was paid). The Indication in which each milestone event in Table 3.3(b) is first achieved by any Licensed Product, after achievement of the corresponding milestone event in Table 3.3(a) in the First Indication is referred to herein as the "**Second Indication**"; *provided, however,* that the Indication

constituting the "Second Indication" in which a given milestone event in Table 3.3(b) is achieved may be the same as or different from the Indication constituting the "Second Indication" in which any other milestone event in Table 3.3(b) is achieved. Each milestone payment set forth in Table 3.3(b) shall be paid only once during the Term, for the first time any Licensed Product reaches such milestone event for the Second Indication in which such milestone event is achieved, regardless of the number of Licensed Products that achieve such milestone event, the number of times such milestone event is achieved by any Licensed Product, or the number of additional Indications in which such milestone event is subsequently achieved. For clarification, the total milestone payments payable under this Section 3.3(b) if all milestone events in Table 3.3(b) are achieved for a Second Indication is [***].

Milestone Event	Milestone Payment
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]

(c) [***].

3.4 Sales Milestone Payments. Reneo shall make each of the following one-time, non-refundable and non-creditable sales milestone payments to vTv within [***] days after the end of the [***] in which aggregate annual Net Sales of all Licensed Products in the Territory first reach the thresholds specified below. Reneo shall notify vTv promptly of the achievement of each such sales threshold. If more than one sales threshold is reached in any given calendar year, then the applicable milestone payment for each such achievement shall be due and owing with respect to such calendar year.

Threshold for Aggregate Annual Worldwide Net Sales	Milestone Payment
[***]	[***]
[***]	[***]
[***]	[***]

3.5 Royalty Payments.

(a) Royalty Rates. Reneo shall pay to vTv non-refundable, non-creditable royalties on aggregate annual Net Sales of each Licensed Product in the Territory in each calendar year at the applicable rate(s) set forth below, with such royalties to be calculated by multiplying the applicable incremental amount of Net Sales of such Licensed Product in the Territory in a

calendar year by the corresponding royalty rate set forth in the table below and by subsequently making the applicable adjustments in accordance with Section 3.5(e) below:

Annual Net Sales of Licensed Product	Royalty Rate
For that portion of annual Net Sales less than or equal to [***]	[***]
For that portion of annual Net Sales greater than [***] and less than or equal to [***]	[***]
For that portion of annual Net Sales greater than [***] and less than or equal to [***]	[***]
For that portion of annual Net Sales greater than [***]	[***]

(b) Royalty Term. Royalties under this Section 3.5 shall be payable on a Licensed Product-by-Licensed Product and country-by-country basis in the Territory during the period commencing on the First Commercial Sale of such Licensed Product in such country and continuing until the latest of (i) expiration of the last-to-expire Valid Claim of the vTv Patents in the country of sale Covering such Licensed Product or the Compound contained therein, or the manufacture or use of such Licensed Product or Compound contained therein; (ii) expiration of any Regulatory Exclusivity for such Licensed Product in such country; and (iii) the [***] anniversary of the First Commercial Sale of such Licensed Product in such country (the "**Royalty Term**"). Upon expiration of the Royalty Term for any Licensed Product in a given country, the licenses granted to Reneo under Section 2.1 with respect to such Licensed Product in such country shall automatically become fully paid-up, perpetual and royalty-free and shall survive any expiration or termination of this Agreement, and Net Sales of such Licensed Product in such country shall thereafter be excluded from aggregate annual Net Sales of such Licensed Product for purposes of calculating royalties pursuant to Section 3.5(a).

(c) Royalty Reports and Payments. Within [***] days following the end of each calendar quarter following the First Commercial Sale of any Licensed Product anywhere in the Territory, Reneo shall provide vTv with a report containing the following information for the applicable calendar quarter, on a Licensed Product-by-Licensed Product and country-by-country basis: (i) gross sales and Net Sales of such Licensed Product in such country (including reasonable details regarding each deduction set forth in Sections 1.29 [***] taken by Reneo or its applicable Affiliate(s) or Sublicensee(s)); (ii) the basis for any adjustments to royalties due to vTv on account of Net Sales of such Licensed Product in such country; (iii) a calculation of the royalty payment due to vTv on account of Net Sales of such Licensed Product in such country; and (iv) the exchange rate used in calculating any of the foregoing. Concurrent with the delivery of the applicable quarterly report, Reneo shall pay the royalty payment due to vTv pursuant to this Section 3.5 for such calendar quarter.

(d) Existing Third Party Payment Obligations. vTv shall be responsible for any payments to any Third Parties for Patents or Information licensed or acquired by vTv prior to the Effective Date, which are included in the vTv Technology.

(e) Royalty Adjustments.

(i) During any part of the Royalty Term for a Licensed Product in a country in which there is no Valid Claim of the vTv Patents Covering such Licensed Product or the Compound contained therein, or the manufacture or use of such Licensed Product or Compound contained therein, in such country, but there is Regulatory Exclusivity for such Licensed Product in such country, the royalty payable with respect to Net Sales of such Licensed Product in such country shall be reduced by [***]. During any part of the Royalty Term for a Licensed Product in a country in which (A) there is no Valid Claim of the vTv Patents Covering such Licensed Product or the Compound contained therein, or the manufacture or use of such Licensed Product or Compound contained therein, in such country, and (B) there is no Regulatory Exclusivity for such Licensed Product in such country, the royalty payable with respect to Net Sales of such Licensed Product in such country shall be reduced by [***]. The foregoing reductions will be calculated by determining the portion of total Net Sales of the relevant Licensed Product in a calendar quarter that is attributable to the country in which such reduction applies, and determining the total royalties for such Licensed Product without reduction, and then reducing by [***] or [***], as applicable, the applicable portion (based on Net Sales of such Licensed Product in such country as a percentage of total Net Sales of such Licensed Product) of total royalties attributable to such Licensed Product in such country.

(ii) If Reneo or any of its Affiliates or Sublicensees, as applicable, determines, in its reasonable judgment, that it is necessary to obtain a license from any Third Party (each a "**Third Party License**") under any Patents in order to manufacture, use, sell, offer for sale or import a Licensed Product in a country, then Reneo may deduct [***] of any royalty amount (or comparable payment based on sales of Licensed Product) paid by Reneo or its Affiliate or Sublicensee in any calendar quarter to such Third Party with respect to sales of such Licensed Product in such country under such Third Party License from the royalty payment that would otherwise be due with respect to Net Sales of such Licensed Product in such country in such calendar quarter pursuant to Section 3.5(a); *provided*, *however*, that in no event shall any royalty payment to vTv on Net Sales of any Licensed Product in any country in any calendar quarter be reduced to less than [***] of the royalties that would otherwise be owed to vTv with respect to Net Sales of such Licensed Product under Section 3.5(a). Any amount of royalties paid to such Third Party which is entitled to be deducted under this Section 3.5(e)(ii) but is not deducted as a result of the foregoing limitation shall be carried over and applied against royalties payable to vTv in respect of such Licensed Product in such country in subsequent calendar quarters until the full deduction is taken.

3.6 Sublicensing Revenues. If Reneo grants to a Third Party a sublicense under any of the vTv Technology to Develop, Manufacture or Commercialize a Licensed Product in the Territory, beyond the mere right to purchase such Licensed Product from or to provide services on behalf of Reneo and its Affiliates, Reneo would pay to vTv: (a) the royalties payable pursuant to Section 3.5 on Net Sales of Licensed Products by such Sublicensee; and (b) a percentage of Sublicensing Revenues received by Reneo or its Affiliates from such Sublicensee in consideration

for such sublicense as follows: (i) [***], if such sublicense is first entered into prior to [***]; and (ii) [***], if such sublicense is first entered into on or after [***]. Notwithstanding the foregoing, in the event that Reneo or its Affiliate receives Sublicensing Revenues for the achievement of a milestone event set forth in Section 3.3 or 3.4, Reneo shall pay vTv the greater of (A) [***]; or (B) [***], but not both. For the purposes of this Section 3.6, "**Sublicensing Revenues**" means [***] received by Reneo or any of its Affiliates from a Sublicensee in consideration for a sublicense under any of the vTv Technology to Develop, Manufacture or Commercialize a Licensed Product, but excludes [***].

3.7 Payment Method; Currency. All payments due under this Agreement to vTv shall be made by bank wire transfer in immediately available funds to an account designated by vTv. All payments hereunder shall be made in Dollars. When conversion of payments from any currency other than Dollars is required, such conversion shall be at an exchange rate equal to the weighted average of the rates of exchange for the currency of the country from which such payments are payable as published by *The Wall Street Journal*, Western U.S. Edition, during the calendar quarter in which the applicable sales were made.

3.8 Late Payment. If Reneo fails to make any payment due to vTv under this Agreement, then interest shall accrue on a monthly basis at the rate equal to [***], or at the maximum rate permitted by applicable Law, whichever is the lower.

3.9 Records; Inspection. Reneo shall, and shall cause its Affiliates and Sublicensees to, keep complete, true and accurate books of account and records for the purpose of determining the payments to be made under this Agreement. Such books and records shall be kept for [***] years following the end of the calendar year to which they pertain. Such records shall be open for inspection during such period by independent accountants, solely for the purpose of verifying payment statements hereunder for a period covering not more than the [***] prior to the date of request; *provided* that no period shall be subject to inspection under this section more than once. Such inspections shall be made no more than once each calendar year, on reasonable notice during normal business hours. The auditor will execute a reasonable written confidentiality agreement with Reneo and will disclose to vTv only such information as is reasonably necessary to provide vTv with information regarding any actual or potential discrepancies between amounts reported and actually paid and amounts payable under this Agreement. The auditor will send a copy of the report to Reneo at the same time it is sent to vTv. The report sent to both Parties will include the methodology and calculations used to determine the results. Any unpaid amounts (plus interest as set forth in Section 3.8) that are discovered shall be paid promptly by Reneo. Inspections conducted under this Section 3.9 shall be at the expense of vTv, unless the inspection discloses an underpayment by Reneo of [***] or more of the amount due for any period covered by the inspection, whereupon all costs relating to the inspection for such period shall be paid promptly by Reneo. If an inspection conducted pursuant to this Section 3.9 discloses an overpayment by Reneo, then Reneo will deduct the amount of such overpayment from amounts otherwise owed to vTv under this Agreement, unless no further payments are due hereunder, in which case the amount of such overpayment shall be refunded by vTv to Reneo.

3.10 Taxes.

(a) Taxes. Each Party shall be solely responsible for the payment of all taxes imposed on amounts paid or payable to such Party under this Agreement or any transaction contemplated hereby. To the extent Reneo is required to deduct and withhold taxes on any payment to vTv, Reneo shall deduct such taxes from the payment made to vTv, pay the amounts of such taxes to the proper Governmental Authority in a timely manner and promptly transmit to vTv an official tax certificate or other evidence of such withholding sufficient to enable vTv to claim credit for such payment of taxes.

(b) Tax Cooperation. The Parties agree to cooperate with one another and use reasonable efforts to reduce or eliminate tax obligations (including withholding) in respect of amounts payable by Reneo to vTv under this Agreement to the extent permitted by applicable Laws. Each Party shall provide to the other Party any tax forms that may be reasonably necessary in order for Reneo to not withhold tax or to withhold tax at a reduced rate. Reneo shall use reasonable efforts to identify any such forms prior to the due date and advise vTv of the same. Each Party shall provide the other with reasonable assistance to enable the recovery, as permitted by applicable Laws, of taxes paid with respect to, or withheld from, payments made under this Agreement, such recovery to be for the benefit of the Party bearing such tax.

4. DEVELOPMENT AND COMMERCIALIZATION

4.1 Alliance Managers. Within thirty (30) days after the Effective Date, each Party shall appoint and notify the other Party of the identity of a representative having the appropriate qualifications, including a general understanding of pharmaceutical development and commercialization issues, to act as its alliance manager under this Agreement (each, an "**Alliance Manager**"). The Alliance Managers shall serve as the primary contact points between the Parties for the purpose of providing vTv with information on the progress of Reneo's Development and Commercialization activities under this Agreement. The Alliance Managers shall also be primarily responsible for facilitating the flow of information and otherwise promoting communication and coordination between the Parties. Each Party may replace its Alliance Manager at any time upon written notice to the other Party.

4.2 vTv Know-How Transfer. Within [***] days after the Effective Date, vTv shall deliver to Reneo the vTv Know-How set forth on Exhibit 1.49. In addition, vTv shall deliver to Reneo any vTv Know-How that comes into existence, or existed as of the Effective Date but is only identified, after the Effective Date and was not previously provided to Reneo promptly after the development or identification thereof. During the [***] period after the Effective Date, vTv shall make available to Reneo, on a reasonable consultation basis, such advice of its technical personnel as may be reasonably requested by Reneo in connection with such transfer of vTv Know-How. Reneo agrees to reimburse vTv for the reasonable and documented fully-burdened charges for the time and expenses of such personnel when consulting for Reneo (including reasonable documented travel expenses, lodging and meals) incurred by personnel of vTv at the request of Reneo while rendering services under this Section 4.2. Reneo shall reimburse all such amounts within thirty (30) days after receipt of any invoice therefor.

4.3 Development Responsibilities. As between the Parties, Reneo shall have sole authority and responsibility for conducting or having conducted Development activities with respect to Compounds and Licensed Products in the Territory, at its sole cost and expense, in accordance with the terms and conditions of this Agreement. Reneo shall conduct all such activities in compliance in all material respects with all applicable Laws. Reneo shall have sole responsibility and control with respect to seeking Regulatory Approvals with respect to Licensed Products. As between the Parties, Reneo shall hold legal title to all Regulatory Materials within the Territory. Promptly following the Effective Date, vTv shall take and cause to be taken such actions and execute such documents that are requested in writing by Reneo to the extent necessary to transfer to Reneo all Regulatory Materials within the vTv Know-How.

4.4 Development Plan. Reneo shall prepare a written development plan, summarizing the Development activities related to any Compound or Licensed Product to be conducted by Reneo, its Affiliates, Sublicensees and subcontractors, and the timeline regarding such activities (as may be amended, the "**Development Plan**"). An initial Development Plan is attached to this Agreement as Exhibit 4.4. Reneo shall review from time to time and, as appropriate, prepare an update to the then-current Development Plan that reflects any material changes with respect to Development of Licensed Products and send such updated Development Plan to vTv for review. Reneo shall give good faith consideration to any written comments provided by vTv with respect to any updated Development Plan, but shall retain sole control over decisions with regard to the Development Plan and any changes thereto. Reneo and its Affiliates and Sublicensees, as applicable, shall conduct Development of Compounds and Licensed Products in accordance with the then-current Development Plan.

4.5 Commercialization Responsibilities. As between the Parties, Reneo shall have sole authority and responsibility for conducting or having conducted Commercialization activities with respect to Licensed Products in the Territory, at its sole cost and expense, in accordance with the terms and conditions of this Agreement. Reneo shall conduct all such activities in compliance in all material respects with all applicable Laws. It is understood that as between the Parties, Reneo shall be solely responsible for handling all returns, order processing, invoicing and collection, distribution, and receivables for Licensed Products in the Territory.

4.6 Development Records and Reports. Reneo shall maintain complete and accurate customary records (in the form of technical notebooks or electronic files where appropriate) of all Development activities related to any Compound or Licensed Product conducted by it or any of its Affiliates or Sublicensees, as applicable, under this Agreement and all Information resulting from such work. Such records, including any electronic files where such Information may also be contained, shall fully and properly reflect all work done and results achieved in the performance of the Development activities related to any Compound or Licensed Product in sufficient detail and in good scientific manner appropriate for applicable patent and regulatory purposes. Upon the expiry of each consecutive [***] month period during the Term until First Commercial Sale of a Licensed Product, Reneo shall provide vTv with a written report summarizing its Development activities related to any Compound or Licensed Product conducted by Reneo or any of its Affiliates or Sublicensees, as applicable, under this Agreement and the results of such activities, and shall be reasonably available for at least one (1) meeting (which may be held in person or by videoconference or teleconference) to discuss each such written report. Any information or report

provided by Reneo to vTv pursuant to this Section 4.6 shall be deemed to be Reneo's Confidential Information and subject to the provisions of Article 6.

4.7 Trademarks. Reneo shall have the right to brand Licensed Products using Reneo related trademarks and any other trademarks and trade names it determines appropriate for the Licensed Products which may vary by country or within a country ("**Product Marks**"), *provided* that Reneo shall not, and shall not permit its Affiliates or Sublicensees to, make any use of the trademarks or house marks of vTv or its Affiliates (including their corporate names) or any trademark confusingly similar thereto. As between the Parties, Reneo or its Affiliate or Sublicensees or subcontractors (as applicable) shall own all rights in the Product Marks and shall register and maintain the Product Marks in the countries and regions Reneo determines reasonably necessary at its own cost and expense.

4.8 Diligence. During the Term, Reneo (by itself or through its Affiliates or Sublicensees, as applicable), shall use Commercially Reasonable Efforts to (a) [***], and (b) [***]. For clarity, it is understood and acknowledged that to the extent that Reneo uses Commercially Reasonable Efforts (by itself or through its Affiliates or Sublicensees, as applicable) to seek Regulatory Approval for [***], Reneo shall be in compliance with this Section 4.8 with respect to seeking Regulatory Approval for [***]. Reneo will have no obligations to devote or cause to be devoted any level of diligence with respect to the Development, Regulatory Approval or Commercialization of Licensed Products except as set forth in this Section 4.8.

5. INTELLECTUAL PROPERTY

5.1 Ownership. Ownership of Information, discoveries and inventions (patentable or not) generated, conceived or reduced to practice after the Effective Date in the performance of the Development, Manufacture, Commercialization or other activities conducted by Reneo or any of its Affiliates or Sublicensees, as applicable, using vTv Technology, including Patents filed thereon and other intellectual property rights therein, shall be determined in accordance with inventorship under United States patent Laws. Reneo or its Affiliate shall be solely responsible, at its discretion and expense, for all decisions and actions with respect to the preparation, filing, prosecution and maintenance of any such Patents solely owned by it; *provided*, *however*, that Reneo shall notify vTv in writing [***] of any patent application solely owned by Reneo or any of its Affiliates or Sublicensees Covering any Compound or Licensed Product or the manufacture or use of any Compound or Licensed Product filed by Reneo or any of its Affiliates or Sublicensees (to the extent not previously disclosed to vTv).

5.2 Patent Prosecution.

(a) vTv Patents. All decisions and actions with respect to the preparation, filing, prosecution and maintenance of the vTv Patents shall be the responsibility of Reneo, using patent counsel reasonably acceptable to vTv, at Reneo's sole cost and expense; *provided*, *however*, that Reneo shall notify vTv in writing promptly after Reneo files any patent application included in the vTv Patents. Reneo may abandon or discontinue the prosecution or maintenance of any vTv Patent in a country; *provided* that Reneo first notifies vTv in writing at least [***] days in advance of the due date of any payment or other action that is required to prosecute or maintain such vTv

Patent, and, upon such notice, vTv shall have the option, but not the obligation, to prepare, file, prosecute and maintain such vTv Patent in the Territory at its sole cost and expense.

(b) Patent Term Extensions. As between the Parties, Reneo shall have the authority and responsibility to file for and seek to obtain patent term extensions (including any pediatric exclusivity extensions as may be available) or supplemental protection certificates or their equivalents in any country with respect to Patents covering Licensed Products.

(c) Data Exclusivity. With respect to data exclusivity periods, Reneo shall have the sole right, but not the obligation, consistent with its obligations under applicable Laws (including any applicable consent order), to seek, maintain and enforce all such data exclusivity periods available for Licensed Products.

(d) Cooperation. Promptly following the Effective Date, (but no less than [***] days before any statutory bar date), vTv will transfer to Reneo all Information concerning the preparation, filing, prosecution and maintenance of the vTv Patents. vTv shall cooperate with Reneo and shall execute any power of attorney or similar document, in each case to the extent reasonably required to allow Reneo to assume the preparation, filing, prosecution and maintenance of the vTv Patents in Reneo's name. Reneo shall cooperate with vTv, in each case to the extent reasonably required to allow vTv to assume the preparation, filing, prosecution and maintenance, of any Patent abandoned by Reneo pursuant to Section 5.2(a).

5.3 Patent Enforcement.

(a) Notification. If either Party becomes aware of any existing or threatened infringement of any vTv Patent in the Field in the Territory, including (i) any such existing or threatened infringement on account of a Third Party's manufacture, use or sale of any Compound or Licensed Product in the Field in any country in the Territory, or (ii) any certification filed by a Third Party in the United States pursuant to the Drug Price Competition and Patent Term Restoration Act of 1984 (or any successor legislation) or similar provisions in other jurisdictions, in connection with an abbreviated new drug application or a paper new drug application (or equivalent) with respect to any Compound or Licensed Product in the Field in any country in the Territory, or any other similar Third Party communication, including notices pursuant to §§ 101 and 103 of such act from any person or entity who has filed an abbreviated new drug application or a paper new drug application (or equivalent) with respect to any Compound or Licensed Product in the Field ((i) and (ii), collectively, "**Competitive Infringement**"), it shall promptly notify the other Party in writing to that effect, and the Parties will consult with each other regarding any actions to be taken with respect to such Competitive Infringement.

(b) Right to Enforce. Reneo shall have the first right, but shall not be obligated, to bring and control an infringement action with respect to any Competitive Infringement of any vTv Patent, at Reneo's sole cost and expense. If Reneo does not bring such an action with respect to a vTv Patent (or settle or otherwise secure the abatement of such infringement) prior to the earlier of: (i) [***] days following Reneo's receipt or delivery of the notice under Section 5.3(a), or (ii) [***] days before the deadline, if any, set forth in the applicable Laws for the filing of such actions, vTv shall have the right to bring and control any such action, at its own expense and by counsel of its own choice.

(c) Cooperation. Each Party shall cooperate fully with the enforcing Party in such enforcement, at such enforcing Party's request and expense, including joining such action as a party plaintiff if required by applicable Laws to pursue such action. The enforcing Party shall keep the other Party regularly informed of the status and progress of such enforcement efforts and shall reasonably consider the other Party's comments on any such efforts. The non-enforcing Party shall be entitled to separate representation in such matter by counsel of its own choice and at its own expense, but such Party shall at all times cooperate fully with the enforcing Party. Neither Party shall have the right to settle any patent infringement litigation under this Section 5.3 in a manner that diminishes the rights or interests of the other Party without the prior written consent of such other Party, such consent not to be unreasonably withheld, conditioned or delayed.

(d) Expenses and Recoveries. The enforcing Party bringing a claim, suit or action under this Section 5.3 shall be solely responsible for any expenses incurred by such Party as a result of such claim, suit or action. If such Party recovers monetary damages in such claim, suit or action, except as otherwise agreed by the Parties in connection with a cost-sharing arrangement, such recovery shall be allocated first to [***], and any remaining amounts shall be shared as follows: the enforcing Party shall receive [***] of such amounts and the other Party shall receive [***] of such amounts.

5.4 Patent Oppositions and Other Proceedings.

(a) If a vTv Patent becomes the subject of any proceeding commenced by a Third Party in connection with an opposition, action for declaratory judgment, nullity action, interference or other attack upon the validity, title or enforceability thereof, then Reneo shall have the first right, but not the obligation, to control such defense at its own expense using counsel of its own choice. If Reneo decides that it does not wish to defend against such action, it shall notify vTv reasonably in advance of all applicable deadlines, and vTv shall thereafter have the right, but not the obligation, to assume defense of such action at its own expense.

(b) The Party controlling any defense under this Section 5.4 shall permit the non-controlling Party to participate in the proceedings to the extent permissible under applicable Laws and to be represented by its own counsel at the non-controlling Party's expense. Notwithstanding any of the foregoing, the Party controlling any enforcement action pursuant to Section 5.3 shall also have the sole right to control the response to any attack on the validity, title, or enforceability of a Patent that is asserted by the alleged infringer(s) as a counterclaim or affirmative defense in such action. Neither Party shall have the right to settle any proceeding under this Section 5.4 in a manner that diminishes the rights or interests of the other Party without the prior written consent of such other Party, such consent not to be unreasonably withheld, conditioned or delayed.

5.5 Patent Marking. Reneo shall mark all Licensed Products (or when the character of the product precludes marking, the package containing any such Licensed Product) marketed and sold by Reneo or its Affiliates or Sublicensees in accordance with all applicable Laws relating to patent marking.

5.6 Infringement of Third Party Rights. If either Party becomes aware that any Licensed Product used or sold by Reneo or its Affiliates or Sublicensees has become the subject

of a Third Party's claim or assertion of infringement of a Patent, such Party shall promptly notify the other Party. Neither Party shall have the right to settle any patent infringement litigation under this Section 5.6 in a manner that diminishes the rights or interests of the other Party without the written consent of such other Party (which shall not be unreasonably withheld, conditioned or delayed).

6. CONFIDENTIALITY

6.1 Confidentiality Obligations. The Parties agree that during the Term and for a period of [***] years thereafter, a Party (or any of its Affiliates) receiving Confidential Information of the other Party (or any of its Affiliates) shall: (a) use reasonable efforts to maintain in confidence such Confidential Information (but not less than those efforts as such Party uses to maintain in confidence its own proprietary industrial information of similar kind and value); (b) not disclose such Confidential Information to any Third Party without prior written consent of the other Party, except to the extent expressly authorized by this Agreement or otherwise agreed in writing by the Parties; and (c) not use such other Party's Confidential Information for any purpose except those permitted by this Agreement or other written agreement between the Parties or in connection with exercising such Party's or its Affiliates' rights or fulfilling their obligations under this Agreement. Notwithstanding anything to the contrary in this Agreement, vTv and its Affiliates may not disclose any vTv Know-How to any Third Party without the prior written consent of Reneo, except to the extent required to comply with applicable Laws, including regulations promulgated by applicable security exchanges, court orders or administrative subpoenas or orders, *provided* that in such event, vTv shall promptly notify Reneo of such required disclosure and shall use reasonable efforts to assist Reneo, at Reneo's expense, in obtaining a protective order preventing or limiting the required disclosure.

6.2 Exceptions. The obligations in Sections 6.1, 6.3, 6.5, 6.6 and 7.8 shall not apply with respect to any portion of the disclosing Party's (or any of its Affiliates') Confidential Information that the receiving Party can show by competent written proof:

(a) was known to the receiving Party or any of its Affiliates, other than under an obligation of confidentiality to the disclosing Party or any of its Affiliates, at the time of disclosure by or on behalf of the disclosing Party or any of its Affiliates;

(b) was generally available to the public or otherwise part of the public domain, at the time of disclosure by or on behalf of the disclosing Party or any of its Affiliates;

(c) becomes generally available to the public or otherwise part of the public domain after the disclosure by or on behalf of the disclosing Party or any of its Affiliates, other than through any act or omission of the receiving Party or any of its Affiliates in breach of this Agreement;

(d) is subsequently disclosed to the receiving Party or any of its Affiliates by a Third Party who has a legal right to make such disclosure and who did not obtain such information directly or indirectly from the disclosing Party or any of its Affiliates under a then-surviving obligation of confidentiality; or

(e) is subsequently independently developed by employees, subcontractors or sublicensees of the receiving Party or any of its Affiliates without use of the disclosing Party's or any of its Affiliates' Confidential Information.

6.3 Authorized Disclosure. A Party may disclose the Confidential Information of the other Party or any of its Affiliates to the extent such disclosure is reasonably necessary in the following instances; *provided* that notice of any such disclosure shall be provided as soon as practicable to such other Party:

(a) filing or prosecuting Patents in accordance with Section 5.2;

(b) complying with the requirements of Regulatory Authorities with respect to obtaining and maintaining Regulatory Approval of Licensed Products;

(c) prosecuting or defending litigation as contemplated by this Agreement, including actions or proceedings in accordance with Section 5.3 or 5.4;

(d) disclosure to its or its Affiliates' employees, directors, officers, agents, consultants, professional advisors, subcontractors, licensees or sublicensees or *bona fide* potential subcontractors, licensees or sublicensees, on a need-to-know basis for the sole purpose of performing its or its Affiliates' obligations or exercising its or its Affiliates' rights under this Agreement; *provided* that in each case, the disclosees are bound by written or professional obligations of confidentiality and non-use consistent with those contained in this Agreement;

(e) disclosure to any *bona fide* potential or actual investor, acquiror or merger partner or other potential or actual financial or commercial partner for the sole purpose of evaluating an actual or *bona fide* potential investment, acquisition or other business relationship; *provided* that in each case, the disclosees are bound by written or professional obligations of confidentiality and non-use consistent with those contained in this Agreement; or

(f) complying with applicable Laws, including regulations promulgated by applicable security exchanges, court orders or administrative subpoenas or orders.

Notwithstanding the foregoing, in the event a Party is required to make a disclosure of the other Party's Confidential Information pursuant to Section 6.3(c) or (f), such Party shall promptly notify the other Party of such required disclosure and shall use reasonable efforts to assist the other Party, at such other Party's expense, in obtaining a protective order preventing or limiting the required disclosure.

6.4 Publicity; Terms of Agreement.

(a) If either Party desires to make a public announcement concerning the material terms of this Agreement, such Party shall give reasonable prior advance notice of the proposed text of such announcement to the other Party for its prior review and approval, which: (i) prior to [***], may be withheld by the other Party in its sole discretion (except as otherwise provided herein), except that vTv shall have the right, within three (3) business days after the Effective Date, to issue a press release announcing the execution of this Agreement, subject to the Parties' mutual agreement as to any description of this Agreement or the transactions contemplated

hereby contained therein; and (ii) after [***], shall not be unreasonably withheld. In the case of a press release or governmental filing required by applicable Law, the disclosing Party shall provide the other Party with such advance notice as it reasonably can and shall not be required to obtain approval therefor. A Party commenting on such a proposed press release shall provide its comments, if any, within five (5) business days after receiving the press release for review. Neither Party shall be required to seek the permission of the other Party to repeat any information regarding the terms of this Agreement or any amendment thereto that has already been publicly disclosed by such Party, or by the other Party, in accordance with this Section 6.4, provided such information remains accurate as of such time.

(b) The Parties acknowledge that either or both Parties may be obligated to file under applicable Laws a copy of this Agreement with the SEC or other Governmental Authorities. Each Party shall be entitled to make such a required filing, *provided* that it requests confidential treatment of the commercial terms and sensitive technical terms hereof and thereof to the extent such confidential treatment is reasonably available to such Party and permitted by such Governmental Authority. In the event of any such filing, the filing Party will consult with the other Party on the provisions of this Agreement to be redacted in any filing made with the SEC or as otherwise required by applicable Laws; *provided* that the filing Party shall have the right to make any such filing as it reasonably determines necessary under applicable Laws.

6.5 Equitable Relief. Each Party acknowledges that its breach of this Article 6 would cause irreparable harm to the other Party, which cannot be reasonably or adequately compensated in damages in an action at law. By reasons thereof, each Party agrees that the other Party shall be entitled, in addition to any other remedies it may have under this Agreement or otherwise, to preliminary and permanent injunctive and other equitable relief to prevent or curtail any actual or threatened breach of the obligations relating to Confidential Information set forth in this Article 6 by such Party.

6.6 Technical Publications. During the Term, vTv may not publish any Information involving a Compound or a Licensed Product (other than Information contained in a Patent within the vTv Technology that is published pursuant to applicable patent laws), without the prior written approval of Reneo, which approval will not be unreasonably withheld, conditioned or delayed. Reneo may freely publish any Information related to a Compound or a Licensed Product *provided* that any such publication does not contain any Confidential Information of vTv, without the prior written consent of vTv.

6.7 Prior Confidentiality Agreement. As of the Effective Date, the terms of this Article 6 shall supersede the Confidential Disclosure Agreement by and between Reneo and vTv, dated as of February 28, 2017 (the "**Prior CDA**"). Any information disclosed by or on behalf of vTv or any of its Affiliates under, and subject to, the Prior CDA shall be deemed Confidential Information of vTv for purposes of this Agreement.

7. TERM AND TERMINATION

7.1 Term. This Agreement shall become effective on the Effective Date and, unless earlier terminated pursuant to this Article 7, shall remain in effect until the expiration of the last Royalty Term in the Territory (the "**Term**").

7.2 Termination for Material Breach. Each Party shall have the right to terminate this Agreement in its entirety immediately upon written notice to the other Party if the other Party materially breaches its obligations under this Agreement and, after receiving written notice identifying such material breach in reasonable detail, fails to cure such material breach within [***] days from the date of such notice (or within [***] business days from the date of such notice in the event such material breach is solely based on the breaching Party's failure to pay any amounts or issue any Shares due hereunder). Any right to terminate under this Section 7.2 shall be stayed and the cure period tolled in the event that, during any cure period, the alleged breaching Party shall have initiated dispute resolution in accordance with Article 10 with respect to the alleged breach, which stay and tolling shall last so long as the alleged breaching Party diligently and in good faith cooperates in the prompt resolution of such dispute resolution proceedings. Each Party shall be entitled to offset, against amounts payable to the other Party under this Agreement, any amounts of damages determined, in a final decision by an applicable court action or other legal proceeding, to be owed to such Party by the other Party based on the other Party's material breach of this Agreement.

7.3 Termination Upon Insolvency. Either Party may terminate this Agreement upon written notice to the other Party if, at any time, the other Party (a) files in any court or agency pursuant to any statute or regulation of any state, country or jurisdiction, a petition in bankruptcy or insolvency or for reorganization or for an arrangement or for the appointment of a receiver or trustee of such other Party or of its assets, (b) is served with an involuntary petition against it, filed in any insolvency proceeding that is not dismissed within [***] days after the filing thereof, or (c) makes an assignment of the assets associated with this Agreement for the benefit of its creditors.

7.4 Termination by Reneo. Reneo may terminate this Agreement in its entirety for any reason upon [***] days prior written notice to vTv.

7.5 Effect of Expiration of this Agreement. Upon expiration (but not earlier termination) of this Agreement, the licenses granted to Reneo hereunder shall survive on a royalty-free, fully-paid, irrevocable and perpetual basis.

7.6 Effect of Any Termination. In the event of any termination of this Agreement prior to its expiration, the licenses granted to Reneo in Section 2.1, and all sublicenses granted thereunder, shall terminate; *provided*, *however,* that:

(a) if, prior to any termination of this Agreement (prior to expiration hereof), the Royalty Term with respect to a Licensed Product in any country had expired, the license granted to Reneo in Section 2.1 with respect to such Licensed Product in such country shall survive such termination of this Agreement on a royalty-free, fully-paid, irrevocable and perpetual basis; and

(b) if this Agreement is terminated by vTv pursuant to Section 7.2 or 7.3, then:

(i) any sublicense granted by Reneo to any of its Affiliates pursuant to Section 2.2 shall immediately terminate;

(ii) any sublicense granted to any Sublicensee pursuant to Section 2.2 (including any further sublicenses granted by such Sublicensee) and any license granted by Reneo

to any Sublicensee under any product trademark assigned to vTv pursuant to Section 7.7(a)(ii)(3) shall survive termination of this Agreement [***], subject to (A) [***], and (B) [***]; *unless* (1) [***] or (2) [***]. In no event shall vTv be required to assume any obligations under any sublicense agreement that are greater in scope than vTv's obligations set forth in this Agreement; and

(iii) Section 7.7(b) shall not apply to any Sublicensee whose sublicense survives such termination in accordance with Section 7.6(b)(ii).

7.7 Effect of Termination. In the event of termination of this Agreement, and without prejudice to vTv's other rights and remedies, the following provisions (in addition to the provisions of Section 7.6, to the extent applicable), shall apply to the extent requested by vTv.

(a) [***].

(i) Termination Prior to [***]. If such termination becomes effective prior to [***], then:

(1) effective as of such termination, Reneo shall, and it hereby does, grant to vTv [***] license, [***] under Reneo Technology, solely to Develop, Manufacture, have Manufactured, seek Regulatory Approval for, use, sell, offer to sell, import and otherwise Commercialize Compounds and Licensed Products in the Field in the Territory; and

(2) Reneo shall promptly (A) [***] and (B) disclose to vTv, [***] all pre-clinical and clinical data, including pharmacology and biology data, in Reneo's or its applicable controlled Affiliates' Control with respect to any Compound(s) or Licensed Product(s).

(ii) Termination After [***]. If such termination becomes effective after [***], then:

(1) effective as of such termination, Reneo shall, and it hereby does, grant to vTv [***] license, [***] under Reneo Technology, solely to Develop, Manufacture, have Manufactured, seek Regulatory Approval for, use, sell, offer to sell, import and otherwise Commercialize Compounds and Licensed Products in the Field in the Territory;

(2) if, within [***] days after the effective date of termination, [***]:

(I) Reneo shall, and it hereby does, grant to vTv [***], under Reneo Technology, solely to Develop, Manufacture, have Manufactured, seek Regulatory Approval for, use, sell, offer to sell, import and otherwise Commercialize Compounds and Licensed Products in the Field in the Territory; and

(II) Reneo shall (a) [***] and (b) disclose to vTv [***] all pre-clinical and clinical data, including pharmacology and biology data, in Reneo's or its applicable controlled Affiliates' Control with respect to any Compound(s) or Licensed Product(s); and

(3) Subject to Section 7.6(b)(ii), Reneo shall assign to vTv all of Reneo's and its controlled (within the meaning of Section 1.1) Affiliates' right, title and interest in any product trademark used solely with and for any Licensed Product(s), along with all associated goodwill, but specifically excluding any corporate trademarks or trade names of Reneo or such controlled Affiliates or any goodwill associated therewith.

(iii) Third Party IP. Notwithstanding any other provision of this Section 7.7(a) to the contrary, to the extent the Reneo Technology includes any Reneo Patent or Reneo Know-How that is licensed to Reneo by a Third Party under an agreement obligating Reneo to make milestone or royalty payments to such Third Party with respect to Compounds or Licensed Products, then Reneo shall so notify vTv within [***] days after the effective date of termination, which notice shall include a true, complete and correct description of such milestone and royalty payment obligations, and the inclusion of such Reneo Patent or Reneo Know-How in the Reneo Technology licensed to vTv under Section 7.7(a)(i)(1), Section 7.7(a)(ii)(1) or Section 7.7(a)(ii)(2) shall be subject to vTv's agreeing in writing to pay, and promptly paying, all royalty and milestone payments that become due to such Third Party by reason of the Development and Commercialization of Compounds and Licensed Products by or on behalf of vTv or any of its Affiliates or (sub)licensees. For clarity, any such Third Party royalty obligations described in this Section 7.7(a)(iii) are [***].

(b) Ongoing Clinical Trials. Subject to Section 7.6(b)(ii), unless expressly prohibited by any Regulatory Authority or applicable Laws, at vTv's written request made within [***] days of the effective date of termination, Reneo shall, and shall cause its Affiliates and Sublicensees to, (i) wind down in accordance with Applicable Law any or all clinical studies involving Licensed Products being conducted by or on behalf of Reneo or its Affiliate or Sublicensee as of the effective date of termination, at Reneo's cost and expense, or (ii) (x) transfer control to vTv of any or all clinical studies involving Licensed Products being conducted by or on behalf of Reneo or any of its Affiliate or Sublicensees as of the effective date of termination and (y) continue to conduct such clinical studies involving Licensed Products being conducted by or on behalf of Reneo or any Affiliate or Sublicensee as of the effective date of termination for up to [***] months to enable such transfer to be completed without interruption of any such clinical study, in each case ((ii)(x) and (ii)(y)), at vTv's cost and expense.

(c) Remaining Inventories. Reneo or its Affiliates (but not Sublicensees), to the extent that such parties continue to have stocks of usable Licensed Products, may continue to fulfill orders received for Licensed Products until [***] months following the date of termination. For Licensed Products sold by Reneo or its Affiliates after the effective date of a termination, Reneo shall continue to pay royalties pursuant to Section 3.5 and sales milestone payments pursuant to Section 3.4. Prior to the end of such [***] month period, Reneo shall provide vTv with a written notice of an estimate of the quantity of Licensed Products (or components thereof) and shelf life anticipated to remain in the inventory of Reneo at the end of such [***] month period and vTv shall have the right to purchase any or all of the inventory of Licensed Products (or components thereof) held by Reneo as of the end of such [***] month period (that are not committed to be supplied to any Third Party or Sublicensee or subcontractor, in the ordinary course of business, as of the date of termination) at a price of [***] of Reneo's fully burdened cost of goods.

(d) Supply. Unless the Parties mutually agree in writing to [***], then at vTv's written request made within [***] days of the effective date of termination, Reneo shall supply to vTv the Compounds and Licensed Products [***]; *provided* that [***]. Reneo shall supply such Compounds and Licensed Products at a supply price [***]. Unless vTv no longer desires to obtain such Compounds and Licensed Products, Reneo shall Manufacture or have Manufactured, and supply, such Compounds and Licensed Products to vTv until [***].

(e) Manufacturing Matters.

(i) To the extent vTv so requests within [***] days after the effective date of termination, Reneo shall use commercially reasonable efforts to, and to cause any Affiliate it controls (within the meaning of Section 1.1) to, [***]; *provided* that [***]; *provided, further,* that, [***].

(ii) To the extent vTv so requests, for a period of up to [***] months following the effective date of termination, Reneo and any Affiliate it controls (within the meaning of Section 1.1) shall [***].

7.8 Confidential Information. Upon expiration or termination of this Agreement in its entirety, except to the extent that a Party retains a license from the other Party as provided in this Article 7, each Party shall cease using Confidential Information of the other Party and return or destroy, at the other Party's election, all copies of Confidential Information of the other Party in the possession or control of such Party; provided that such Party may keep one copy of such materials for archival purposes only subject to Article 6.

7.9 Damages; Relief. Termination of this Agreement shall not preclude either Party from claiming any other damages, compensation or relief that it may be entitled to as a result of the other Party's breach of this Agreement.

7.10 Survival. Termination or expiration of this Agreement shall not affect any rights or obligations of the Parties under this Agreement that have accrued prior to the date of termination or expiration. Notwithstanding anything to the contrary in this Agreement, the following provisions shall survive any expiration or termination of this Agreement: Articles 1, 10 and 11 and Sections 2.4, 3.5(b) (final sentence only), 3.9 (for the term stated therein), 5.1, 6.1 (for the term stated therein), 6.2, 6.3, 6.4, 6.5, 6.7, 7.5, 7.6, 7.7, 7.8, 7.9, 7.10, 7.11, 8.6, 9.1, 9.2 and 9.3 (for 6 years after the applicable expiration or termination).

7.11 Rights under Bankruptcy or Insolvency Laws. All rights and licenses granted under or pursuant to this Agreement by one Party to the other Party are, and will otherwise be deemed to be, for purposes of Section 365(n) of the U.S. Bankruptcy Code or comparable provision of applicable bankruptcy or insolvency laws, licenses of right to "intellectual property" as defined under Section 101 of the U.S. Bankruptcy Code or comparable provision of applicable bankruptcy or insolvency laws. The Parties agree that a Party that is a licensee of such rights under this Agreement will retain and may fully exercise all of its rights and elections under the provisions of applicable bankruptcy or insolvency laws. The Parties further agree that, in the event of the commencement of a bankruptcy proceeding by or against a Party to this Agreement under the provisions of applicable bankruptcy or insolvency laws, the other Party will be entitled to a

complete duplicate of (or complete access to, as appropriate) any such intellectual property and all embodiments of such intellectual property, and same, if not already in its possession, will be promptly delivered to it (a) upon any such commencement of a bankruptcy or insolvency proceeding upon its written request therefor, unless the bankrupt Party elects to continue to perform all of its obligations under this Agreement, or (b) if not delivered pursuant to clause (a) above, following the rejection of this Agreement by or on behalf of the bankrupt Party upon written request therefor by the other Party.

8. REPRESENTATIONS AND WARRANTIES AND COVENANTS

8.1 Mutual Representations and Warranties. Each Party hereby represents and warrants to the other Party as follows:

(a) Corporate Existence. As of the Effective Date, it is a company or corporation duly organized, validly existing, and in good standing under the Laws of the jurisdiction in which it is incorporated.

(b) Corporate Power, Authority and Binding Agreement. As of the Effective Date, (i) it has the corporate power and authority and the legal right to enter into this Agreement and perform its obligations hereunder; (ii) it has taken all necessary corporate action on its part required to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder; and (iii) this Agreement has been duly executed and delivered on behalf of such Party, and constitutes a legal, valid, and binding obligation of such Party that is enforceable against it in accordance with its terms.

(c) No Conflicts. The execution and delivery of this Agreement, and the performance by such Party of its obligations under this Agreement, including the grant of rights and licenses to the other Party pursuant to this Agreement, does not and will not: (i) conflict with, nor result in any violation of or default under, any instrument, judgment, order, writ, decree, contract or provision to which such Party is bound; (ii) give rise to the suspension, revocation, impairment, forfeiture or non-renewal of any material permit, license, authorization or approval that applies to such Party, its business or operations or any of its assets or properties; or (iii) conflict with any rights granted by such Party to any Third Party or breach any obligation that such Party has to any Third Party.

8.2 Representations and Warranties of Reneo. Reneo represents and warrants to vTv as of the Effective Date that:

(a) Capitalization.

(i) The authorized capital stock of Reneo, as of immediately prior to the Effective Date, consists of [***] shares of Common Stock, par value $0.001 per share, of which [***] shares are issued and outstanding as of immediately prior to the Effective Date.

(ii) All issued and outstanding shares of Reneo's Common Stock, (i) have been duly authorized and validly issued and are fully paid and nonassessable, and (ii) were issued in compliance with all applicable state and federal laws concerning the issuance of securities.

(iii) When issued in compliance with the provisions of this Agreement and Reneo's Certificate of Incorporation (the "**Charter**"), the Shares will be validly issued, fully paid and nonassessable, and will be free of any liens, restrictions or other encumbrances other than (i) liens and encumbrances created by or imposed upon vTv, (ii) any right of first refusal set forth in Reneo's Bylaws and (iii) restrictions set forth in this Agreement, the **[***]** Stock Purchase Agreement or the Charter; *provided*, *however*, that the Shares may be subject to restrictions on transfer under state or federal securities laws or as otherwise required by such laws at the time a transfer is proposed. The sale of the Shares to vTv is not subject to any preemptive rights or rights of first refusal that have not been properly waived or complied with.

(b) Offering Valid. Assuming the accuracy of the representations and warranties of vTv contained in Section 8.3, the offer, sale and issuance of the Shares will be exempt from the registration requirements of the Securities Act, and will have been registered or qualified (or are exempt from registration and qualification) under the registration, permit or qualification requirements of all applicable state securities laws. Neither Reneo nor any agent on its behalf has solicited or will solicit any offers to sell or has offered to sell or will offer to sell all or any part of the Shares to any person or persons so as to bring the sale of such Shares by Reneo within the registration provisions of the Securities Act or any state securities laws.

(c) [***].

8.3 vTv Representations and Warranties. vTv represents and warrants to Reneo as of the Effective Date that:

(a) Purchase Entirely for Own Account. The Shares to be acquired by vTv will be acquired for investment for vTv's own account, not as a nominee or agent, and not with a view to the resale or distribution of any part thereof, and vTv has no present intention of selling, granting any participation in, or otherwise distributing the same. vTv does not presently have any contract, undertaking, agreement or arrangement with any person to sell, transfer or grant participations to such person or to any third person, with respect to any of the Shares.

(b) Disclosure of Information. vTv has had an opportunity to discuss Reneo's business, management, financial affairs and the terms and conditions of the offering of the Shares with Reneo's management.

(c) Restricted Securities. vTv understands that the Shares have not been, and will not be, registered under the Securities Act, by reason of a specific exemption from the registration provisions of the Securities Act which depends upon, among other things, the bona fide nature of the investment intent and the accuracy of vTv's representations as expressed herein. vTv understands that the Shares are "restricted securities" under applicable U.S. federal and state securities laws and that, pursuant to these laws, vTv must hold such shares indefinitely unless they are registered with the SEC and qualified by state authorities, or an exemption from such registration and qualification requirements is available. vTv acknowledges that Reneo has no obligation to register or qualify the Shares for resale. vTv further acknowledges that if an exemption from registration or qualification is available, it may be conditioned on various requirements including, but not limited to, the time and manner of sale, the holding period for the

Shares, and on requirements relating to Reneo which are outside of vTv's control, and which Reneo is under no obligation and may not be able to satisfy.

(d) No Public Market. vTv understands that no public market now exists for the Shares, and that Reneo has made no assurances that a public market will ever exist for such Shares.

(e) Accredited Investor. vTv is an accredited investor as defined in Rule 501(a) of Regulation D promulgated under the Securities Act.

(f) Legends. vTv understands that the stock certificates for the Shares and any securities issued in respect of or exchange for such Shares, may bear one or all of the following or similar legends:

(1) "THE SHARES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO, OR IN CONNECTION WITH, THE SALE OR DISTRIBUTION THEREOF. NO SUCH TRANSFER MAY BE EFFECTED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL IN A FORM SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE SECURITIES ACT OF 1933".

(2) Any legend set forth in, or required by, the **[***]** Stock Purchase Agreement.

(3) Any legend required by the securities laws of any state to the extent such laws are applicable to such shares represented by the certificate so legended.

8.4 Additional Representations, Warranties and Covenants of vTv. vTv represents, warrants and covenants to Reneo that, as of the Effective Date:

(a) vTv is the sole and exclusive owner of the vTv Patents existing as of the Effective Date, free and clear of all liens, and vTv has the right to grant the licenses, sublicenses and other rights with respect to the vTv Technology that it purports to grant hereunder. Exhibit 1.50 is a true and complete list of all vTv Patents as of the Effective Date. To vTv's Knowledge as of the Effective Date, all official fees, maintenance fees and annuities for the vTv Patents have been paid through the Effective Date.

(b) To vTv's Knowledge as of the Effective Date, all issued vTv Patents as of the Effective Date are in full force and effect and subsisting, and inventorship of the invention(s) claimed by each vTv Patent existing as of the Effective Date is properly identified in such vTv Patent. No Third Party has asserted in writing to vTv as of the Effective Date that any issued vTv Patent is invalid or unenforceable. None of the vTv Patents is, as of the Effective Date, involved in any interference, reissue, reexamination, or opposition proceeding, and, to the Knowledge of vTv as of the Effective Date, no such proceeding is threatened. vTv has taken reasonable security measures consistent with industry standard practices, including measures against unauthorized disclosure, to protect the secrecy and confidentiality of trade secrets within the vTv Know-How.

vTv and its Affiliates have complied with all duties of candor required by applicable Governmental Authorities in the prosecution by vTv or any of its Affiliates of vTv Patents.

(c) To vTv's Knowledge as of the Effective Date, there are no activities by Third Parties that would constitute infringement of the vTv Patents or misappropriation of the vTv Know-How.

(d) Neither vTv nor any of its Affiliates has, as of the Effective Date, received any written notice from any person regarding, or has Knowledge as of the Effective Date of, any actual or threatened claim or assertion that the use or practice of the vTv Technology infringes or misappropriates the intellectual property rights of a Third Party.

(e) As of the Effective Date, there are no actual, pending, or alleged or, to vTv's Knowledge as of the Effective Date, threatened in writing, adverse actions, suits, claims, interferences or formal governmental investigations by or against vTv or its Affiliates in or before any court or Governmental Authority involving vTv Technology or any Compound or Licensed Product.

(f) vTv and its Affiliates and, to vTv's Knowledge as of the Effective Date, any subcontractor to which vTv or any of its Affiliates has subcontracted activities in connection with any Compound or Licensed Product have, prior to the Effective Date, complied in all material respects with all applicable Laws, including all good clinical practices, good laboratory practices and good manufacturing practices, permits, governmental licenses, registrations, approvals, authorizations, orders, injunctions and decrees, in the research, Development, Manufacture and use of any Compound and Licensed Product, and neither vTv nor any of its Affiliates nor, to vTv's Knowledge as of the Effective Date, any such subcontractor has, as of the Effective Date, received any written notice from any Governmental Authority claiming that any such activities as conducted by them are not in such compliance.

(g) All of vTv's and its Affiliates' employees, and, to vTv's Knowledge as of the Effective Date, all of vTv's and its Affiliates' subcontractors acting on its behalf, who, in each case, have performed research, Development, Manufacturing or regulatory activities with respect to any Compound or Licensed Product prior to the Effective Date have been obligated under a binding written agreement to comply with obligations of confidentiality and non-use with respect to vTv Technology no less restrictive than those set forth in Article 6.

(h) Neither vTv nor any of its Affiliates has granted any license or other right with respect to any vTv Technology or Compound or Licensed Product to any Third Party, including any member of the Sponsor Group. None of the vTv Technology existing as of the Effective Date is licensed to vTv by any Third Party, including any member of the Sponsor Group.

(i) As of the Effective Date, none of the vTv Technology constitutes Collateral (as defined in the Loan Agreement) under the Loan Agreement.

8.5 Covenants. Each Party covenants to the other Party as follows:

(a) No Debarment. Neither such Party nor any of its Affiliates is debarred or disqualified under the United States Federal Food, Drug and Cosmetic Act or comparable

applicable Laws in the Territory and, in the course of Development, Manufacturing or other activities relating to any Compound or Licensed Product, neither Party nor any of its Affiliates or subcontractors has used or shall use any employee, consultant or subcontractor who has been debarred or disqualified or, to such Party's or its Affiliates' Knowledge, is the subject of debarment or disqualification proceedings by any Regulatory Authority. Reneo shall notify vTv promptly upon becoming aware that any of its or its Affiliates' or Sublicensees' employees, consultants or subcontractors involved in any Development, Manufacturing or other activities relating to any Compound or Licensed Product has been debarred or disqualified or is the subject of debarment or disqualification proceedings by any Regulatory Authority. Reneo shall ensure that each sublicense agreement with each Sublicensee imposes on such Sublicensee an obligation substantially similar to that set forth in this Section 8.5(a).

(b) Compliance. Reneo and its Affiliates shall comply in all material respects with all applicable Laws in the Development, Manufacture and Commercialization of each Licensed Product, in each case including the statutes, regulations and written directives of the FDA, the EMA and any other Regulatory Authorities, the Federal Food, Drug & Cosmetic Act, as amended, the Prescription Drug Marketing Act, the Federal Health Care Programs Anti-Kickback Law, 42 U.S.C. 1320a-7b(b), the statutes, regulations and written directives of Medicare, Medicaid and all other health care programs, as defined in 42 U.S.C. § 1320a-7b(f), and the Foreign Corrupt Practices Act of 1977, each as may be amended from time to time.

(c) Encumbrances. vTv hereby covenants and agrees that it shall not grant, or permit to be imposed, any lien or encumbrance on the vTv Patents or vTv Know-How during the term of this Agreement, whether under the Loan Agreement or otherwise.

8.6 Disclaimer. EXCEPT AS EXPRESSLY STATED IN THIS AGREEMENT, NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, WHETHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR NON-MISAPPROPRIATION OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS, ARE MADE OR GIVEN BY OR ON BEHALF OF A PARTY, AND ALL REPRESENTATIONS AND WARRANTIES, WHETHER ARISING BY OPERATION OF LAW OR OTHERWISE, ARE HEREBY EXPRESSLY EXCLUDED.

9. INDEMNIFICATION AND LIMITATION OF LIABILITY

9.1 Indemnification.

(a) Indemnification by Reneo. Reneo shall defend, indemnify, and hold vTv and its Affiliates and their respective officers, directors, employees, and agents (the "**vTv Indemnitees**") harmless from and against any and all damages or other amounts payable to any Third Party claimant by, as well as any reasonable attorneys' fees and costs of litigation incurred by, such vTv Indemnitees, all to the extent resulting from claims, suits, proceedings, or causes of action brought by any Third Party ("**Claims**") against such vTv Indemnitees that arise from or are based on: (i) the Development, Manufacture or Commercialization of any Compound or Licensed Product by or on behalf of Reneo or its Affiliates or Sublicensees (excluding in all cases vTv or its Affiliates); (ii) the breach of any of Reneo's obligations under this Agreement, including any

of Reneo's representations, warranties or covenants set forth herein; or (iii) the willful misconduct or negligent acts of Reneo or any of its Affiliates or Sublicensees or any of its or their respective officers, directors, employees or agents. The foregoing indemnity obligation shall not apply to the extent that any of the Claims arises from, is based on, or results from any activity described in Section 9.1(b)(i), (ii) or (iii) for which vTv is obligated to indemnify the Reneo Indemnitees under Section 9.1(b).

(b) Indemnification by vTv. vTv shall defend, indemnify, and hold Reneo and its Affiliates and their respective officers, directors, employees, and agents (the "**Reneo Indemnitees**") harmless from and against any and all damages or other amounts payable to any Third Party claimant, as well as any reasonable attorneys' fees and costs of litigation incurred by such Reneo Indemnitees, all to the extent resulting from Claims against such Reneo Indemnitees that arise from or are based on: (i) the Development, Manufacture or Commercialization of any Compound or Licensed Product by or on behalf of vTv or its Affiliates, licensees or sublicensees (other than Reneo and its Affiliates and Sublicensees); (ii) the breach of any of vTv's obligations under this Agreement, including any of vTv's representations, warranties or covenants set forth herein; or (iii) the willful misconduct or negligent acts of vTv or any of its Affiliates or any of its or their respective officers, directors, employees or agents. The foregoing indemnity obligation shall not apply to the extent that any of the Claims arises from, is based on, or results from any activity set forth in Section 9.1(a)(i), (ii) or (iii) for which Reneo is obligated to indemnify the vTv Indemnitees under Section 9.1(a).

(c) Indemnification Procedures. The Party seeking indemnification hereunder (individually, the **"Indemnified Party"**), shall promptly notify the other Party (the **"Indemnifying Party"**) in writing of the applicable Claim(s). Such claim for indemnity shall indicate the nature of the Claim(s) and the basis therefor. The Indemnified Party shall promptly permit the Indemnifying Party, at its option and expense, to assume the complete defense of such Claim(s), *provided* that (i) the Indemnified Party will have the right to participate in the defense of any such Claim at its own cost and expense, (ii) the Indemnifying Party will conduct the defense of any such Claim with due regard for the business interests and potential related liabilities of the Indemnified Party, and (iii) the Indemnifying Party will not agree to any settlement that would admit liability on the part of the Indemnified Party or involve relief other than payment of money, without the approval of the Indemnified Party, not to be unreasonably withheld, conditioned or delayed; and *provided*, *further*, that if it is reasonably likely that the Parties may have conflicting interests or if it is otherwise not advisable under applicable legal and ethical requirements for the Indemnifying Party's defense counsel to represent both Parties, separate independent counsel shall be retained for each Party at its own expense. The Indemnifying Party will not, in defense of any such Claim, except with the consent of the Indemnified Party, consent to the entry of any judgment or enter into any settlement which does not include, as an unconditional term thereof, the giving by the claimant or plaintiff to the Indemnified Party of a release from all liability in respect thereof. After notice to the Indemnified Party of the Indemnifying Party's election to assume the defense of such Claim, the Indemnifying Party shall be liable to the Indemnified Party for such legal or other expenses subsequently incurred by the Indemnified Party in connection with the defense thereof at the request of the Indemnifying Party. As to those Claims with respect to which the Indemnifying Party does not elect to assume control of the defense, the Indemnified Party will afford the Indemnifying Party an opportunity to participate in such defense at the Indemnifying

Party's own cost and expense, and will not settle or otherwise dispose of any of the same without the consent of the Indemnifying Party.

9.2 Limitation of Liability. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, OR INDIRECT DAMAGES ARISING FROM OR RELATING TO ANY BREACH OF THIS AGREEMENT, REGARDLESS OF ANY NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. NOTWITHSTANDING THE FOREGOING, NOTHING IN THIS SECTION 9.2 IS INTENDED TO OR SHALL LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF ANY PARTY UNDER SECTION 9.1 OR DAMAGES AVAILABLE FOR A PARTY'S BREACH OF CONFIDENTIALITY OBLIGATIONS IN ARTICLE 6.

9.3 Insurance. Reneo shall procure and maintain insurance, including product liability insurance, with respect to its activities hereunder and which is consistent with normal business practices of prudent companies similarly situated (but in no event less than [***] per occurrence or claim, and [***] in the aggregate) at all times during which any Licensed Product is being clinically tested in human subjects or commercially distributed or sold. Reneo shall provide vTv with evidence of such insurance upon request and shall provide vTv with written notice at least thirty (30) days prior to the cancellation, non-renewal or material changes in such insurance. It is understood that such insurance shall not be construed to create a limit of Reneo's liability with respect to its indemnification obligations under this Article 9. As of the Effective Date, there are no outstanding insurance claims against vTv's insurance policies related to any clinical trial of any Compound or Licensed Product conducted by or on behalf of vTv or any of its Affiliates.

10. DISPUTE RESOLUTION

10.1 Disputes. The Parties recognize that disputes as to certain matters arising under or relating to this Agreement or either Party's rights or obligations hereunder may from time to time arise. It is the objective of the Parties to establish procedures to facilitate the resolution of disputes arising under this Agreement in an expedient manner by mutual cooperation and without resort to litigation. To accomplish this objective, the Parties agree to follow the procedures set forth in this Article 10 to resolve any controversy or claim arising out of, relating to or in connection with any provision of this Agreement, if and when a dispute arises under this Agreement.

10.2 Internal Resolution. With respect to all disputes arising between the Parties under this Agreement, including any alleged breach under this Agreement or any issue relating to the interpretation or application of this Agreement, if the Parties are unable to resolve such dispute within [***] days after such dispute is first notified by either Party in writing to the other, the Parties shall refer such dispute to the Executive Officers (or their designees) for attempted resolution by good faith negotiations within [***] days after such notice is received, including at least [***] in person meeting of the Executive Officers within [***] days after such notice referring the dispute to the Executive Officers is received.

10.3 Binding Arbitration. If the Executive Officers of the Parties are not able to resolve such disputed matter within [***] days and either Party wishes to pursue the matter, each such dispute, controversy or claim, subject to Section 10.4, shall be finally resolved by binding arbitration administered by the International Chamber of Commerce ("**ICC**") pursuant to its

Dispute Resolution Rules then in effect, and judgment on the arbitration award may be entered in any court having jurisdiction thereof. The Parties agree that:

(a) The arbitration shall be conducted by a panel of three (3) persons experienced in the pharmaceutical business. Within [***] days after initiation of arbitration, each Party shall select one (1) person to act as arbitrator and the two (2) Party-selected arbitrators shall select a third arbitrator within [***] days of their appointment. If the arbitrators selected by the Parties are unable or fail to agree upon the third arbitrator, the third arbitrator shall be appointed by the ICC. The place of arbitration shall be New York, New York, and all proceedings and communications shall be in English.

(b) Either Party may apply to the arbitrators for interim injunctive relief until the arbitration award is rendered or the controversy is otherwise resolved. Either Party also may, without waiving any remedy under this Agreement, seek from any court having jurisdiction any injunctive or provisional relief necessary to protect the rights or property of that Party pending the arbitration award. Except as set forth in Section 9.2, the arbitrators shall have no authority to award punitive or any other type of damages not measured by a Party's compensatory damage. Each Party shall bear its own costs and expenses and attorneys' fees and an equal share of the arbitrators' fees and any administrative fees of arbitration, unless the arbitrators determine that a Party has incurred unreasonable expense due to vexatious or bad faith position taken by the other Party, in which event, the arbitrators may make an award of all or any portion of such expenses so incurred.

(c) Reasons for the arbitrators' decisions should be complete and explicit, including reasonable determinations of law and fact. The written reasons should also include the basis for any damages awarded and a statement of how the damages were calculated. Such a written decision shall be rendered by the arbitrators following a full comprehensive hearing, no later than six (6) months following the selection of the arbitrators under Section 10.3(a).

(d) Except to the extent necessary to confirm an award or as may be required by applicable Laws, neither Party nor any arbitrator may disclose the existence, content, or results of an arbitration without the prior written consent of both Parties. In no event shall an arbitration be initiated after the date when commencement of a legal or equitable proceeding based on the dispute, controversy or claim would be barred by the applicable statute of limitations.

10.4 Excluded Disputes. Notwithstanding Section 10.3, any dispute, controversy or claim relating to (a) the scope, validity, enforceability or infringement of any Patent, trademark or copyright or (b) any antitrust, anti-monopoly or competition law or regulation, whether or not statutory shall be submitted to a court of competent jurisdiction.

11. MISCELLANEOUS

11.1 Entire Agreement; Amendments. This Agreement, including the Exhibits hereto, together with the **[***]** Stock Purchase Agreement between the Parties, sets forth the complete, final and exclusive agreement and all the covenants, promises, agreements, warranties, representations, conditions and understandings between the Parties hereto with respect to the subject matter hereof, and supersedes all prior agreements and understandings between the Parties

with respect to the subject matter hereof, including the Prior CDA. There are no covenants, promises, agreements, warranties, representations, conditions or understandings, either oral or written, between the Parties other than as are set forth in this Agreement. No subsequent alteration, amendment, change or addition to this Agreement shall be binding upon the Parties unless reduced to writing and signed by an authorized officer of each Party.

11.2 Force Majeure. Each Party shall be excused from the performance of its obligations under this Agreement to the extent that such performance is prevented by force majeure (as defined below) and the nonperforming Party promptly provides notice of the prevention to the other Party. Such excuse shall be continued so long as the condition constituting force majeure continues and the nonperforming Party takes reasonable efforts to remove the condition. For purposes of this Agreement, "**force majeure**" shall include conditions beyond the control of the Parties, including an act of God, war, civil commotion, terrorism, labor strike or lock-out, epidemic, failure or default of public utilities or common carriers, destruction of production facilities or materials by fire, earthquake, storm or like catastrophe. Notwithstanding the foregoing, the payment of amounts due and owing hereunder shall in no event be delayed by the payor because of a force majeure affecting the payor.

11.3 Notices. Any notices given under this Agreement shall be in writing, addressed to the Parties at the following addresses (or any other address provided pursuant to this Section 11.3), and delivered by person, by facsimile (with receipt confirmation), or by FedEx or other reputable courier service. Any such notice shall be deemed to have been given: (a) as of the day of personal delivery; (b) one (1) day after the date sent by facsimile service; or (c) on the day of successful delivery to the other Party confirmed by the courier service. Unless otherwise specified in writing, the mailing addresses of the Parties shall be as described below.

If to Reneo:

Reneo Pharmaceuticals, Inc.
12730 High Bluff Drive
Suite 160
San Diego, CA 92130
Attention: Mike Grey

With copies (which shall not constitute notice) to:

Cooley LLP
4401 Eastgate Mall
San Diego, CA 92121-1909
Attention: L. Kay Chandler
FAX: +1 858 550 6420

If to vTv:

vTv Therapeutics LLC
4170 Mendenhall Oaks Pkwy
High Point, NC 27265
Attention: Law Department

With a copy (which shall not constitute notice) to:

WilmerHale
60 State Street
Boston, MA 02109
Attention: Steven D. Barrett
FAX: +1 617 526 5000

11.4 Assignment. Neither Party may assign or transfer this Agreement or any rights or obligations hereunder without the prior written consent of the other, except that a Party may assign this Agreement and its rights and obligations hereunder without the other Party's consent:

(a) to an Affiliate, including in connection with any re-domiciling of such Party or its Affiliates, *provided* that the assigning Party shall remain liable and responsible to the non-assigning Party hereto for the performance and observance of all such duties and obligations by such Affiliate; or

(b) in connection with the transfer or sale of all or substantially all of the business of such Party to which this Agreement relates to a Third Party ("**Third Party Acquirer**"), whether by merger, sale of stock, sale of assets or otherwise (each, a "**Sale Transaction**"). In the event of a Sale Transaction (whether this Agreement is actually assigned or is assumed by the Third Party Acquirer or the surviving corporation resulting from such Sale Transaction by operation of law (*e.g.*, in the context of a reverse triangular merger)), intellectual property rights of the Third Party Acquirer, or of any of such Third Party Acquirer's Affiliates ("**Pre-Existing Affiliates**") that were not Affiliates of such Party immediately prior to the consummation of such Sale Transaction, shall not be included in the technology licensed hereunder or otherwise subject to this Agreement; *provided* that: (i) such Third Party Acquirer shall establish reasonable internal safeguards designed to prevent any vTv Technology, Reneo Technology or any Confidential Information of the Party not involved in the Sale Transaction from being used in furtherance of the development or commercialization of, or otherwise for the benefit of, any [***]; and (ii) if the Party or Third Party Acquirer involved in the Sale Transaction uses any intellectual property of such Third Party Acquirer or any of its Pre-Existing Affiliates in the conduct of any activities under this Agreement, then any such intellectual property that is so used shall be included in the technology licensed hereunder and otherwise subject to this Agreement.

The rights and obligations of the Parties under this Agreement shall be binding upon and inure to the benefit of the respective successors and permitted assigns of the Parties, and the name of a Party appearing herein will be deemed to include the name of such Party's successors and permitted assigns to the extent necessary to carry out the intent of this section. Any assignment or

attempted assignment by either Party in violation of the terms of this Section 11.4 shall be null, void and of no legal effect.

11.5 Performance by Affiliates. Each Party may discharge any obligations and exercise any right hereunder through any of its Affiliates. Each Party hereby guarantees the performance by its Affiliates of such Party's obligations under this Agreement, and shall cause its Affiliates to comply with the provisions of this Agreement in connection with such performance. Any breach by a Party's Affiliate of any of such Party's obligations under this Agreement shall be deemed a breach by such Party, and the other Party may proceed directly against such Party without any obligation to first proceed against such Party's Affiliate.

11.6 Further Actions. Each Party agrees to execute, acknowledge and deliver such further instruments, and to do all such other acts, as may be necessary or appropriate in order to carry out the purposes and intent of this Agreement.

11.7 Severability. If any of the provisions of this Agreement are held to be invalid or unenforceable by any court of competent jurisdiction from which no appeal can be or is taken, the provision shall be considered severed from this Agreement and shall not serve to invalidate any remaining provisions hereof. The Parties shall make a good faith effort to replace any invalid or unenforceable provision with a valid and enforceable one such that the objectives contemplated by the Parties when entering this Agreement may be realized.

11.8 No Waiver. Any delay in enforcing a Party's rights under this Agreement or any waiver as to a particular default or other matter shall not constitute a waiver of such Party's rights to the future enforcement of its rights under this Agreement, excepting only as to an express written and signed waiver as to a particular matter for a particular period of time.

11.9 Independent Contractors. Each Party shall act solely as an independent contractor, and nothing in this Agreement shall be construed to give either Party the power or authority to act for, bind, or commit the other Party in any way. Nothing herein shall be construed to create the relationship of partners, principal and agent, or joint-venture partners between the Parties.

11.10 Governing Law. Resolution of all disputes, controversies or claims arising out of, relating to or in connection with this Agreement or the performance, enforcement, breach or termination of this Agreement and any remedies relating thereto, shall be governed by and construed under the substantive laws of the State of Delaware, U.S., without regard to conflicts of law rules.

11.11 Construction of this Agreement. When used in this Agreement, "**including**" means "**including without limitation**". The word "**or**" means "**and/or**" unless the context dictates otherwise because the subject of the conjunction are mutually exclusive. The words "**herein**," "**hereof**" and "**hereunder**" and other words of similar import refer to this Agreement as a whole and not to any particular Section or other subdivision. A capitalized term not defined herein but reflecting a different part of speech from that of a capitalized term which is defined herein shall be interpreted in a correlative manner. All references to days in this Agreement mean calendar days, unless otherwise specified. References to either Party include the successors and

permitted assigns of that Party. All references in this Agreement to the singular shall include the plural where applicable. The headings of this Agreement are for convenience of reference only and in no way define, describe, extend or limit the scope or intent of this Agreement or the intent of any provision contained in this Agreement. Unless otherwise specified, references in this Agreement to any Article shall include all Sections, subsections and paragraphs in such Article, references to any Section shall include all subsections and paragraphs in such Section, and references in this Agreement to any subsection shall include all paragraphs in such subsection. The Parties have each consulted counsel of their choice regarding this Agreement and have jointly prepared this Agreement, and, accordingly, no provisions of this Agreement shall be construed against either Party on the basis that the Party drafted this Agreement or any provision thereof. If the terms of this Agreement conflict with the terms of any Exhibit, then the terms of this Agreement shall govern. This Agreement has been prepared in the English language and English shall control its interpretation.

11.12 Counterparts. This Agreement may be executed in two (2) or more counterparts, each of which shall be an original and all of which shall constitute together the same document. Counterparts may be signed and delivered by facsimile, or electronically in PDF format, each of which shall be binding when sent.

[Signature page follows.]

In Witness Whereof, the Parties have executed this Agreement in duplicate originals by their proper officers as of the Effective Date.

Reneo Pharmaceuticals, Inc.	**vTv Therapeutics LLC**
By: /s/ Niall O'Donnell	By: /s/ Rudy Howard
Name: Niall O'Donnell, Ph.D.	Name: Rudy Howard
Title: President and Chief Executive Officer	Title: Executive Vice President and Chief Financial Officer

Exhibit 1.49
vTv Know-How

[***]

Exhibit 1.50
vTv Patents

Docket No.	Country	Application No.	Filing Date	Patent No.	Issue Date	Status
[***]	[***]	[***]	[***]	[***]	[***]	[***]

Exhibit 3.2(a)
[***]

RENEO PHARMACEUTICALS, INC.
COMMON STOCK ISSUANCE AGREEMENT

THIS COMMON STOCK ISSUANCE AGREEMENT (the "***Agreement***") is effective as of December 21, 2017, by and between **RENEO PHARMACEUTICALS, INC.**, a Delaware corporation (the "***Company***"), and **VTV THERAPEUTICS LLC**, a limited liability company organized under the laws of Delaware ("***Purchaser***").

WHEREAS, the Company desires to issue, and Purchaser desires to acquire, shares of Common Stock of the Company (the "***Common Stock***") as herein described, on the terms and conditions hereinafter set forth.

NOW, THEREFORE, IT IS AGREED between the parties as follows:

1. ISSUANCE OF COMMON STOCK. The Company hereby agrees to issue to Purchaser an aggregate of [***] shares of Common Stock (the "***Stock***") in partial consideration of the rights granted to the Company pursuant to that certain License Agreement, dated as of December 21, 2017, by and between the Company and Purchaser (the "***License Agreement***"), as set forth in Section 3.2 of the License Agreement. The closing hereunder, including delivery of the Stock, shall occur at the offices of the Company immediately following the execution of this Agreement, or at such other time and place as the parties may mutually agree.

2. LIMITATIONS ON TRANSFER. Purchaser shall not assign, hypothecate, donate, encumber or otherwise dispose of any interest in the Stock except in compliance with the provisions herein and applicable securities laws. Furthermore, the Stock shall be subject to any right of first refusal in favor of the Company or its assignees, and any other transfer restrictions, that may be contained in the Company's Bylaws. Purchaser hereby further acknowledges that Purchaser may be required to hold the Stock purchased hereunder indefinitely. During the period of time during which Purchaser holds the Stock, the value of the Stock may increase or decrease, and any risk associated with such Stock and such fluctuation in value shall be borne by Purchaser.

3. RESTRICTIVE LEGENDS. All certificates representing the Stock shall have endorsed thereon legends in substantially the following forms (in addition to any other legend which may be required by other agreements between the parties hereto):

(a) "THE SHARES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED. THEY MAY NOT BE SOLD, OFFERED FOR SALE, PLEDGED OR HYPOTHECATED IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT AS TO THE SECURITIES UNDER SAID ACT OR AN OPINION OF COUNSEL SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED."

(b) "THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO A RIGHT OF FIRST REFUSAL OPTION IN FAVOR OF THE COMPANY AND/OR ITS ASSIGNEE(S) AS PROVIDED IN THE BYLAWS OF THE COMPANY."

(c) "THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO A TRANSFER RESTRICTION, AS PROVIDED IN THE BYLAWS OF THE COMPANY."

(d) Any legend required by appropriate blue sky officials.

4. COMPANY REPRESENTATIONS. In connection with the issuance of the Stock, Company represents to the Purchaser the following:

(a) Organization and Standing. The Company is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware and has full corporate power and authority to conduct its business as presently conducted and as proposed to be conducted by it and to enter into and perform this Agreement and to carry out the transactions contemplated by this Agreement. The Company is duly qualified to do business as a foreign corporation and is in good standing in each jurisdiction in which the nature of its activities require such qualification, except where the failure to be so duly qualified and in good standing would not have a material adverse effect on the Company's financial condition, results of operations, assets, liabilities or business.

(b) Issuance of Stock. The issuance, sale and delivery of the Stock in accordance with this Agreement and the performance by the Company of its obligations under this Agreement have been duly authorized by all necessary corporate action on the part of the Company, and this Agreement constitutes the legally valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, subject as to enforcement of remedies to applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting generally the enforcement of creditors' rights and subject to a court's discretionary authority with respect to the granting of a decree ordering specific performance or other equitable remedies.

(c) Capitalization. Immediately prior to the issuance of the Stock, the authorized capital stock of the Company consists of [***] shares of Common Stock, of which [***] shares are issued and outstanding. The Company does not have any shares of preferred stock authorized or outstanding. The Stock represents [***]% of the Company's Fully Diluted Shares (as defined in the License Agreement) as of the date hereof. All of the outstanding shares of capital stock of the Company have been duly authorized and are validly issued, fully paid and nonassessable.

(d) Validity of Stock. The Stock, when issued, sold and delivered in compliance with the terms and for the consideration expressed in this Agreement, will be duly authorized, validly issued (including without limitation, issued in compliance with applicable federal and state securities laws), fully paid and nonassessable.

(e) No Conflict with Other Instruments. The execution, delivery, and performance of this Agreement, the issuance of the Stock, and the consummation of the transactions contemplated hereby will not result in any violation of, be in conflict with, or constitute a default under, with or

without the passage of time or the giving of notice: (i) any provision of the Company's Certificate of Incorporation or bylaws; (ii) any provision of any judgment, decree, or order to which the Company is a party or by which it is bound; (iii) any material contract, obligation or commitment to which the Company is a party or by which it is bound; or (iv) to the Company's knowledge, any statute, rule, or governmental regulation applicable to the Company.

(f) Governmental and Third Party Consents. Subject to the accuracy of the Purchaser's representations in Section 5 of this Agreement, no consent, approval, order, or authorization of, or registration, qualification, designation, declaration or filing with, any federal, state, local, or provincial governmental authority on the part of the Company is required in connection with the consummation of the transactions contemplated by this Agreement, except for filings pursuant to Regulation D under the Securities Act and applicable state securities laws, all of which have been made or will be made in a timely manner. Subject to the accuracy of the Purchaser's representations in Section 5 of this Agreement, the issuance of the Stock as contemplated by this Agreement is exempt from the registration requirements of the Securities Act of 1933, as amended (the "***Act***"), and will not result in a violation of the qualification or registration requirements of any applicable state securities laws.

(g) Rights of Registration and Stockholder Rights. The Company is not under any obligation to register under the Act any of its currently outstanding securities or any securities issuable upon exercise or conversion of its currently outstanding securities. With the exception of the holders of outstanding convertible promissory notes issued by the Company, the Company has not granted anyone other than the Purchaser the right to purchase or acquire securities of the Company.

5. INVESTMENT REPRESENTATIONS. In connection with the acquisition of the Stock, Purchaser represents to the Company the following:

(a) Purchaser is aware of the Company's business affairs and financial condition and has acquired sufficient information about the Company to reach an informed and knowledgeable decision to acquire the Stock. Purchaser is acquiring the Stock for investment for Purchaser's own account only and not with a view to, or for resale in connection with, any "distribution" thereof within the meaning of the Act.

(b) Purchaser understands that the Stock has not been registered under the Act by reason of a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of Purchaser's investment intent as expressed herein.

(c) Purchaser is capable of evaluating the merits and risks of its investment in the Company and has the capacity to protect Purchaser's own interests. Purchaser further acknowledges and understands that the Stock must be held indefinitely unless the Stock is subsequently registered under the Act or an exemption from such registration is available. Purchaser further acknowledges and understands that the Company is under no obligation to register the Stock and has no present intention of registering the Stock or any shares of its Common Stock. Purchaser also understands that there is no assurance that any exemption from registration under the Act will be available and that, even if available, such exemption may not allow Purchaser to transfer all or any portion of the Stock under the circumstances, in the amounts or at the times

Purchaser might propose. Purchaser understands that the certificate evidencing the Stock will be imprinted with a legend that prohibits the transfer of the Stock unless the Stock is registered or such registration is not required in the opinion of counsel for the Company.

(d) Purchaser is familiar with the provisions of Rule 144 under the Act, as in effect from time to time, which, in substance, permits limited public resale of "restricted securities" acquired, directly or indirectly, from the issuer thereof (or from an affiliate of such issuer), in a non-public offering subject to the satisfaction of certain conditions. The Stock may be resold by Purchaser in certain limited circumstances subject to the provisions of Rule 144, which requires, among other things: (i) the availability of certain public information about the Company and (ii) the resale occurring following the required holding period under Rule 144 after the Purchaser has purchased, and made full payment of (within the meaning of Rule 144), the securities to be sold.

(e) Purchaser further understands that at the time Purchaser wishes to sell the Stock there may be no public market upon which to make such a sale, and that, even if such a public market then exists, the Company may not be satisfying the current public information requirements of Rule 144, and that, in such event, Purchaser may be precluded from selling the Stock under Rule 144 even if the minimum holding period requirement had been satisfied.

(f) Purchaser represents that Purchaser is an "accredited investor" as that term is defined in Rule 501 of Regulation D promulgated by the Securities and Exchange Commission under the Act.

(g) Purchaser further warrants and represents that Purchaser has either (i) a preexisting business relationship with the Company or any of its officers, directors or controlling persons, or (ii) the capacity to protect its own interests in connection with the acquisition of the Stock by virtue of its business or financial expertise or that of professional advisors to Purchaser who are unaffiliated with and who are not compensated by the Company or any of its affiliates, directly or indirectly.

6. MARKET STAND-OFF AGREEMENT. If so requested by the Company and the underwriters in connection with the initial public offering of the Company's securities registered under the Act, Purchaser shall not sell, dispose of, transfer, make any short sale of, grant any option for the purchase of, or enter into any hedging or similar transaction with the same economic effect as a sale with respect to, any Common Stock or other securities of the Company held by Purchaser, including the Stock (the "***Restricted Securities***"), during the 180-day period following the effective date of such registration statement (or such longer period, not to exceed 34 days after the expiration of the 180-day period, as the underwriters or the Company shall request in order to facilitate compliance with FINRA Rule 2711 or NYSE Member Rule 472 or any successor or similar rule or regulation). The foregoing provisions of this Section 6 shall apply only to the Company's initial public offering, shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, and shall be applicable to the Purchaser only if all officers and directors are subject to the same restrictions and the Company uses commercially reasonable efforts to obtain a similar agreement from all stockholders individually owning more than one percent (1%) of the Company's outstanding Common Stock (after giving effect to conversion into Common Stock of all outstanding shares of the Company's preferred stock). Purchaser agrees to execute and deliver such other agreements as may be reasonably requested by the Company and/or the

managing underwriters which are consistent with the foregoing or which are necessary to give further effect thereto. In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to Purchaser's Restricted Securities until the end of such period. The underwriters for the Company's initial public offering are intended third-party beneficiaries of this Section 6 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto.

7. Refusal to Transfer. The Company shall not be required to (a) transfer on its books any shares of stock of the Company which have been transferred in violation of any of the provisions set forth in this Agreement or (b) treat as owner of such shares or to accord the right to vote as such owner or to pay dividends to any transferee to whom such shares have been so transferred.

8. Satisfaction Under License Agreement. Purchaser and the Company hereby acknowledge and agree that the transactions contemplated by this Agreement satisfy in full the Company's obligations under Section 3.2(a) of the License Agreement as of the date hereof.

9. Miscellaneous.

(a) Notices. All notices required or permitted hereunder shall be in writing and shall be deemed effectively given: (a) upon personal delivery to the party to be notified, (b) when sent by confirmed electronic mail, telex or facsimile if sent during normal business hours of the recipient, if not, then on the next business day, (c) five days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt. All communications shall be sent to the Company at the address as set forth in Section 11.3 of the License Agreement and to Purchaser at the address as set forth in Section 11.3 of the License Agreement or at such other address or electronic mail address as the Company or Purchaser may designate by 10 days advance written notice to the other party hereto.

(b) Successors and Assigns. This Agreement shall inure to the benefit of the successors and assigns of the parties hereto, subject to the restrictions on transfer herein set forth.

(c) Governing Law; Venue. This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware. The parties agree that any action brought by either party under or in relation to this Agreement, including without limitation to interpret or enforce any provision of this Agreement shall be brought in, and each party agrees to, and does hereby, submit to the jurisdiction and venue of, the appropriate state or federal court located in the State of Delaware.

(d) Entire Agreement; Amendment. This Agreement and Section 3.2 of the License Agreement constitute the entire agreement between the parties with respect to the subject matter hereof and thereof and supersede and merge all prior agreements or understandings, whether written or oral. This Agreement may not be amended, modified or revoked, in whole or in part, except by an agreement in writing signed by each party hereto.

(e) Severability. If one or more provisions of this Agreement are held to be unenforceable under applicable law, the parties agree to renegotiate such provision in good faith.

In the event that the parties cannot reach a mutually agreeable and enforceable replacement for such provision, then (i) such provision shall be excluded from this Agreement, (ii) the balance of this Agreement shall be interpreted as if such provision were so excluded and (iii) the balance of this Agreement shall be enforceable in accordance with its terms.

(f) Counterparts; Facsimile. This Agreement may be executed in any number of counterparts, each of which shall be an original, but all of which together shall constitute one instrument. This Agreement may be executed and delivered electronically or by facsimile and upon such delivery such electronic or facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

COMPANY:

RENEO PHARMACEUTICALS, INC.

By:

Name: Niall O'Donnell

Title: President and Chief Executive Officer

In Witness Whereof, the parties hereto have executed this Agreement as of the day and year first above written.

PURCHASER:

vTv Therapeutics LLC

By:

Name: Rudy Howard

Title: Executive Vice President and Chief Financial Officer

Exhibit 4.4
Development Plan

REN-001(HPP593) Preliminary Development Plan

[***]

Exhibit 21.1

vTv Therapeutics Inc.
Corporate Subsidiaries as of February 27, 2018

Subsidiary	Jurisdiction of Incorporation
vTv Therapeutics LLC	Delaware

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statement (Form S-8 No. 333-206335) pertaining to the vTv Therapeutics Inc. 2015 Omnibus Equity Incentive Plan of our report dated February 27, 2018, with respect to the consolidated financial statements of vTv Therapeutics Inc. included in this Annual Report (Form 10-K) for the year ended December 31, 2017.

/s/ Ernst & Young LLP

Raleigh, North Carolina
February 27, 2018

EXHIBIT 31.1

SECTION 302 CERTIFICATION

I, Stephen L. Holcombe, certify that:

1. I have reviewed this annual report on Form 10-K of vTv Therapeutics Inc. (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Securities Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 27, 2018

By: /s/ Stephen L. Holcombe
Stephen L. Holcombe
President and Chief Executive Officer

EXHIBIT 31.2

SECTION 302 CERTIFICATION

I, Rudy C. Howard, certify that:

1. I have reviewed this annual report on Form 10-K of vTv Therapeutics Inc. (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Securities Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 27, 2018

By: /s/ Rudy C. Howard
Rudy C. Howard
Chief Financial Officer

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of vTv Therapeutics Inc. (the "Company") on Form 10-K for the period ended December 31, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Stephen L. Holcombe, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, in my capacity as an officer of the Company that, to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 27, 2018

By: /s/ Stephen L. Holcombe
Stephen L. Holcombe
President and Chief Executive Officer

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of vTv Therapeutics Inc. (the "Company") on Form 10-K for the period ended December 31, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Rudy C. Howard, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, in my capacity as an officer of the Company that, to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 27, 2018

By: /s/ Rudy C. Howard
Rudy C. Howard
Chief Financial Officer