Enanta Pharmaceuticals

Great Chemistry Cures

Annual Report **2021**

Since our formation, all of us at Enanta have been focused on the pursuit of an important mission: to leverage our expertise in virology and liver disease to discover, develop and deliver groundbreaking medicines. 2021 saw significant progress toward that goal. I would like to thank our employees for their continued dedication to Enanta, as our achievements in 2021 are a testament to their collaborative efforts.

Our wholly-owned pipeline is built on years of drug discovery experience and knowledge. With this expertise, we are building an industry-leading respiratory virus treatment portfolio. Our most advanced program in development is for respiratory syncytial virus (RSV), a virus for which there is no therapeutic option. Our lead RSV program includes our N-protein inhibitor, EDP-938, currently in multiple Phase 2 studies, and our latest clinical candidate, EDP-323, a compound targeting the RSV L-protein. EDP-938, the only N-protein inhibitor in advanced clinical development, is being evaluated in three Phase 2 trials: RSVP, a Phase 2b study in adults with community-acquired RSV infection; RSVPEDs, a Phase 2 study in pediatric RSV patients; and RSVTx, a Phase 2b study in adult hematopoietic cell transplant recipients with RSV.

Due to the COVID-19 pandemic and continued social distancing measures, RSV, like influenza, was significantly suppressed during much of 2020 and 2021. Toward the end of 2021, there was evidence of increased RSV activity in various regions of the world, including parts of the United States and Europe, which allowed us to complete enrollment in the RSVP study. We expect to announce topline data from RSVP in the second quarter of 2022. For RSVPEDs and RSVTx, which were initiated during the pandemic, enrollment is expected to continue into 2023.

Additionally in 2021, we selected EDP-323, an RSV L-inhibitor candidate, for clinical development. L-inhibitors are another drug class that block viral replication and could potentially be used alone or in combination with other agents, such as EDP-938, to broaden the treatment window or the addressable patient population. Developing both EDP-323 and EDP-938 will give us a clear leadership position to treat this endemic virus that can be deadly for too many. With the selection of EDP-323, we achieved our goal of nominating two respiratory development program candidates in 2021. We continue to pursue a third respiratory discovery program in human metapneumovirus (hMPV), and are nearing completion of lead optimization of potent nanomolar hMPV inhibitors and hope to select another clinical candidate in the coming year.

Our core expertise in respiratory virology enabled us to advance our COVID-19 discovery program and nominate our first clinical candidate, EDP-235, a direct-acting antiviral protease inhibitor specifically designed for the treatment of SARS-CoV-2. In October, we presented preclinical data demonstrating that EDP-235 selectively blocked replication of SARS-CoV-2 in multiple cellular models with nanomolar potency. Good distribution to lung cells was observed with optimized pharmacokinetic properties supporting once-daily, oral dosing without ritonavir boosting. Further, antiviral activity was maintained against multiple SARS-CoV-2 variants, as well as several other coronaviruses, making EDP-235 potentially a pan-coronavirus treatment. Since EDP-235 has been specifically designed to target conserved regions in the active site of an enzyme essential for replication of SARS-CoV-2 and other coronaviruses, we do not expect mutations in the spike protein to significantly affect the activity of EDP-235. We are committed to bringing this important therapy to patients globally and plan to advance EDP-235 into the clinic in early 2022.

With our hepatitis B virus (HBV) program, our vision is to develop a combination regimen to deliver a functional cure for chronic HBV patients. We are making progress toward that vision with EDP-514, our novel HBV core inhibitor that has Fast Track Designation from the U.S. Food and Drug Administration. In 2021, EDP-514 was

evaluated in two Phase 1 studies in different chronic HBV patient populations: those who have a high viral load, referred to as viremic patients, and those who are on treatment with a nucleoside reverse transcriptase inhibitor, also known as NUC-suppressed patients. In November, we announced positive clinical data from both trials showing that the 200 mg, 400 mg and 800 mg doses were safe and well-tolerated through 28 days of treatment and displayed pharmacokinetics supportive of once-daily dosing. Additionally, in both patient populations, across all evaluated doses, EDP-514 displayed robust antiviral activity in the range of the best data for core inhibitors published to date. In line with our priority of patient safety, in late 2021 we made the decision to discontinue the development of EDP-721, our oral HBV RNA destabilizer, based on safety observations in the single ascending dose part of a Phase 1 study in healthy volunteers. As a result, we are considering alternative mechanisms to combine with EDP-514 and remain committed to developing a functional cure for chronic HBV patients. We believe that a core inhibitor such as EDP-514 will be an important component of a successful combination regimen.

2021 was also a time for making important decisions for our business and realigning resources. For our non-alcoholic steatohepatitis (NASH) program, we announced the decision to discontinue internal development of our FXR agonists EDP-305 and EDP-297 to prioritize combination approaches for the disease through an out-licensing strategy. With multiple mechanisms in development for NASH today, we believe that a combination approach with FXR agonists will ultimately provide the optimal treatment regimen for patients and allows us to focus our resources on our other programs.

Fiscally, Enanta remains in a strong position with $352 million in cash and marketable securities at September 30, 2021. In our 2021 fiscal year, we earned approximately $97 million in royalty revenue from AbbVie's sales of MAVYRET®/MAVIRET® (glecaprevir/pibrentasvir), which remains a leading treatment for hepatitis C virus (HCV). While our royalty revenue continued to be impacted by reduced numbers of chronic HCV patients being treated compared to pre-COVID levels, we remain encouraged about the long-term success of MAVYRET/MAVIRET. The treatment has been remarkably impactful for patients, curing hundreds of thousands of people with HCV, and we expect it will continue to play a critical role in the treatment of the millions still infected with the virus.

As we look ahead to all that we plan to accomplish in 2022, we are thrilled to be in the position we are in, with multiple milestones expected over the next year. None of this would be possible without the support of our shareholders, to whom we owe our sincere gratitude. We have the opportunity to grow the value of our business by developing important therapies for patients in need and look forward to doing so.

Sincerely,

Jay R. Luly, Ph.D.
President and Chief Executive Officer

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-K

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

For the fiscal year ended September 30, 2021

OR

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

Commission File Number 001-35839

ENANTA PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

DELAWARE	2834	04-3205099
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

500 Arsenal Street
Watertown, Massachusetts 02472
(617) 607-0800
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.01 per share	ENTA	NASDAQ

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 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 (or for such shorter period that the registrant was required to file such reports), 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 every Interactive Data File required to be submitted 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 such files): Yes ☒ No ☐

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

Large accelerated filer ☒ Accelerated filer ☐

Non-accelerated filer ☐ 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 whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark whether 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 of the registrant as of the last business day of the registrant's most recently completed second fiscal quarter, March 31, 2021, based on the last reported sale price of the registrant's common stock of $49.32 per share was $864,668,968. The number of shares of the registrant's Common Stock, $0.01 par value, outstanding as of November 1, 2021 was 20,324,795 shares.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Definitive Proxy Statement for its 2022 Annual Meeting of Stockholders scheduled to be held on March 3, 2022, which Definitive Proxy will be filed with the Securities and Exchange Commission not later than 120 days after the registrant's fiscal year end of September 30, 2021 are incorporated by reference into Part III of this Form 10-K.

As used in this Form 10-K, "Enanta," "the Company," "we," "our," and "us" refer to Enanta Pharmaceuticals, Inc., and "MAVYRET/MAVIRET" refers to AbbVie's HCV regimen consisting of tablets of glecaprevir/pibrentasvir, except where the context otherwise requires or as otherwise indicated. MAVYRET®, MAVIRET®, VIEKIRA PAK™, VIEKIRAX™, and, EXVIERA™ are trademarks of AbbVie, Inc.

NOTE REGARDING FORWARD LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements concerning our business, operations and financial performance and condition, as well as our plans, objectives and expectations for our business operations and financial performance and condition. Any statements contained herein that are not statements of historical facts may be deemed to be forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "aim," "anticipate," "assume," "believe," "contemplate," "continue," "could," "due," "estimate," "expect," "goal," "intend," "may," "objective," "plan," "predict," "potential," "positioned," "seek," "should," "target," "will," "would," and other similar expressions that are predictions of or indicate future events and future trends, or the negative of these terms or other comparable terminology. These forward-looking statements include, but are not limited to, statements about overall trends, royalty revenue trends, research and clinical development plans, liquidity and capital needs and other statements of expectations, beliefs, future plans and strategies, anticipated events or trends and similar expressions. These forward-looking statements are based on our management's current expectations, estimates, forecasts and projections about our business and the industry in which we operate and our management's beliefs and assumptions. These forward-looking statements are not guarantees of future performance or development and involve known and unknown risks, uncertainties and other factors that are in some cases beyond our control. As a result, any or all of our forward-looking statements in this Annual Report on Form 10-K may turn out to be inaccurate. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under "Risk Factors" and discussed elsewhere in this Annual Report on Form 10-K. These forward-looking statements speak only as of the date of this Annual Report on Form 10-K. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future. You should, however, review the factors and risks we describe in the reports we will file from time to time with the SEC after the date of this Annual Report on Form 10-K.

ENANTA PHARMACEUTICALS, INC.

ANNUAL REPORT ON FORM 10-K

For the year ended September 30, 2021

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SUMMARY OF PRINCIPAL RISK FACTORS

This summary briefly states the principal risks and uncertainties facing our business that could affect our common stock, which are only a select portion of those risks. A more complete statement of those risks and uncertainties is set forth in the Section 1A "Risk Factors" of this report. This summary is qualified in its entirety by that more complete statement. You should carefully read the entire statement and "Risk Factors" when considering the risks and uncertainties as part of your evaluation of an investment in our common stock.

- **Our financial prospects for the next several years are substantially dependent upon AbbVie's success selling MAVYRET/MAVIRET, which includes our protease inhibitor, glecaprevir, for the treatment of HCV**.
  - AbbVie may continue to experience lower sales volume in future quarters due to a reduction in diagnoses and treatment rates of HCV if doctor visits and other routine healthcare activities remain at below normal levels as a result of the COVID-19 pandemic.
  - AbbVie's MAVYRET/MAVIRET regimen will have to continue to compete successfully against other products and therapies for HCV, including competition for exclusive arrangements with third-party payors and governmental entities as well as price competition, both in the U.S. and in other markets worldwide.
- **There are many companies developing potential therapies for RSV, HBV, SARS-CoV-2 and hMPV, which may result in others discovering, developing or commercializing products before we do or doing so more successfully than we do.**
  - In all of the disease areas currently the subject of our research and development efforts, there are other companies with product candidates that are more advanced than ours.
  - If we are not "first to market" with one of our product candidates in one or more of our targeted disease indications, our competitive position could be compromised because it may be more difficult for us to obtain marketing approval for that product candidate and/or market acceptance of that product candidate as a follow-on competitor.
- **The COVID-19 pandemic has had an impact on our business operations and our business could continue to be materially affected, directly or indirectly, by the ongoing COVID-19 pandemic.**
  - The extent and severity of the continuing impact of the pandemic on our business and clinical trials will be determined largely by the extent of delays in the conduct and recruitment of current and future clinical trials, reductions in the number of patients accessing AbbVie's MAVYRET/MAVIRET HCV regimen, and disruptions in the supply chains for our research and clinical trial materials.
- **Continued changes in royalty revenue earned under our AbbVie agreement or in the level of expenses associated with our clinical development programs, or both, will cause our results of operations to fluctuate from period to period. Any continuation of the recent trend of reducing royalty revenue, combined with increasing research and development expenses in support of our advancing programs, will result in continuing operating losses in the coming year and in future periods unless we develop other sources of revenue.**
  - Many of the preclinical and clinical development activities required for our product candidates must be contracted out to contract research organizations, or CROs, at significant expense. We expect these expenses to increase substantially in the coming years as we advance compounds and conduct more clinical studies, which will likely result in continuing operating losses.
- **Clinical drug development for viral infections and liver diseases involves a lengthy and expensive process with uncertain timelines and uncertain outcomes. The clinical endpoints for regulatory approval of product candidates in several of these diseases are also evolving. If clinical trials of any of our proprietary product candidates are prolonged or delayed, we may be unable to commercialize our product candidates on a timely basis.**
  - None of our product candidates in our clinical development pipeline has yet to advance beyond completion of Phase 2 clinical trials.
  - Some of our clinical trials may be delayed due to the continuing impact of COVID-19 on the ability of trial sites to conduct their operations and recruit trial subjects, as well as its potential impact on the future incidence of RSV during the pandemic.

- Changes in regulatory requirements, policies and guidelines, including guidelines specifically addressing requirements for the development of treatments for RSV, HBV or SARS-CoV-2, could also delay the time required to reach approval of one or more of our product candidates.

- **The results of clinical trials are inherently uncertain. The results of preclinical studies and early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials, if any, including sufficient efficacy and an acceptable safety and tolerability profile**.
  - Several companies in the disease areas we are seeking to address have suffered significant setbacks in advanced clinical trials due to adverse safety profiles or lack of efficacy, notwithstanding promising results in earlier studies.
  - Clinical trials involving our product candidates may be suspended or terminated at any time for a number of safety-related reasons. For example, administering any product candidate to humans may produce undesirable side effects not identified in preclinical studies.
  - We may choose to test any of our clinical candidates preclinically and/or clinically in combination with other compounds with different mechanisms of action, and any adverse results from such testing may have adverse consequences for the further development potential of not only the combination but also the clinical candidate itself as a monotherapy or in combination with other mechanisms of action.
- **We may delay or terminate the development of a product candidate at any time if we believe the perceived market or commercial opportunity does not justify further investment.**
- **We could be unsuccessful in obtaining or maintaining adequate patent protection for one or more of our product candidates.**
  - We are competing to develop intellectual property in areas of small-molecule drug development that are highly competitive.
  - We cannot be certain that patents will be issued or granted with respect to our patent applications that are currently pending, or that issued or granted patents will not later be found to be invalid and/or unenforceable, be interpreted in a manner that does not adequately protect our products, or otherwise provide us with any competitive advantage.
- **We rely on third parties to manufacture our clinical drug supplies, monitor, support, conduct and/or oversee clinical trials of our product candidates that we develop independently.**

PART I

ITEM 1. BUSINESS

BUSINESS

Overview

We are a biotechnology company that uses our robust, chemistry-driven approach and drug discovery capabilities to become a leader in the discovery and development of small molecule drugs for the treatment of viral infections and liver diseases. We discovered glecaprevir, the second of two protease inhibitors discovered and developed through our collaboration with AbbVie for the treatment of chronic hepatitis C virus, or HCV. Glecaprevir is co-formulated as part of AbbVie's leading brand of direct-acting antiviral, or DAA, combination treatment for HCV, which is marketed under the tradenames MAVYRET® (U.S.) and MAVIRET® (ex-U.S.) (glecaprevir/pibrentasvir). Our royalties from our AbbVie collaboration provide us funding to support our wholly-owned research and development programs, which are primarily focused on the following disease targets:

- Respiratory syncytial virus, or RSV, the most common cause of bronchiolitis and pneumonia in young children and a significant cause of respiratory illness in older adults, with estimates suggesting that on average each year RSV leads to 3 million hospitalizations globally in children under 5 years old and 177,000 hospitalizations in the U.S. in adults over the age of 65;
- Hepatitis B virus, or HBV, the most prevalent chronic hepatitis, which is estimated by the World Health Organization to affect close to 300 million individuals worldwide;
- SARS-CoV-2, the virus that causes COVID-19; and
- Human metapneumovirus, or hMPV, a virus that causes respiratory infection with symptoms similar to RSV

We had $352.4 million in cash and marketable securities at September 30, 2021. In fiscal 2021, we earned $97.1 million in product royalties on AbbVie's net sales of its HCV regimens. We expect cash flows from our continuing HCV royalties and our existing financial resources will allow us to continue to fund our wholly-owned research and development programs for at least the next two years.

Our Wholly-Owned Programs

Our primary wholly-owned research and development programs are in virology, namely RSV, HBV, SARS-CoV-2 and hMPV:

- RSV: We have a clinical stage program for RSV, for which the lead asset is EDP-938.

  We discovered EDP-938, a potent N-protein inhibitor of activity of both major subgroups of RSV, referred to as RSV-A and RSV-B, and have been investigating it as our first clinical candidate for RSV. To our knowledge, EDP-938 is the only N-protein inhibitor in clinical development. EDP-938 has been investigated in a Phase 2a challenge study and is currently in three ongoing Phase 2 studies, each in a different patient population.

  - *Challenge Study:* Results from our Phase 2a human challenge study of EDP-938 in healthy adults infected with a specific strain of RSV demonstrated that EDP-938 achieved highly statistically significant reductions (p=<0.001) in RSV viral load (by both qRT-PCR and plaque assays), total symptom scores and mucus weights compared to placebo. In addition, the study showed that the lowest levels, or mean C-trough levels, of drug achieved in study subjects were 20-40x higher than the amount of EDP-938 that has been shown in previously reported *in vitro* studies to reduce 90% of the viral RNA in RSV-infected human cells.

- *RSVP:* Our ongoing study with the most advanced enrollment is the RSVP study in adult outpatients with community-acquired RSV infection. This Phase 2b study is designed to help us better understand the feasibility of this direct-acting antiviral therapy by enrolling subjects, within 48 hours of symptom onset, who will then receive EDP-938 or placebo for five days. The mitigation steps to manage the COVID-19 pandemic since March 2020 have suppressed the incidence of RSV and other respiratory illnesses globally (other than COVID-19). We have continued our preparedness efforts to ensure we are ready when RSV re-emerges, including establishing trial sites in North America, Europe, the Asia-Pacific and the Southern Hemisphere, and there have been reports of increased RSV incidence globally, including the United States and Europe. Given that the recent re-emergence of RSV is not following any normal seasonal pattern, as well as the impact of renewed social distancing interventions where the Delta variant has increased the incidence of COVID-19, it is uncertain how significant or sustained the new incidence of RSV will be moving forward. Nonetheless, we expect that enrollment in the RSVP study will be complete during the Northern Hemisphere winter season if there is no further significant increase in social distancing interventions. Assuming this enrollment occurs, we would expect data in the first half of 2022.
- *RSVPEDs:* We have initiated a Phase 2 RSV study called RSVPEDs in pediatric patients. In this dose-ranging, randomized, double-blind, placebo-controlled study, we plan to enroll 90 infants and children aged 28 days to 36 months with RSV-associated respiratory tract infection, including both hospitalized and non-hospitalized patients who will be dosed in 4 age cohorts and will receive EDP-938 or placebo for 5 days. The study will be conducted in 2 parts. Part 1 will evaluate multiple ascending doses in each age cohort, with a primary endpoint of safety, tolerability, and pharmacokinetics. Part 2 will evaluate the selected dose from Part 1 across the 4 age cohorts, with a primary endpoint of antiviral activity.
- *RSVTx:* We have also initiated a Phase 2b study called RSVTx in adult hematopoietic cell transplant recipients with acute RSV infection and symptoms of upper respiratory tract infection. We plan to enroll approximately 200 adult subjects 18 to 75 years of age, within 72 hours of symptom onset, who will receive EDP-938 or placebo for 21 days. The primary endpoint is the incidence of lower respiratory tract complications within 28 days of enrollment, while secondary endpoints include change from baseline in RSV RNA viral load, safety and pharmacokinetics.
- *L-Inhibitor:* Our RSV L-protein inhibitor discovery effort is centered around potent nanomolar leads active against both RSV-A and RSV-B, for potential use alone or in combination with agents targeting other RSV mechanisms, such as our lead RSV asset, EDP-938. We are on track to select a lead RSV l-inhibitor candidate by the end of the calendar year.

- HBV: Our lead clinical candidate for the treatment of chronic infection with hepatitis B virus, or HBV, is EDP-514, a core inhibitor that displays potent anti-HBV activity *in vitro* at multiple points in the HBV lifecycle. Our goal is to develop a combination therapy approach, including existing approved treatments such as a nucleoside reverse transcriptase inhibitor (NUC), with EDP-514 and one or more other mechanisms, which could lead to a functional cure for patients with chronic HBV infection.
  - *EDP-514 - Phase 1a/b*- Our initial study of EDP-514 was a randomized, double-blind, placebo-controlled Phase 1a/1b study designed in two parts. Part 1 of the study in healthy subjects demonstrated that EDP-514 is well-tolerated with a favorable safety profile and has a pharmacokinetic profile supportive of once-daily dosing. In Part 2, we studied EDP-514 in chronic HBV patients already being treated with a marketed NUC, which we refer to as NUC-suppressed patients. Data showed that the 200mg, 400mg and 800mg doses were safe and well tolerated, with pharmacokinetics (PK) supportive of once daily dosing, and antiviral activity demonstrating reductions in circulating HBV RNA levels as expected for this class in a short treatment duration study.
  - *EDP-514 - Phase 1b study in Viremic HBV patients* - In addition, we conducted a second Phase 1b study, to evaluate EDP-514 in chronic HBV patients with high viral load not currently on treatment, which we refer to as viremic patients. Results demonstrated that EDP-514 was safe and well-tolerated through 28 days of treatment, displayed pharmacokinetics supportive of once-daily dosing, with trough concentrations up to 20-fold the protein adjusted $EC_{50,}$ the latter of which is a common measure of a compound's potency *in vitro*. Mean HBV DNA reductions of 2.9, 3.3, and 3.5 logs at 28 days were observed in the 200 mg, 400 mg, and 800 mg cohorts, respectively, compared to 0.2 log in placebo. Mean HBV RNA reduction of the three viremic treatment cohorts was at least 2 logs compared to a 0.02 log reduction in the placebo group.
- COVID-19: Since we announced our newest discovery program – developing a direct-acting antiviral for the treatment of COVID-19 – we have been leveraging our expertise in protease inhibitors to discover new compounds specifically designed to target the SARS-CoV-2 virus and potentially other coronaviruses. We have completed IND-enabling studies on our lead oral protease inhibitor, EDP-235, which we plan to begin testing in a first-in-human study in early calendar 2022.

- *EDP-235* - In a biochemical assay, EDP-235 inhibited the SARS-CoV-2 3CL protease with an IC_{50} of 5.8 nM. Importantly, this activity was retained against the 3CL protease from a range of SARS-CoV-2 variants, including the 3CL protease in the Delta variant. EDP-235 potently blocked SARS-CoV-2 replication in multiple cellular models, including primary human airway epithelial cells, where an EC_{90} of 33 nM was observed. Additionally, EDP-235 was shown to have potent antiviral activity across other human coronaviruses. EDP-235 had good permeability in human Caco-2 cells with a low plasma clearance in human liver microsomes. Consistent with this *in vitro* data, EDP-235 had robust plasma exposure with an oral bioavailability of 95% in rats. Moreover, EDP-235 had favorable *in vivo* penetration into multiple target tissues, including lung. Based on allometric scaling, EDP-235 is projected to have a long half-life of 16 hours with a projected efficacious human dose of 100 to 500 mg once-daily.

- hMPV: Since announcing our new drug discovery effort for hMPV in January 2020, we have been optimizing nanomolar inhibitor leads against this virus and are working toward selecting our first clinical candidate for this indication.

We have utilized our internal chemistry and drug discovery capabilities to generate all of our development-stage programs. We continue to invest substantial resources in research programs to discover back-up compounds as well as new compounds targeting different mechanisms of action, both in our disease areas of focus as well as potentially in other disease areas.

Our Out-Licensed Products

- HCV: Two protease inhibitors developed through our Collaborative Development and License Agreement with AbbVie have been clinically tested, manufactured, and commercialized by AbbVie as part of its combination regimens for HCV. We have earned all $330.0 million milestone payments under the agreement related to clinical development and commercialization regulatory approvals of these regimens in major markets.
  - Glecaprevir is the protease inhibitor we discovered that was developed by AbbVie in a fixed-dose combination with its NS5A inhibitor, pibrentasvir, for the treatment of HCV. This patented combination, currently marketed under the brand names MAVYRET® (U.S.) and MAVIRET® (ex-U.S.), is referred to in this report as MAVYRET/MAVIRET. This regimen is a once-daily, all-oral, fixed-dose, ribavirin-free treatment for HCV genotypes 1-6, or GT1-6, which is referred to as being pan-genotypic. In the U.S., EU and Japan it is approved as an 8-week treatment for patients with and without compensated cirrhosis and new to treatment. Today, these patients are estimated to represent the majority of HCV patients in over 50 countries where MAVYRET/MAVIRET is sold by AbbVie and where MAVYRET/MAVIRET remains the only 8-week pan-genotypic HCV treatment.
  - Since August 2017, substantially all of our royalty revenue has been derived from AbbVie's net sales of MAVYRET/MAVIRET. Our ongoing royalty revenues from this regimen consist of annually tiered, double-digit, per-product royalties on 50% of the calendar year net sales of the 2-DAA glecaprevir/pibrentasvir combination in MAVYRET/MAVIRET. These royalties are calculated separately from the royalties on AbbVie's paritaprevir-containing regimens, AbbVie's initial HCV treatment now replaced by MAVYRET/MAVIRET in most markets worldwide. The annual royalty tiers for each of these royalty-bearing products return to the lowest tier for sales on and after each January 1.
- NASH: We currently have two clinically-developed FXR agonists for NASH, EDP-305 and EDP-297, which we are seeking to out-license. These compounds selectively bind to and activate the Farnesoid X receptor, or FXR. Based on an internal interim analysis of a subset of patients in a Phase 2 study of EDP-305 at 12 weeks of treatment, as well as results from the Phase 1 clinical study of EDP-297, we made a business decision in 2021 to prioritize combination approaches

through an out-licensing strategy for further development of either or both of these FXR agonists and not to continue further development of them internally.

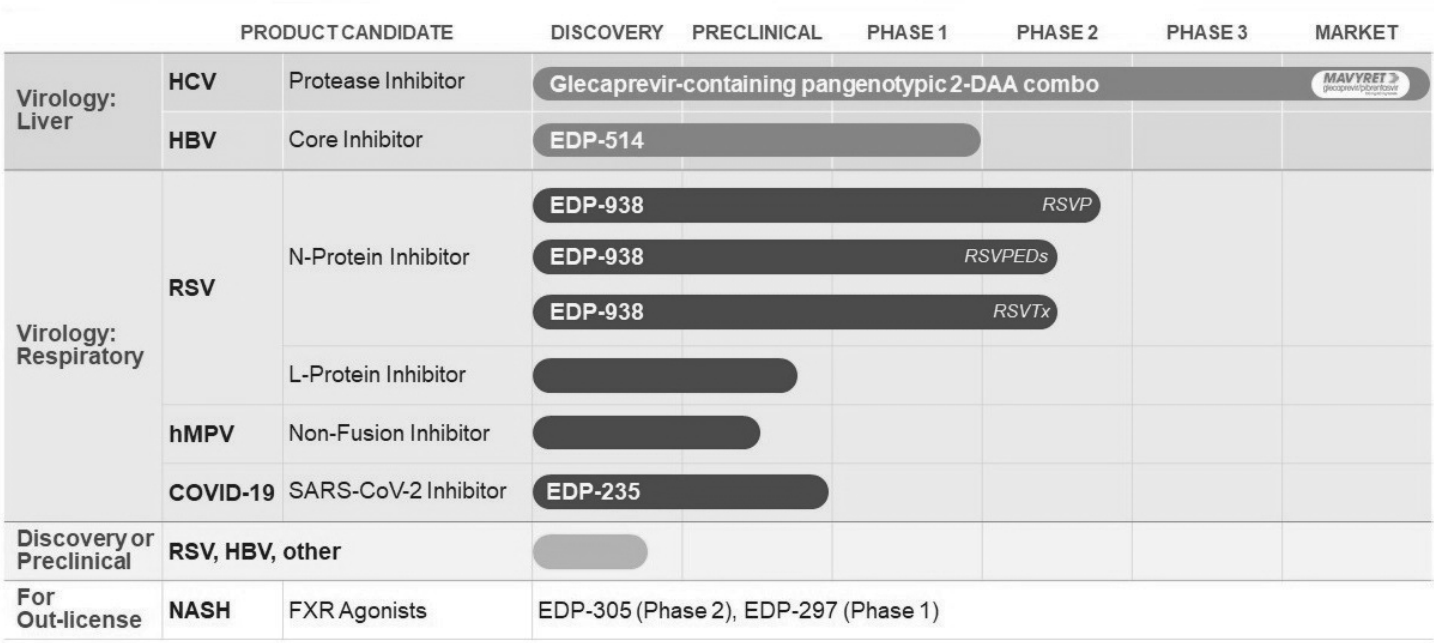
Our Strategy

Our primary objective is to become a leader in the discovery and development of treatments for viral infections in order to provide new therapies for patients with unmet medical needs. Our principal focus is on antiviral targets for viruses such as RSV, HBV, SARS-CoV-2 and hMPV, which in most cases are therapeutic areas that have attracted research and development efforts of many competitors. Our strategy includes the following key elements:

- *Advance clinical development of novel virology product candidates for RSV, HBV and SARS-CoV-2.* We have ongoing clinical studies of three compounds discovered in our research programs in the disease areas of RSV and HBV and intend to initiate clinical development of our SARS-CoV-2 compound early in calendar 2022. We believe each of these diseases represents a substantial medical need for an effective, or more effective, treatment.
- *Invest in research and development of compounds in new disease areas or add to our clinical candidates in RSV, HBV, and SARS-CoV-2*. We are continuing to invest significant resources in our research programs in our efforts to identify and advance additional novel compounds that have the potential to address significant unmet medical needs in our primary disease areas, as well as others. We may also explore clinically other diseases where our assets could play a role. In addition, we may seek to augment our product candidate pipeline through the acquisition or in-licensing of external assets and/or technologies in one or more of our disease areas of focus.
- *Collaborate or out-license, where and when appropriate, with pharmaceutical partners to create combination therapies and accelerate the development and commercialization of our proprietary compounds*. We are prepared to join forces, where and when appropriate, with collaborators with compounds targeting other mechanisms of action in diseases such as HBV, where there is the potential for better treatments with combination therapies. Our decisions regarding our proprietary programs will be based on the results of our early phase clinical studies and the potential for combinations with one or more drugs targeting other mechanisms of action in these diseases. For example, we have announced that we are seeking to out-license our FXR agonist assets to effect possible combination therapy for NASH by the out-license partner.
- *Continue to use our existing resources and future cash flow from our AbbVie collaboration to fund our research and development activities*. We expect our existing financial resources and future royalty payments from our AbbVie collaboration will provide us resources to fund our research and development programs for at least the next two years. These resources will allow us to continue to advance compounds in clinical development as well as to progress the most promising candidates at least through proof-of-concept trials and for further development as a monotherapy or in combinations with other therapeutic agents when we believe such combinations will provide the most promising opportunities.

Our Research and Development Pipeline

The following table summarizes our product development pipeline in our virology and liver disease programs:



*Fixed-dose combination contains glecaprevir and AbbVie's NS5A inhibitor, pibrentasvir. Marketed by AbbVie as MAVYRET® (U.S.) and MAVIRET® (ex-U.S.).

Our RSV Program

Background and Overview of RSV

Respiratory syncytial virus, or RSV, is a virus that infects the lungs and is the most common cause of bronchiolitis and pneumonia in young children and a significant cause of respiratory illness in older adults. Almost all children are infected at least once before they are 2 years old, and about a half are infected twice, resulting in over 2 million outpatient visits in young children. Hospitalization rates due to RSV are approximately 16 times higher than for influenza among children aged less than 1 year. On average each year in the U.S., RSV leads to 58,000 hospitalizations in children under 5 years old and 177,000 in adults older than 65 years old. RSV is estimated to cause 100–500 deaths annually in children under 5 years old and 14,000 deaths in adults over 65 years old in the U.S. There are currently no safe and effective therapies for RSV infection.

Scientific Background

RSV is a single-stranded, negative-sense RNA virus. The RSV genome consists of ten genes that encode for 11 proteins, namely NS1, NS2, N, P, M, SH, G, F, M2-1, M2-2, and L. The F and G proteins are the predominant target proteins for RSV vaccines. Similarly, small molecule therapeutics have focused primarily on the F (or fusion) protein, while some efforts have targeted the N and L proteins. There are two major subgroups of RSV, designated RSV-A and RSV-B, each of which contains numerous genotypes. Both groups are viewed as capable of causing RSV infections that can result in hospitalization.

Several companies are seeking to develop antiviral treatments for RSV infection in adult and pediatric patients. Ark Biosciences, Johnson & Johnson and ReViral each have compounds in clinical development. A prophylactic, monoclonal-antibody-based treatment from MedImmune, which is commercialized by AbbVie outside the U.S., is approved for infants considered at high risk for RSV infection; however, studies have found that most young children with RSV infection were previously healthy, and thus would not normally be prescribed prophylactic treatment. AstraZeneca/Sanofi and Merck are developing long-acting versions of the monoclonal antibody for prophylaxis use in infants. In addition, a number of companies have RSV vaccines in development, primarily directed at prevention of RSV infection, and some companies are also evaluating vaccines in a therapeutic mode for treatment of established RSV infection.

EDP-938 and Our Approach to the Treatment of RSV

While a number of companies are developing potential approaches geared towards the F protein (or fusion protein, responsible for mediating viral entry of RSV into host cells), we are focused on other mechanisms, such as the N-protein pathway, that targets the

replication process of RSV. It is possible that N-protein inhibitors may also be effective treatments at later stages of infection. To our knowledge, we are currently the only company with an N inhibitor in clinical development.

Through our internal chemistry efforts, we identified our lead clinical candidate, EDP-938. During preclinical studies, EDP-938 demonstrated a greater than 4-log reduction in viral load in an animal model challenged with RSV. Further, EDP-938 maintained antiviral potency across all clinical isolates tested *in vitro*, as well as virus that was resistant to fusion inhibitors. The compound inhibited RSV at a post-entry replication step and maintained its activity *in vitro* when given 24 hours post infection. In addition, combination studies of EDP-938 with other types of RSV inhibitors, such as fusion inhibitors, showed synergistic antiviral effects.

We reported the results of a Phase 2a challenge study of EDP-938 in June 2019. This study was a randomized, double-blind, placebo-controlled, human challenge study of 115 healthy adult subjects that were randomized into 1 of 2 dosing arms or a placebo arm and received either a once-daily (QD) 600 mg dose, a single 500 mg loading dose (LD) followed by a 300 mg twice daily (BID) dose, or placebo, for 5 days. Data from this study demonstrated that EDP-938 achieved highly statistically significant reductions ($p=<0.001$) in RSV viral load (by both qRT-PCR and plaque assays), total symptom scores and mucus weights compared to placebo. In addition, the study showed that mean trough levels of drug achieved in study subjects were 20-40x higher than the amount of EDP-938 that has been shown in previously reported *in vitro* studies to reduce 90% of the viral RNA in RSV-infected human cells.

Based on these results, in November 2019 we initiated our first Phase 2b study of EDP-938, which is being conducted in adult outpatients with RSV infection. This study, named RSVP, is designed to help us better understand the feasibility of this direct-acting antiviral therapy. The RSVP study is a randomized, double-blind, placebo-controlled study that is designed to enroll approximately 70 subjects, up to the age of 75 years, randomized to receive either 800 mg of EDP 938 or placebo for 5 days. The primary objective of the study is to evaluate the effect of EDP-938 on the progression of RSV infection by assessment of clinical symptoms measured over the course of the 14-day study observation period. Antiviral efficacy will be evaluated as a key secondary endpoint.

We initiated the study during the 2019-2020 winter RSV season in the U.S. and then moved to the Southern Hemisphere for their RSV season in mid-2020. The mitigation steps to manage the COVID-19 pandemic since March 2020 have suppressed the incidence of RSV and other respiratory illnesses globally (other than COVID-19). We have continued our preparedness efforts to ensure we are ready when RSV re-emerges, including establishing trial sites in North America, Europe, the Asia-Pacific and the Southern Hemisphere, and there have been reports of increased RSV incidence globally, including in the United States and Europe. Given that the recent re-emergence of RSV is not following any normal seasonal pattern, as well as the impact of renewed social distancing interventions where the Delta variant has increased the incidence of COVID-19, it is uncertain how significant or sustained the new incidence of RSV will be moving forward. Nonetheless, we expect that enrollment in the RSVP study will be complete during the Northern Hemisphere winter season if there is no further significant increase in social distancing interventions.

Concurrent with the RSVP study, we initiated two additional RSV studies during 2020-2021. Our Phase 2b study called RSVTx in adult hematopoietic cell transplant recipients with acute RSV infection and symptoms of upper respiratory tract infection was initiated in December 2020. We plan to enroll approximately 200 adult subjects 18 to 75 years of age, within 72 hours of symptom onset, who will receive EDP-938 or placebo for 21 days. The primary endpoint is the incidence of lower respiratory tract complications within 28 days of enrollment, while secondary endpoints include change from baseline in RSV RNA viral load, safety and pharmacokinetics. In addition, we initiated a Phase 2 RSV study called RSVPEDs in pediatric patients in March 2021. We plan to enroll 90 RSV patients aged 28 days to 24 months. The double-blind, placebo-controlled study will be conducted in hospitalized and non-hospitalized pediatric settings.

In addition to our N-protein inhibitor, EDP-938, we also have initiated an RSV L-protein inhibitor discovery effort centered around potent nanomolar leads active against both RSV-A and RSV-B, for potential use alone or in combination with agents targeting other RSV mechanisms, such as our lead RSV asset, EDP-938.

Our HBV Program

Background and Overview of HBV

Hepatitis B virus, or HBV, can cause potentially life-threatening liver infection. The virus is transmitted through contact with the blood or other bodily fluids of an infected person. It is estimated that close to 300 million people worldwide are chronically infected, and 15-40% of patients with chronic HBV infection develop chronic liver disease, including cirrhosis, liver cancer, or liver decompensation. HBV is a leading cause of chronic liver disease and need for liver transplantation. It is estimated that more than 820,000 people worldwide died in 2019 due to complications of HBV.

Current approaches to treatment include interferon therapy and/or inhibitors of HBV reverse transcriptase, the enzyme responsible for viral DNA synthesis, which is necessary for HBV replication. Treatment with interferon offers modest cure rates, and is accompanied by serious side effects, including flu-like symptoms, fatigue, headache and nausea. Reverse transcriptase inhibitors can be very effective at suppressing the virus but often require lifelong therapy and rarely result in full eradication of the virus from the liver. New treatments that can provide functional cures to chronically-infected patients are urgently needed.

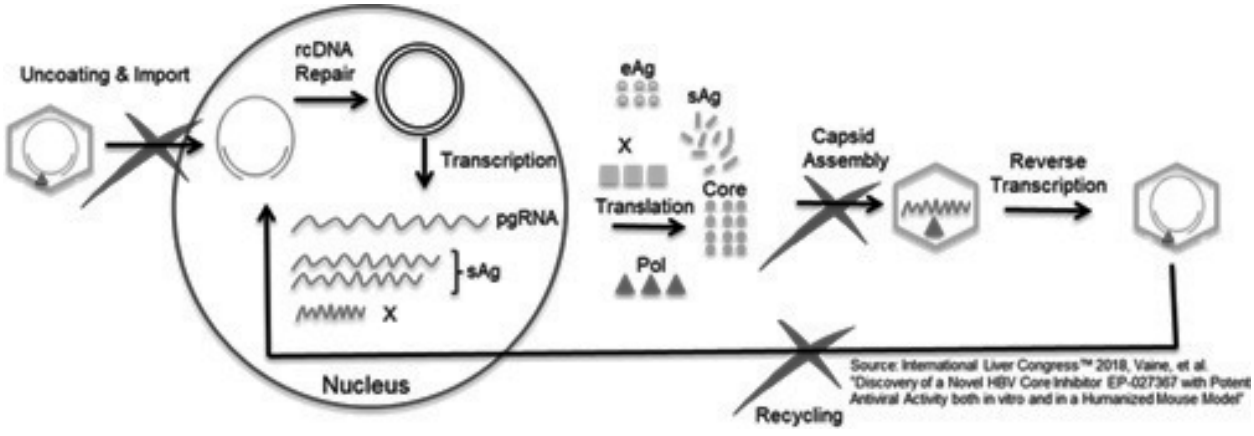
Scientific Background

HBV is a partially double-stranded DNA virus with a complex life cycle. There are multiple mechanisms associated with HBV replication that could potentially be targeted with new drugs, and combination approaches may ultimately provide the most effective therapy for HBV. Mechanisms under study for HBV include:

- Entry inhibitors that interfere with the initial binding of HBV to hepatocytes, thus preventing new infection from occurring.
- Inhibitors of covalently closed circular DNA, or cccDNA, the template for HBV replication, which are in early stages of development. Most of these inhibitors act in an indirect manner, such as preventing formation of cccDNA or silencing its transcription.
- RNA silencing of gene expression, another prominent approach in the search for HBV inhibitors, which utilizes small interfering RNA's (siRNA's). This mechanism has the potential to significantly reduce HBV RNA, HBV DNA, and HBV protein levels.
- Inhibition of the hepatitis B core protein, which plays a critical role in viral replication, intracellular trafficking, and maintenance of chronic infections. Using this core inhibitor mechanism (also known as capsid assembly inhibitor or core protein allosteric modifier), some initial data shows reduction in HBV DNA and HBV RNA in early clinical trials.
- The surface antigen of HBV, or HBsAg, which is the main envelope protein of the virus and, another target in the HBV life cycle. HBsAg is critical to ongoing infection, and loss of serum HBsAg is associated with a functional cure of HBV, characterized by no inflammation, normal liver enzymes, and normal liver biopsy. Therefore, HBsAg is the target of several therapeutic approaches, including indirect ones such as siRNA mentioned above, but also specific approaches including the inhibition of HBsAg release.
- The modulators of the human immune system, or immunomodulators, are another major mechanism being researched. HBV has evolved to evade the natural host immune mechanisms that normally would clear a viral infection, thus approaches that can augment the immune response are being actively pursued. In fact, interferon has been used for the treatment of HBV for decades and while it can induce a functional cure, the cure is only seen in a small percentage of patients and the treatment is generally not well tolerated. More targeted immunological approaches are being studied, including agonists of toll-like receptors, modulators of apoptotic signaling, and checkpoint inhibition, as well as therapeutic vaccines.

While there are antiviral medications prescribed for HBV that can suppress HBV DNA, they generally have low cure rates, resulting in the need for lifelong treatment. Many companies are seeking to develop new HBV drugs that alone or in combination with other mechanisms could lead to a functional cure of HBV. Altimmune, Antios, Arbutus, Ascletis, Assembly, GIGB, Gilead, Green Cross, GSK/Ionis, HEC Pharma, Johnson & Johnson/Janssen, Replicor, Roche, Tasly, Vaccitech, VBI Vaccines and Vir Biotechnology have Phase 2 programs in progress, with many of these companies conducting earlier stage programs as well. In addition, a number of companies have Phase 1 or earlier stage HBV programs.

EDP-514's Mechanisms of Action against HBV



We believe that HBV, like HIV and HCV, will be optimally treated with multiple agents that have different mechanisms, and therefore seek to develop a combination regimen. We initially focused on new core inhibitors that we expect to have an impact on

capsid assembly and possibly interfere with other viral processes. Core inhibitors, also known as capsid assembly modulators or core protein allosteric modulators, are a novel class of replication inhibitors that have been shown to act at multiple steps in the HBV lifecycle. These inhibitors would be expected to prevent proper uncoating, nuclear import, assembly, and recycling. This approach is supported by early clinical validation, with the core inhibitor NVR 3-778 from Novira, JNJ-56136379 from Janssen, and ABI-H0731 from Assembly, demonstrating clinical reduction of viral DNA in chronic HBV patients in short-term Phase 1b or Phase 2 clinical studies.

EDP-514, our most advanced novel core inhibitor, displays potent anti-HBV activity *in vitro* at multiple points in the HBV lifecycle. We initiated clinical development of EDP-514 and have completed two Phase 1b studies in patients with chronic HBV.

Our initial Phase 1 clinical study of EDP-514 was a randomized, double-blind, placebo-controlled Phase 1a/1b study designed in two parts: Part 1 evaluated the safety, tolerability and pharmacokinetics of single ascending doses (SAD) and multiple ascending doses (MAD) of EDP-514 in healthy subjects; and Part 2 is evaluating the antiviral activity of EDP-514 in patients with chronic HBV infection that are being suppressed with nucleos(t)ide-reverse-transcriptase treatment – the current standard of care whom we refer to as NUC-suppressed HBV patients.

The study was completed successfully. Overall, in Part 1, EDP-514 demonstrated a favorable safety profile in healthy subjects for up to 14 days and was well tolerated with all treatment emergent adverse events being mild in intensity and with no discontinuations due to adverse events. Further, there were no significant individual laboratory data findings or pattern of abnormalities and EDP-514's pharmacokinetic profile demonstrated good blood levels that support once-daily dosing. Based on these results, Part 2 of the study evaluated EDP-514 in NUC-suppressed patients. At Day 28, mean HBV RNA change of -0.81, -1.12, 0.10, and -0.19 log U/mL were observed in the 200 mg, 400 mg, 800 mg and placebo groups, respectively. EDP-514 led to a maximum HBV RNA reduction of 2.3 log in HBeAg-negative and 2.8 log in HBeAg-positive subjects in EDP-514 arms compared to 1.2 log in placebo. For the EDP-514 800 mg subjects, five of six subjects had either non-detectable or very low levels of HBV RNA at baseline; consequently, the effect of EDP-514 on HBV RNA could not be assessed in these subjects. As expected in this NUC-suppressed patient population, there were no discernible changes in HBV DNA, and also, no changes in viral proteins (HBeAg, HBcrAg, and HBsAg). There were no instances of virologic failure. Overall, EDP-514 was generally safe and well-tolerated at 200, 400 and 800 mg doses for 28 days in NUC-suppressed chronic HBV patients. EDP-514 was rapidly absorbed and its exposure increased with increasing multiple doses. EDP-514 exhibited PK suitable for once daily oral dosing, with Ctrough concentrations reaching up to approximately 21-fold above the protein-adjusted EC_{50}.

In addition, we conducted a separate Phase 1b study in patients with chronic HBV infection who were not previously on HBV therapy and had high levels of virus in their blood, whom we refer to as viremic HBV patients. Results demonstrated that EDP-514 was safe and well-tolerated through 28 days of treatment, displayed pharmacokinetics supportive of once-daily dosing, with Ctrough concentrations reaching up to approximately 20-fold above the protein-adjusted EC_{50}. Mean HBV DNA reductions of 2.9, 3.3, and 3.5 logs were observed at 28 days for the 200 mg, 400 mg, and 800 mg cohorts, respectively, compared to 0.2 log in placebo. Mean HBV RNA reduction in the three viremic treatment cohorts was at least 2 logs compared to a 0.02 log reduction in the placebo group. As expected, there were no discernible changes in viral proteins (HBeAg, HBcrAg, and HBsAg).

Our SARS-CoV-2 Program

Background and Overview of SARS-CoV-2

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the virus that causes COVID-19 (coronavirus disease 2019), the respiratory illness responsible for the ongoing COVID-19 pandemic. SARS-CoV-2 is the seventh known coronavirus to infect people, after 229E, NL63, OC43, HKU1, MERS-CoV, and the original SARS-CoV. Most people infected with the virus experience mild to moderate respiratory illness and recover over time. However, some patients will have more severe symptoms requiring hospitalization and may experience severe life-threatening complications, including acute respiratory distress syndrome (ARDS), which may trigger a systemic multi-organ collapse. Older people and those with underlying medical conditions like cardiovascular disease, diabetes, chronic respiratory disease, or cancer are more likely to develop serious illness. There are also many patients who experience continuing effects of COVID-19, often referred to as "long-haul COVID-19", and there still is little known about the enduring effects of the disease. As of November 1, 2021, there were approximately 250 million reported cases of people infected with SARS-CoV-2 worldwide, resulting in close to 5 million deaths, while many estimates of the number of infections far exceeds the reported cases. While effective vaccines are available, uptake has not been optimal. In addition, breakthrough infection can occur because the vaccines are not 100% effective, especially against the Delta variant. With the continuing prevalence of COVID-19 globally, there is heightened risk of a further mutation of the virus that could evade one or more of the current vaccines. Thus there is an urgent need for effective, safe, oral, antiviral treatments.

Scientific Background

SARS-CoV-2 is a positive-sense, single-stranded RNA enveloped β-coronavirus, with a viral envelope coated by spike (S) glycoprotein, envelope (E), and membrane (M) proteins.

Host cell binding and entry are mediated by the S protein, and the first step in infection is when the virus binds to a host cell through its target ACE2 receptor. The S2 sub-unit is highly preserved and a potential antiviral target. The virus' main protease (Mpro) is an antiviral drug target due to its critical role in processing the polyproteins that are translated from the viral RNA as well as the SARS-CoV-2 RNA-dependent RNA polymerase (RdRp) that is used for viral genome replication and transcription of viral genes.

Early in the COVID-19 pandemic, hundreds of existing antivirals and other compounds were initially screened for activity against SARS-CoV-2 in the hopes of quickly finding an effective treatment. Some of these compounds progressed into clinical testing, including remdesivir, which is currently the only FDA-approved antiviral for COVID-19. Remdesivir was originally developed for Ebola but showed efficacy in COVID-19. Other repurposed antivirals in development for treatment of COVID-19 include inhibitors of viral RNA-dependent RNA polymerase, or RNA polymerase inhibitors, such as molnupiravir, which was initially created to target influenza, and AT-527, which was originally being developed for HCV. Since the onset of the pandemic, novel antivirals specifically designed to target SARS-CoV-2 are progressing in clinical development. EDP-235, a novel SARS-CoV-2 3CL protease inhibitor, is one of those antivirals specifically designed for the treatment of COVID-19.

Companies with compounds targeting the 3CL protease or the RNA polymerase that are currently in Phase 2/3 registrational studies including RNA polymerase inhibitors from Atea/Roche, Merck/Ridgeback and Toyama and 3CL protease inhibitors from Pfizer and Shionogi, as well as compounds in Phase 1/2 studies, including those from Pardes, Biocryst, Todos, and Selva. Merck recently reported results from a Phase 3 study of molnupiravir in high-risk outpatients infected with COVID-19, which showed a 50% reduction in hospitalization or death through one month after treatment compared to placebo. Molnupiravir is currently approved in the UK and under EUA review at the FDA and EMA. Pfizer also recently reported results from a Phase 3 study of PF-07321332 in high-risk outpatients infected with COVID-19, which showed an 85% reduction in hospitalization or death through one month after treatment compared to placebo (89% if treated within 3 days of symptom onset). PF-07321332 was dosed every 12 hours, or BID, in combination with a low dose of ritonavir. These data indicate the opportunity for novel SARS-CoV-2 direct-acting antivirals and highlight the need to bring forward safe, efficacious and convenient treatments.

EDP-235, Our Lead Oral Protease Inhibitor

In a biochemical assay, EDP-235 inhibited the SARS-CoV-2 3CL protease with an IC_{50} of 5.8 nM. Importantly, this activity was retained against proteases from SARS-CoV-2 variants. EDP-235 potently blocked the replication of SARS-CoV-2 in multiple cellular models, including primary human airway epithelial cells, where an EC_{90} of 33 nM was observed. Additionally, EDP-235 was shown to have potent antiviral activity across other human coronaviruses. In comparison to preclinical data from other direct acting antivirals in development for COVID-19 today, EDP-235 appears to be among the most potent against SARS-CoV-2 in cellular assays.

EDP-235 showed good human Caco-2 cell permeability and a low plasma clearance in human liver microsomes. Consistent with this *in vitro* data, EDP-235 had robust plasma exposure with an oral bioavailability of 95% in rats. Moreover, EDP-235 had favorable *in vivo* penetration into multiple target tissues, including lung, kidney, liver, and heart. These results indicate that EDP-235 has good oral bioavailability and target tissue distribution compared to other antivirals in development for SARS-CoV-2 today. Based on allometric scaling, EDP-235 is projected to have a long half-life of 16 hours with an efficacious dose of 100 to 500 mg once-daily in humans. Taken together, these data indicate that EDP-235 has the potential for once-daily oral dosing with a low pill burden.

Enanta has completed IND-enabling preclinical studies of EDP-235 and plans to advance the candidate into the clinic in early 2022.

Our Out-Licensed HCV Protease Inhibitor Products

Background and Overview of HCV Market

HCV is a virus that is a common cause of viral hepatitis, an inflammation of the liver. HCV is typically contracted by contact with the blood or other body fluids of another individual infected with HCV. HCV is a leading cause of chronic liver disease, including cirrhosis, liver failure and cancer, and the leading cause of death from liver disease in the United States. HCV disease progression occurs over a period of 20 to 30 years, with the majority of HCV-infected individuals generally exhibiting no major symptoms in the early stages of the disease. Therefore, until a major symptom is diagnosed, many individuals are unaware they are infected and live undiagnosed without seeking treatment. For that reason, combined with the new availability of effective treatments for HCV, the United States Centers for Disease Control and Prevention, or CDC, issued new guidelines in 2013 recommending screening for all Americans born between the years 1945 and 1965 so that HCV-infected individuals will be aware of their condition and can consider treatment options.

An estimated 58 million people worldwide are chronically infected with HCV and have an increased risk of eventually developing liver cirrhosis or liver cancer. Approximately 290,000 people die every year from HCV-related liver diseases. The CDC currently

estimates that approximately 2.4 million people in the United States are chronically infected with HCV, with an estimated 44,300 new infections in 2017, the most recent year for which the CDC has published data. We believe that the chronically infected population remains significantly untreated, even with the introduction of several new treatment regimens beginning in 2013.

The approved treatments for HCV have provided significant benefit to HCV patients. To date, these treatments have cure rates approaching 100% in several subpopulations. Medical practice defines a "cure" as the point at which there is no quantifiable virus in a patient's blood for a sustained period of time after cessation of therapy, which is often referred to as a sustained virologic response, or SVR. For AbbVie's MAVYRET/MAVIRET regimen, the majority of chronic HCV patients only require 8 weeks of treatment compared to 12 weeks with other HCV regimens, including Gilead's EPCLUSA® and HARVONI® in almost all HCV genotypes.

Since the introduction of Gilead's Harvoni® and AbbVie's VIEKIRA PAK® in late 2014, the reported worldwide sales of the leading HCV therapies have declined from $23 billion in 2015 to $3.9 billion in 2020. Through the first nine months of calendar 2021, reported worldwide net sales were $2.8 billion**.** HCV sales have declined since their peak in 2015 due to payers obtaining additional discounts, competitive market dynamics and a decline in the number of patients treated annually after the initial wave of diagnosed chronic HCV patients who had urgency for treatment. After the regulatory approvals of MAVYRET and Gilead's Vosevi® in 2017, Johnson & Johnson and Merck announced they had terminated their development of additional HCV treatments. Despite the high numbers of HCV patients that have been successfully treated, there remains a large population of chronic HCV-infected patients who have yet to be treated with one of the newer "high cure" regimens. In addition, and as noted above, new HCV infections (principally in association with IV drug use) are an ongoing target population for treatment.

During 2021 and 2020, COVID-19 has also impacted new HCV patient volumes, HCV diagnoses, HCV prescriptions and sales of MAVYRET/MAVIRET worldwide. While new HCV infections are continuing, at this time it is uncertain when and the extent to which treatment of new HCV patients and revenues will return to pre-COVID-19 levels.

Our Out-Licensed Products in AbbVie's Marketed Therapies

Glecaprevir - Our protease inhibitor, glecaprevir, which is part of the latest HCV regimen from AbbVie, was developed by AbbVie in combination with pibrentasvir, AbbVie's second NS5A inhibitor. This co-formulated combination, marketed under the tradenames MAVYRET® (U.S.) and MAVIRET® (ex-U.S.), contains two novel DAAs that target and inhibit proteins essential for the replication of HCV. MAVYRET/MAVIRET is approved in the U.S., EU, Japan and numerous other countries globally as an 8-week, pan-genotypic, fixed-dose combination treatment, dosed once-daily as three oral tablets, taken with food, for chronic HCV patients without cirrhosis and new to treatment. MAVYRET/MAVIRET is also approved as a treatment for patients with specific treatment challenges, including those GT-1 patients not cured by prior treatment experience with either a protease inhibitor or an NS5A inhibitor (but not both), and in patients with limited treatment options, such as those with severe chronic kidney disease (CKD) or those with genotype 3 chronic HCV. MAVYRET/MAVIRET is approved for use in patients across all stages of CKD with any of the major HCV genotypes (GT1-6). The approvals of MAVYRET/MAVIRET are supported by data from nine registrational studies in AbbVie's clinical development program, which evaluated more than 2,300 patients in 27 countries across all major HCV genotypes (GT1-6) and special populations:

- ***8 weeks for treatment-naïve, non-cirrhotics:*** In November 2016, results from several Phase 3 studies of this combination demonstrated 97.5% of chronic HCV infected patients without cirrhosis and new to treatment across all major genotypes (GT1-6) achieved sustained virologic response at 12 weeks post-treatment, referred to as SVR_{12}, with just 8 weeks of MAVYRET/MAVIRET treatment.
- ***8 weeks with chronic kidney disease:*** Results were also presented from AbbVie's EXPEDITION-4 study in chronic HCV patients with chronic kidney disease (CKD), in which 98% of patients (n=102/104) across all major genotypes (GT1-6) achieved SVR_{12} with 12 weeks of treatment with MAVYRET/MAVIRET.
- ***8 weeks for GT-3:*** Data from AbbVie's ENDURANCE-3 study were presented at the 2017 ILC, demonstrating that 95% of patients with challenging-to-treat, genotype 3 (GT3) chronic HCV infection, without cirrhosis and new to treatment, achieved SVR_{12} after 8 weeks of treatment with MAVYRET/MAVIRET.
- ***8 weeks for compensated cirrhosis:*** Based on data from AbbVie's EXPEDITION-8 study, which demonstrated that with 8 weeks of MAVYRET treatment, 100 percent (n=273/273) of genotype 1, 2, 4, 5 and 6 patients achieved a sustained virologic response 8 weeks after treatment (SVR_8) per protocol analysis. Based on this data and a second cohort of the study in genotype 3 (GT3) chronic HCV-infected patients, MAVYRET is now approved for all genotypes with compensated cirrhosis in the U.S.

Paritaprevir - The first protease inhibitor developed through our collaboration with AbbVie, paritaprevir, is part of AbbVie's 3-DAA regimen approved for the treatment of genotype 1 and 4 HCV patients. This 3-DAA combination was sold as VIEKIRA PAK® (paritaprevir/ritonavir/ombitasvir/dasabuvir) in the U.S. from December 2014 to December 2018, and as VIEKIRAX®+EXVIERA® in

most other jurisdictions, for non-cirrhotic patients and those with early stage, or compensated, cirrhosis. These regimens have been almost entirely replaced by MAVYRET/MAVIRET.

Collaboration and License Agreement with AbbVie

We entered into a Collaborative Development and License Agreement with Abbott Laboratories in November 2006 to develop and commercialize HCV NS3 and NS3/4A protease inhibitors. The agreement, which was amended in January and December 2009, was then assigned to AbbVie Inc. on January 1, 2013 in connection with Abbott's transfer of its research-based pharmaceuticals business to AbbVie. Under the agreement, we have granted AbbVie an exclusive, worldwide, royalty-bearing license, including a right to grant sublicenses, to specified intellectual property, including several issued U.S. patents, relating to protease inhibitors. We also granted AbbVie access to our drug discovery capabilities in the HCV NS3 and NS3/4A protease inhibitor field. AbbVie granted us a co-exclusive (together with AbbVie), royalty-free, fully paid license, without the right to grant sublicenses, to certain of AbbVie's intellectual property, AbbVie's interest in joint intellectual property and improvements discovered by AbbVie, for the purpose of allowing us to conduct certain development and commercialization activities in the United States relating to protease inhibitors. AbbVie is responsible for and has funded all costs associated with the development, manufacturing and commercialization of paritaprevir, glecaprevir and any other compounds under this agreement. Under the agreement, we are eligible to receive milestone payments and royalties with respect to these compounds. So long as a product candidate is being developed or commercialized under the agreement, we undertake not to conduct any activity, or grant licenses to a third party, relating to protease inhibitors.

A joint steering committee was established under the agreement with review and oversight responsibilities for all research, development and commercialization activities. The joint steering committee is comprised of three of our senior personnel and three senior personnel from AbbVie; however, AbbVie has final authority to make all decisions regarding development and commercialization activities.

The research program and the evaluation period, which was performed by both parties, ended in June 2011. The first commercialized compound was paritaprevir with the second commercialized compound, glecaprevir, approved in 2017 and marketed under the tradenames MAVYRET® (U.S.) or MAVIRET™ (ex-U.S.). Under this collaboration we have received $396.0 million in payments from AbbVie for license payments, proceeds from a sale of preferred stock, research funding payments and milestone payments through September 30, 2021.

We also receive annually tiered, double-digit royalties per protease inhibitor product developed under the agreement, which range from ten percent up to twenty percent, or on a blended basis from the low double digits up to the high teens. However, if a product is determined to be a combination product, as is the case for both glecaprevir and paritaprevir, the net sales of the combination product are adjusted on a country-by-country and product-by-product basis to reflect a good faith determination of the relative value of each pharmaceutically active ingredient, based on the estimated fair market value. This means that a portion of AbbVie's worldwide annual net sales of a combination product or regimen is first allocated to one of our protease inhibitors and then that royalty-bearing portion is multiplied by the annually tiered royalty rates to determine our actual royalty for the protease product in that regimen in a given period. Under the terms of our agreement, as amended in October 2014, 50% of AbbVie's net sales of MAVYRET/MAVIRET are allocated to glecaprevir. In the case of regimens containing paritaprevir, 30% of net sales of 3-DAA regimens containing paritaprevir and 45% of net sales of 2-DAA regimens containing paritaprevir are allocated to paritaprevir for purposes of calculating our annually tiered royalties. Beginning with each January 1, the cumulative net sales of a given royalty-bearing protease inhibitor product start at zero for purposes of calculating the tiered royalties on a product-by-product basis. Under this collaboration, we have received royalty payments from AbbVie totaling $722 million through September 30, 2021. Further details of these tiered royalties are set forth in Note 7 in Notes to Consolidated Financial Statements included in this report, which are incorporated herein by this reference.

Royalties owed to us under the agreement can be reduced by AbbVie in certain circumstances, including (i) if AbbVie exercises its right to license or otherwise acquire rights to intellectual property controlled by a third party where a product could not be legally developed or commercialized in a country without the third-party intellectual property right, (ii) where a product developed under the collaboration agreement is sold in a country and not covered by a valid patent claim in such country, or (iii) where sales of a generic product are equal to at least a specified percentage of AbbVie's market share of a product in a country.

AbbVie's obligation to pay royalties on products developed under the agreement expires on a country-by-country and product-by-product basis upon the later of (i) the date of expiration of the last of the licensed patents with a valid claim covering the product in the applicable country, and (ii) ten years after the first commercial sale of the product in the applicable country.

Our intellectual property existing as of the effective date of the agreement remains our property. Any intellectual property jointly developed is jointly owned. We will have the unilateral right to enforce our patent rights on any covered product following the first commercial sale of such product, as will AbbVie. In the event of infringement related to any of our patents, we will have the first right and option to initiate legal proceedings or take other actions. In the event of infringement related to any AbbVie patents, AbbVie will have the first right and option to initiate legal proceedings or take other actions. In the event of infringement of a joint patent right, we will discuss with AbbVie whether to initiate legal proceedings or take other actions. AbbVie will have the obligation to defend at its sole expense any actions brought against either party alleging infringement of third-party rights by reason of the activities conducted

under the agreement and we will have the right to obtain separate counsel at our own expense. Additionally, AbbVie, at its sole expense, will be responsible for all trademark prosecution.

Subject to the exceptions described above, a party's rights and obligations under the agreement continue until: (i) such time as AbbVie is no longer developing a product candidate or (ii) if, as of the time AbbVie is no longer developing any product candidates, AbbVie is commercializing any other protease inhibitor product, such time as all royalty terms for all covered products and all co-development terms for all co-developed products have ended. Accordingly, the final expiration date of the agreement is currently indeterminable.

Either party may terminate the agreement for cause in the event of a material breach, subject to prior notice and the opportunity to cure, or in the event of the other party's bankruptcy. Additionally, AbbVie may terminate the agreement for any reason upon specified prior notice.

If we terminate the agreement for cause or AbbVie terminates without cause, any licenses and other rights granted to AbbVie will terminate and AbbVie will be deemed to have granted us (i) a non-exclusive, perpetual, fully paid, worldwide, royalty-free license, with the right to sublicense, under AbbVie's intellectual property used in any product candidate and (ii) an exclusive (even as to AbbVie), perpetual, fully paid, worldwide, royalty-free license, with the right to sublicense, under AbbVie's interest in joint intellectual property rights to develop product candidates resulting from covered compounds and to commercialize any products derived from such compounds. Upon our request, AbbVie will also transfer to us all right, title and interest in any related product trademarks, regulatory filings and clinical trials.

If AbbVie terminates the agreement for our uncured breach, the royalty payments payable by AbbVie may be reduced, the licenses granted to AbbVie will remain in place, we will be deemed to have granted AbbVie an exclusive license under our interest in joint intellectual property, AbbVie will continue to have the right to commercialize any covered products, and all rights and licenses granted to us by AbbVie will terminate.

Drug Discovery

We have internally discovered all of the compounds in our research and development programs. Our scientists have expertise in the areas of medicinal chemistry, molecular virology, pharmacology, and toxicology with highly developed sets of skills in compound generation, target selection, screening and pharmacology, preclinical development and lead optimization. We are utilizing these skills and capabilities in our discovery and development of virology and liver disease product candidates.

We focus on virology and other disease indications representing large and growing market opportunities with significant unmet medical needs. Our selection of a particular therapeutic target within those disease indications takes into consideration the experience and expertise of our scientific team and includes our ability to generate robust medicinal chemistry structure-activity relationships to assist lead optimization and secure relevant intellectual property rights. Once we have identified lead compounds, they are tested using *in vitro* and *in vivo* pharmacology studies and *in vivo* research models of antiviral or antibacterial efficacy.

Competition

We are engaged in segments of the pharmaceutical industry that are highly competitive and rapidly changing. Many large pharmaceutical and biotechnology companies, academic institutions, governmental agencies and other public and private research organizations are commercializing or pursuing the development of products that target HCV, RSV, HBV, SARS-CoV-2, hMPV and other viral infections or other diseases that we may target in the future.

Many of our competitors have substantially greater commercial infrastructures and financial, technical and personnel resources than we have, as well as drug candidates in late-stage clinical development. We will not be able to compete successfully unless we are able to:

- design and develop products that are superior to other products in the market;
- attract qualified scientific, medical, regulatory, sales and marketing and commercial personnel;
- obtain patent and/or other proprietary protection for our processes and product candidates;
- obtain required regulatory approvals; or
- collaborate with others in the development and commercialization of new products.

Established competitors may invest heavily to quickly discover and develop novel compounds that could make our product candidates obsolete. In addition, any new product that competes with an approved product must demonstrate compelling advantages in efficacy, convenience, tolerability and safety, or some combination of these factors, to overcome competition and to be commercially successful.

We expect AbbVie's MAVYRET/MAVIRET to continue to face intense competition due to existing approved products in the HCV market. AbbVie's MAVYRET/MAVIRET regimen currently faces competition in various world markets and subpopulations of HCV from Gilead's Epclusa® (a fixed dose combination of sofosbuvir and velpatasvir), Vosevi® (a triple combination therapy of sofosbuvir, velpatasvir and voxilaprevir approved by the FDA for specified sofosbuvir -treatment failures and NS5A-inhibitor treatment failures) and Harvoni® (a fixed-dose combination of sofosbuvir and ledipasvir); and to a lesser extent - Merck's Zepatier® (a fixed-dose combination of grazoprevir and elbasvir). Gilead launched authorized generic versions of Epclusa and Harvoni through its subsidiary, Asegua Therapeutics, LLC, which have had an impact on the competitive landscape. For example, the state of Louisiana selected Asegua as their HCV subscription model pharmaceutical partner to provide the state with unrestricted access to its direct-acting antiviral medication.

Other competitive products in the form of other treatment methods or a vaccine for HCV may render MAVYRET/MAVIRET obsolete or noncompetitive. MAVYRET/MAVIRET will face competition based on its safety and effectiveness, reimbursement coverage, price, patent position, AbbVie's marketing and sales capabilities, and other factors. If MAVYRET/MAVIRET faces competition from generic products other than authorized generic versions by the manufacturer of the branded product (i.e. Gilead and Asegua Therapeutics), our collaboration agreement provides that the royalty rate applicable to our protease product contained in the regimen is reduced significantly by a specified percentage on a product-by-product, country-by-country basis. If AbbVie is not able to compete effectively against its competitors in HCV, our business will not grow and our financial condition, operations and stock price will suffer.

Similarly, HBV, RSV and COVID-19 represent competitive therapeutic areas. While there are antiviral medications prescribed for HBV that can suppress HBV DNA, they generally have low cure rates, resulting in the need for lifelong treatment. Many companies are seeking to develop new HBV drugs that alone or in combination with other mechanisms could lead to a functional cure of HBV. Altimmune, Antios, Arbutus, Ascletis, Assembly, GIGB, Gilead, Green Cross, GSK/Ionis, HEC Pharma, Johnson & Johnson/Janssen, Replicor, Roche, Tasly, Vaccitech, VBI Vaccines and Vir Biotechnology have Phase 2 programs in progress, with many of these companies conducting earlier stage programs as well. In addition, a number of companies have Phase 1 or earlier stage HBV programs.

For RSV, there are currently no safe and effective therapies for already established RSV infection. Several companies are seeking to develop new antiviral treatments for RSV infection in adult and pediatric patients. Ark Biosciences, Johnson & Johnson and ReViral each have compounds in clinical development. A prophylactic, monoclonal-antibody-based treatment from MedImmune, which is commercialized by AbbVie outside the U.S., is approved for infants considered at high risk for RSV infection; however, studies have found that most young children with RSV infection were previously healthy, and thus would not normally be prescribed prophylactic treatment. AstraZeneca/Sanofi and Merck are developing long-acting versions of the monoclonal antibody for prophylaxis use in infants. In addition, a number of companies have RSV vaccines in development, primarily directed at prevention of RSV infection, and some companies are also evaluating vaccines in a therapeutic mode for treatment of established RSV infection.

There are some companies developing oral antivirals for SARS-CoV-2 that are currently in Phase 2/3 registrational studies including Atea/Roche, Merck/Ridgeback, Pfizer and Shionogi, Toyama as well as compounds in Phase 1 studies including Pardes and Selva.

If we are not able to develop new products that can compete effectively against our current and future competitors, our business will not grow and our financial condition, operations and stock price will suffer.

Intellectual Property

As part of our business strategy, we actively seek patent protection for our product candidates in the United States and certain major foreign jurisdictions and file additional patent applications, when appropriate, to cover improvements to our compounds. We also rely on trade secrets, internal know-how, technological innovations and agreements with third parties to develop, maintain and protect our competitive position. Our ability to be competitive will depend on the success of this strategy.

Each of our major research and development programs, including RSV, HBV, and SARS-CoV-2, as well as our out-licensed products for HCV and our FXR agonist assets, typically has several pending patent claims and issued patents in the program area containing claims to compounds, methods of use and processes for synthesis. However, only a few of the issued patents and/or pending patent applications cover the lead product candidate in a given program.

RSV, HBV and SARS-CoV-2 Programs. Our patent portfolio directed to N-and L-protein inhibitors for RSV, core inhibitors for HBV, and protease inhibitors for SARS-CoV-2 includes issued U.S. patents or pending U.S. patent applications, or both, as well as numerous foreign patent applications. We expect that our existing patents and patent applications (assuming patents are ultimately issued), will provide composition of matter patent coverage in the U.S., if and when a compound is approved by the FDA, until at least 2038 for each of our compounds currently in clinical development.

HCV NS3 Protease Inhibitor Program. The patent portfolio directed to the HCV protease inhibitor program with AbbVie includes U.S. patents and foreign patents, as well as non-provisional applications. The issued U.S. composition-of-matter patent covering paritaprevir is expected to expire in 2031. The issued U.S. composition-of-matter patent covering glecaprevir is expected to expire in

2032. AbbVie is a joint owner of a number of the non-provisional patent applications. AbbVie also has rights to some or all of these patents and patent applications pursuant to its collaboration agreement with us.

We may obtain patents for certain compounds many years before we obtain marketing approval for products containing such compounds. Because patents have a limited life, which usually begins to run well before the first commercial sale of the related product, the commercial value of the patent may be limited. However, we may be able to apply for patent term extensions in the United States and in a number of European countries, compensating in part for delays in obtaining marketing approval, but we cannot be certain we will obtain such extensions.

It is also very important that we do not infringe patents or other proprietary rights of others. If we do infringe such patents or other proprietary rights, we could be prevented from developing or selling products or from using the processes covered by those patents, could be required to pay substantial damages, or could be required to obtain a license from the third party to allow us to use their technology, which may not be available on commercially reasonable terms or at all. If we were not able to obtain a required license or develop alternative technologies, we may be unable to develop or commercialize some or all of our products, and our business could be adversely affected.

In addition, we jointly own patent applications, together with AbbVie, that claim paritaprevir and glecaprevir as a chemical entity. However, there is no guarantee that such applications will issue. Further, the existence of issued patents does not guarantee our right to practice the patented technology or commercialize the patented product. Third parties may have already or could obtain rights to patents that could be used to prevent or attempt to prevent us from commercializing our product candidates. If these other parties are successful in obtaining valid and enforceable patents, and establishing our infringement of those patents, we could be prevented from commercializing our product candidates unless we were able to obtain a license under such patents, which may not be available on commercially reasonable terms or at all.

Much of our scientific capabilities depend upon the knowledge, experience and skills of key scientific and technical personnel. To protect our rights to our proprietary know-how and technology, we endeavor to require all employees, as well as our consultants and advisors, when feasible, to enter into confidentiality agreements that require disclosure and assignment to us of ideas, developments, discoveries and inventions made by these employees, consultants and advisors in the course of their service to us.

We may be unable to obtain, maintain and protect the intellectual property rights necessary to conduct our business, and we may be subject to claims that we infringe or otherwise violate the intellectual property rights of others, which could materially harm our business. For more information, see "Risk Factors—Risks Related to Our Intellectual Property Rights."

Government Regulation

Government authorities in the United States, at the federal, state and local level, and in other countries extensively regulate, among other things, the research, development, testing, manufacture, quality control, approval, labeling, packaging, storage, record-keeping, promotion, advertising, distribution, post-approval monitoring and reporting, marketing and export and import of products such as those we develop. Any pharmaceutical candidate that we develop must be approved by the FDA before it may be legally marketed in the United States and by the appropriate foreign regulatory agency before it may be legally marketed in foreign countries.

United States Drug Development Process

In the United States, the FDA regulates drugs under the Federal Food, Drug and Cosmetic Act, or FDCA, and implementing regulations. Drugs are also subject to other federal, state and local statutes and regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources. Failure to comply with the applicable United States requirements at any time during the product development process, approval process or after approval, may subject an applicant to administrative or judicial sanctions. FDA sanctions could include refusal to approve pending applications, withdrawal of an approval, a clinical hold, warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement or civil or criminal penalties. Any agency or judicial enforcement action could have a material adverse effect on us.

The process required by the FDA before a drug may be marketed in the United States generally involves the following:

- Completion of preclinical laboratory tests, animal studies and formulation studies according to Good Laboratory Practice, or GLPs, or other applicable regulations;
- Submission to the FDA of an Investigational New Drug Application, or an IND, which must become effective before human clinical trials may begin;
- Performance of adequate and well-controlled human clinical trials according to the FDA's current Good Clinical Practice, or GCPs, to establish the safety and efficacy of the proposed drug for its intended use;

- Submission to the FDA of a New Drug Application, or an NDA, for a new drug product;
- Satisfactory completion of an FDA inspection of the manufacturing facility or facilities where the drug is to be produced to assess compliance with the FDA's current Good Manufacturing Practice standards, or cGMP, to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity;
- Potential FDA audit of the nonclinical and clinical trial sites that generated the data in support of the NDA; and
- FDA review and approval of the NDA.

The lengthy process of seeking required approvals, which can often take anywhere from six months from the time the NDA is filed if there is a priority review for a breakthrough therapy to twelve months for a standard review, and the continuing need for compliance with applicable statutes and regulations require the expenditure of substantial resources. There can be no certainty that approvals will be granted.

Before testing any compounds with potential therapeutic value in humans, the product candidate enters the preclinical testing stage. Preclinical tests include laboratory evaluations of product chemistry, toxicity and formulation, as well as animal studies to assess the potential safety and activity of the product candidate. The conduct of the preclinical tests must comply with GLP and other federal regulations and requirements. The sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and a proposed clinical protocol, to the FDA as part of the IND. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA places the clinical trial on a clinical hold within that 30-day time period. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. The FDA may also impose clinical holds on a drug at any time before or during clinical trials due to safety concerns or non-compliance. Accordingly, we cannot assure that submission of an IND will result in the FDA allowing clinical trials to begin, or that, once begun, issues will not arise that result in suspension or termination of such trial.

Clinical trials involve the administration of the product candidate to healthy volunteers or patients having the disease being studied under the supervision of qualified investigators, generally physicians not employed by or under the trial sponsor's control. Clinical trials are conducted under protocols detailing, among other things, the objectives of the clinical trial, dosing procedures, subject selection and exclusion criteria, and the parameters to be used to monitor subject safety. Each protocol must be submitted to the FDA as part of the IND. Clinical trials must be conducted in accordance with the FDA's GCP requirements. Further, each clinical trial must be reviewed and approved by an independent institutional review board, or IRB, at or servicing each institution at which the clinical trial will be conducted. An IRB is charged with protecting the welfare and rights of trial participants and considers such items as whether the risks to individuals participating in the clinical trials are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the informed consent form that must be provided to each clinical trial subject or his or her legal representative and must monitor the clinical trial until it is completed.

Human clinical trials prior to approval are typically conducted in three sequential phases that may overlap or be combined:

- *Phase 1*. The drug is initially introduced into healthy humans and tested for safety, dosage tolerance, absorption, metabolism, distribution and excretion. In the case of some products for severe or life-threatening diseases, especially when the product may be too inherently toxic to ethically administer to healthy volunteers, the initial human testing is often conducted only in patients having the specific disease.
- *Phase 2*. The drug is evaluated in a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance, optimal dosage and dosing schedule for patients having the specific disease.
- *Phase 3*. Clinical trials are undertaken to further evaluate dosage, clinical efficacy and safety in an expanded patient population at geographically dispersed clinical trial sites. These clinical trials, which usually involve more patients than earlier trials, are intended to establish the overall risk/benefit ratio of the product and provide an adequate basis for product labeling. Generally, at least two adequate and well-controlled Phase 3 clinical trials are required by the FDA for approval of an NDA.

Post-approval studies, or Phase 4 clinical trials, may be conducted after initial marketing approval. These studies are used to gain additional experience from the treatment of patients in the intended therapeutic indication and may be required by the FDA as part of the approval process.

Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and written IND safety reports must be submitted to the FDA by the investigators for serious and unexpected adverse events or any finding from tests in laboratory animals that suggests a significant risk for human patients. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, if at all. The FDA, or the sponsor or its data safety monitoring board, may suspend a clinical trial at any time on various grounds, including a finding that the research patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is

not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients.

Concurrent with clinical trials, companies usually complete additional animal studies and develop additional information about the chemistry and physical characteristics of the drug as well as finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, must include methods for testing the identity, strength, quality and purity of the final drug. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

U.S. Review and Approval Processes

The results of product development, preclinical studies and clinical trials, along with descriptions of the manufacturing process, analytical tests conducted on the chemistry of the drug, proposed labeling and other relevant information are submitted to the FDA as part of an NDA requesting approval to market the product. The submission of an NDA is subject to the payment of substantial user fees by the applicant; a waiver of such fees may be obtained under certain limited circumstances.

In addition, under the Pediatric Research Equity Act, or PREA, an NDA or supplement to an NDA must contain data to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may grant deferrals for submission of pediatric data or full or partial waivers.

The FDA reviews all NDAs submitted before it accepts them for filing and may request additional information rather than accepting an NDA for filing. Once the submission is accepted for filing, the FDA begins an in-depth review of the NDA. Under the goals and policies agreed to by the FDA under the Prescription Drug User Fee Act, or PDUFA, the FDA has twelve months in which to complete its initial review of a standard NDA and respond to the applicant, and six months for a priority NDA. The FDA does not always meet its PDUFA goal dates for standard and priority NDAs.

After the NDA submission is accepted for filing, the FDA reviews the NDA to determine, among other things, whether the proposed product is safe and effective for its intended use and whether the product is being manufactured in accordance with cGMP to assure and preserve the product's identity, strength, quality and purity. In addition to its own review, the FDA may refer applications for novel drug products or drug products that present difficult questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and 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. During the approval process, the FDA also will determine whether a Risk Evaluation and Mitigation Strategy, or REMS, is necessary to assure the safe use of the drug. If the FDA concludes that a REMS is needed, the sponsor of the NDA must submit a proposed REMS; the FDA will not approve the NDA without a REMS, if required.

Before approving an NDA, the FDA will inspect the facilities at which the product is to be manufactured. The FDA will not approve the product unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and are 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. If the FDA determines that the application, manufacturing process or manufacturing facilities are not acceptable it will outline the deficiencies in the submission and often will request additional testing or information.

The NDA review and approval process is lengthy and difficult, and the FDA may refuse to approve an NDA if the applicable regulatory criteria are not satisfied or may require additional clinical data or other data and information. Even if such data and information is submitted, the FDA may ultimately decide that the NDA does not satisfy the criteria for approval. Data obtained from clinical trials are not always conclusive and may be susceptible to varying interpretations, which could delay, limit or prevent regulatory approval. The FDA will issue a "complete response" letter if the agency decides not to approve the NDA. The complete response letter usually describes all of the specific deficiencies in the NDA identified by the FDA. The deficiencies identified may be minor, for example, requiring labeling changes, or major, for example, requiring additional clinical trials. Additionally, the complete response letter may include recommended actions that the applicant might take to place the application in a condition for approval. If a complete response letter is issued, the applicant may either resubmit the NDA, addressing all of the deficiencies identified in the letter, or withdraw the application.

If a product receives regulatory approval, the approval may be limited to specific diseases and dosages or the indications for use may otherwise be limited, which could restrict the commercial value of the product. Further, the FDA may require that certain contraindications, warnings or precautions be included in the product labeling. In addition, the FDA may require Phase 4 testing, which involves clinical trials designed to further assess a product's safety and effectiveness and may require testing and surveillance programs to monitor the safety of approved products that have been commercialized.

Expedited Development and Review Programs

The FDA has four programs intended to expedite the development and review of new drugs addressing unmet medical needs or treating serious or life-threatening conditions: fast track, breakthrough therapy, priority review, and accelerated approval, in addition to emergency use authorization in situations such as the COVID-19 pandemic.

The FDA "fast track" program is intended to expedite or facilitate the process for reviewing new products to treat serious or life-threatening conditions and address unmet medical needs. Fast track designation applies to the combination of the product and the specific indication for which it is being studied. Under the fast track program, the sponsor will have more frequent interactions with the FDA during drug development, and may also submit sections of the NDA on a rolling basis to the FDA for review before submitting the complete application. Fast track does not guarantee that a product will be reviewed more quickly or receive FDA approval.

The FDA "breakthrough therapy" program is intended to expedite the development and review of drugs for serious or life-threatening conditions. Preliminary clinical evidence must show that the drug may have substantial improvement over existing therapies on one or more clinically significant endpoints. Although the drug does not have to address an unmet medical need, designation of breakthrough therapy status carries all the "fast track" program features. Additionally, the breakthrough therapy program entitles the sponsor to earlier and more frequent interaction with the FDA review team regarding development of nonclinical and clinical data, and allows the FDA to offer product development and regulatory advice necessary to shorten the time for product approval. The breakthrough therapy status does not guarantee a quicker development or review of the product, and does not ensure FDA approval.

The FDA also has a "priority review" program for products offering significant improvement in the treatment, diagnosis or prevention of a disease. The goal of the priority review program is to shorten the review period to six months from the ten months required for standard review. Any drug with breakthrough therapy, accelerated approval designation, or fast track can be granted priority review if it meets the necessary criteria.

The FDA "accelerated approval" program is intended to expedite the development and review of products with the potential to treat serious or life-threatening illnesses and provide meaningful therapeutic benefit over existing treatments. The program allows approval of a product on the basis of adequate and well-controlled clinical studies establishing that the product has an effect on a surrogate endpoint that is reasonably likely to predict a clinical benefit, or on the basis of an effect on a clinical endpoint that can be measured earlier than survival or irreversible morbidity. As a condition of approval, the FDA generally requires that a sponsor of the product perform adequate and well-controlled post-marketing clinical studies to establish safety and efficacy for the approved indication. Failure to conduct such studies or failure of the studies to establish required safety and efficacy may result in revocation of approval. The FDA also requires, as a condition for accelerated approval, pre-approval of promotional materials, which could adversely impact the timing of the commercial launch or subsequent marketing of the product.

The FDA may also allow the use of unapproved medical products, or unapproved uses of approved medical products, under an emergency use authorization ("EUA") to diagnose, treat, or prevent serious or life-threatening diseases or conditions when certain statutory criteria have been met, including that there are no adequate, approved, and available alternatives. An EUA is a mechanism to facilitate the availability and use of medical countermeasures during public health emergencies, such as the COVID-19 pandemic. Once submitted, the FDA will evaluate an EUA request and determine whether the relevant statutory criteria are met, taking into account the totality of the scientific evidence about the drug that is available to FDA. EUAs can be terminated, revoked or reissued, depending on the state of the public health emergency and new data about the drug.

Post-Approval Requirements

Any drug products for which we receive FDA approvals are subject to continuing regulation by the FDA. Certain requirements include, among other things, record-keeping requirements, reporting of adverse experiences with the product, providing the FDA with updated safety and efficacy information on an annual basis or more frequently for specific events, product sampling and distribution requirements, complying with certain electronic records and signature requirements and complying with FDA promotion and advertising requirements. These promotion and advertising requirements include, among others, standards for direct-to-consumer advertising, prohibitions against promoting drugs for uses or in patient populations that are not described in the drug's approved labeling (known as "off-label use"), rules for conducting industry-sponsored scientific and educational activities and promotional activities involving the internet. Failure to comply with FDA requirements can have negative consequences, including the immediate discontinuation of noncomplying materials, adverse publicity, enforcement letters from the FDA, mandated corrective advertising or communications with doctors, and civil or criminal penalties. Although physicians may prescribe legally available drugs for off-label uses, manufacturers may not market or promote such off-label uses.

We rely, and expect to continue to rely, on third parties for the production of clinical and commercial quantities of our product candidates. Manufacturers of our product candidates are required to comply with applicable FDA manufacturing requirements contained in the FDA's cGMP regulations. These regulations require, among other things, quality control and quality assurance as well as the corresponding maintenance of comprehensive records and documentation. Drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are also required to register their establishments and list any products they make with the FDA and to comply with related requirements in certain states. These entities are further subject to periodic unannounced

inspections by the FDA and certain state agencies for compliance with cGMP and other laws. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain cGMP compliance. Discovery of problems with a product after approval may result in serious and extensive restrictions on a product, manufacturer or holder of an approved NDA. These restrictions may include suspension of a product until the FDA is assured that quality standards can be met, continuing oversight of manufacturing by the FDA under a "consent decree," which frequently includes the imposition of costs and continuing inspections over a period of many years, as well as possible withdrawal of the product from the market. In addition, changes to the manufacturing process generally require prior FDA approval before being implemented. Other types of changes to the approved product, such as adding new indications and additional labeling claims, are also subject to further FDA review and approval.

The FDA also may require post-marketing testing, known as Phase 4 testing, as well as risk minimization action plans and surveillance to monitor the effects of an approved product or place conditions on an approval that could otherwise restrict the distribution or use of the product.

U.S. Patent Term Restoration and Marketing Exclusivity

Drug Price Competition and Patent Term Restoration Act of 1984

Depending upon the timing, duration and specifics of the FDA approval of the use of our product candidates, some of our United States patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years as compensation for patent term lost during federal regulatory review preceding the FDA regulatory review process. However, patent term restoration cannot extend the remaining term of a patent beyond a total of 14 years from the product's approval date. The patent term restoration period is generally one-half the time between the effective date of an IND and the submission date of an NDA plus the time between the submission date of an NDA and the approval of that application. Only one patent applicable to an approved drug is eligible for the extension and the application for the extension must be submitted within 60 days of approval, prior to the expiration of the patent. The United States Patent and Trademark Office, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration. In the future, we may apply for restoration of patent term for one of our currently owned or licensed patents to add patent life beyond its current expiration date, depending on the expected length of the clinical trials and other factors involved in the filing of the relevant NDA. However, there is no guarantee that any such application will be approved.

Federal Food, Drug and Cosmetic Act ("FDCA")

Market exclusivity provisions under the FDCA, which are independent of patent status and any patent related extensions, can also delay the submission or the approval of certain applications of other companies seeking to reference another company's NDA. If the new drug is a new chemical entity subject to an NDA, the FDCA provides a five-year period of non-patent marketing exclusivity within the United States to the first applicant to obtain approval of an NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or functional group of a molecule responsible for the action of the drug substance. During the exclusivity period, the FDA may not accept for review an abbreviated new drug application, or ANDA, or a so-called Section 505(b)(2) NDA, submitted by another company for another version of such drug where the applicant does not own or have a legal right of reference to all the data required for approval. However, such an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement to one of the patents listed with the FDA by the innovator NDA holder. The FDCA also provides three years of marketing exclusivity for an NDA, or supplement to an existing NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example new indications, dosages or strengths of an existing drug. This three-year exclusivity covers only the conditions associated with the new clinical investigations and does not prohibit the FDA from approving ANDAs for drugs containing the original active agent. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA. However, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness.

Other U.S. Healthcare Laws and Compliance Requirements

In the United States, our activities are potentially subject to regulation by various federal, state and local authorities in addition to the FDA, including the Centers for Medicare and Medicaid Services (formerly the Health Care Financing Administration), other divisions of the United States Department of Health and Human Services (*e.g.*, the Office of Inspector General), the United States Department of Justice and individual United States Attorney offices within the Department of Justice, state attorney generals and state and local governments. For example, sales, marketing and scientific/educational grant programs must comply with the anti-fraud and abuse provisions of the Social Security Act, the False Claims Act, the privacy and security provisions of the Health Insurance Portability and Accountability Act, or HIPAA, and similar state laws, each as amended. Pricing and rebate programs must comply with the Medicaid rebate requirements of the Omnibus Budget Reconciliation Act of 1990 and the Veterans Health Care Act of 1992, each as amended.

If products are made available to authorized users of the Federal Supply Schedule of the General Services Administration, additional laws and requirements apply. Under the Veterans Health Care Act, or VHCA, drug companies are required to offer certain pharmaceutical products at a reduced price to a number of federal agencies including the United States Department of Veterans Affairs and United States Department of Defense, the Public Health Service and certain private Public Health Service—designated entities in order to participate in other federal funding programs including Medicare and Medicaid. Recent legislative changes purport to require that discounted prices be offered for certain United States Department of Defense purchases for its TRICARE program via a rebate system. Participation under the VHCA requires submission of pricing data and calculation of discounts and rebates pursuant to complex statutory formulas, as well as the entry into government procurement contracts governed by the Federal Acquisition Regulations.

In order to distribute products commercially, we must comply with state laws that require the registration of manufacturers and wholesale distributors of pharmaceutical products in a state, including, in certain states, manufacturers and distributors who ship products into the state even if such manufacturers or distributors have no place of business within the state. Some states also impose requirements on manufacturers and distributors to establish the pedigree of product in the chain of distribution, including some states that require manufacturers and others to adopt new technology capable of tracking and tracing product as it moves through the distribution chain. Several states have enacted legislation requiring pharmaceutical companies to establish marketing compliance programs, file periodic reports with the state, make periodic public disclosures on sales, marketing, pricing, clinical trials and other activities, and/or register their sales representatives, as well as to prohibit pharmacies and other healthcare entities from providing certain physician prescribing data to pharmaceutical companies for use in sales and marketing, and to prohibit certain other sales and marketing practices. All of our activities are potentially subject to federal and state consumer protection and unfair competition laws.

Europe / Rest of World Government Regulation

In addition to regulations in the United States, we will be subject to a variety of regulations in other jurisdictions governing, among other things, clinical trials and any commercial sales and distribution of our products.

Whether or not we obtain FDA approval for a product, we must obtain the requisite approvals from regulatory authorities in foreign countries prior to the commencement of clinical trials or marketing of the product in those countries. Certain countries outside of the United States have a similar process that requires the submission of a clinical trial application much like the IND prior to the commencement of human clinical trials. In the European Union, for example, a clinical trial application, or CTA, must be submitted to each country's national health authority and an independent ethics committee, much like the FDA and IRB, respectively. Once the CTA is approved in accordance with a country's requirements, clinical trials may proceed.

The requirements and process governing the conduct of clinical trials, product licensing, pricing and reimbursement vary from country to country. In all cases, the clinical trials are conducted in accordance with International Conference on Harmonisation (ICH) / WHO Good Clinical Practice standards and the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki.

To obtain regulatory approval of an investigational drug under European Union regulatory systems, we must submit a marketing authorization application to the European Medicines Agency, or the EMA. The application used to file an NDA in the United States is similar to that required in the European Union, with the exception of, among other things, country-specific document requirements.

For other countries outside of the European Union, such as countries in Eastern Europe, Latin America or Asia, the requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary from country to country. In all cases, again, the clinical trials are conducted in accordance with GCPs and the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki.

If we fail to comply with applicable foreign regulatory requirements, we may be subject to, among other things, fines, suspension or withdrawal of regulatory approvals, product recalls, seizure of products, operating restrictions and criminal prosecution.

Pharmaceutical Coverage, Pricing and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we obtain regulatory approval. In the United States and markets in other countries, sales of any products for which we receive regulatory approval for commercial sale will depend in part on the availability of reimbursement from third-party payors. Third-party payors include government health administrative authorities, managed care providers, private health insurers and other organizations. The process for determining whether a payor will provide coverage for a drug product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the drug product. Third-party payors may limit coverage to specific drug products on an approved list, or formulary, which might not include all of the FDA-approved drug products for a particular indication. Third-party payors are increasingly challenging the price and examining the medical necessity and cost-effectiveness of medical products and services, in addition to their safety and efficacy. We may need to conduct expensive pharmaco-economic studies in order to demonstrate the medical necessity and cost-effectiveness of our products, in addition to the costs required to obtain the FDA approvals. Our product candidates may not be considered medically necessary or cost-effective. A payor's decision to provide

coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development.

In 2003, the United States government enacted legislation providing a partial prescription drug benefit for Medicare recipients, which became effective at the beginning of 2006. Government payment for some of the costs of prescription drugs may increase demand for any products for which we receive marketing approval. However, to obtain payments under this program, we would be required to sell products to Medicare recipients through prescription drug plans operating pursuant to this legislation. These plans will likely negotiate discounted prices for our products. Federal, state and local governments in the United States continue to consider legislation to limit the growth of healthcare costs, including the cost of prescription drugs. Future legislation could limit payments for pharmaceuticals such as the product candidates that we are developing.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, collectively known as the Affordable Care Act ("ACA"), substantially changed the way healthcare is financed by both governmental and private insurers, and significantly impacted the pharmaceutical industry.

The comprehensive overhaul extended coverage to approximately 20 million previously uninsured Americans. Since its adoption, the ACA contains a number of provisions, including those governing enrollment in federal healthcare programs, reimbursement changes and fraud and abuse, which have affected existing government healthcare programs and have resulted in the development of new programs, including Medicare payment for performance initiatives and improvements to the physician quality reporting system and feedback program. Additionally, the Affordable Care Act, as limited by the United States Supreme Court's decision in June 2012:

- increases the minimum level of Medicaid rebates payable by manufacturers of brand-name drugs from 15.1% to 23.1%;
- requires collection of rebates for drugs paid by Medicaid managed care organizations;
- requires manufacturers to participate in a coverage gap discount program, under which they 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, beginning January 2011; and
- imposes a non-deductible annual fee on pharmaceutical manufacturers or importers who sell "branded prescription drugs" to specified federal government programs.

Several states have not implemented certain sections of the ACA, including 14 that have rejected the expansion of Medicaid eligibility for low-income citizens. While the United States Supreme Court recently rejected the latest challenge to the constitutionality of the ACA, it is possible that other legislative efforts may seek to modify it. In addition, other legislative changes have been proposed since the Affordable Care Act was enacted. There has been increasing legislative and enforcement interest in the United States with respect to drug pricing practices. Specifically, there have been several recent U.S. congressional inquiries and proposed bills designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs and reform government program reimbursement methodologies for drugs.

Different pricing and reimbursement schemes exist in other countries. In the European Union, governments influence the price of pharmaceutical products through their pricing and reimbursement rules and control of national healthcare systems that fund a large part of the cost of those products to consumers. Some jurisdictions operate positive and negative list systems under which products may only be marketed once a reimbursement price has been agreed. To obtain reimbursement or pricing approval, some of these countries may require the completion of clinical trials that compare the cost-effectiveness of a particular product candidate to currently available therapies. Other member states allow companies to fix their own prices for medicines but monitor and control company profits. The downward pressure on healthcare costs in general, particularly prescription drugs, has become very intense. As a result, increasingly high barriers are being erected to the entry of new products. In addition, in some countries, cross-border imports from low-priced markets exert a commercial pressure on pricing within a country.

The marketability of any drug candidates for which we receive regulatory approval for commercial sale may suffer if the government and third-party payers fail to provide adequate coverage and reimbursement. In addition, emphasis on managed care in the United States has increased and we expect will continue to increase the pressure on pharmaceutical drug pricing. 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 we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

Research and Development

Our research and development expenses were $174.1 million, $136.8 million and $142.2 million for the fiscal years ended September 30, 2021, 2020, and 2019, respectively.

Manufacturing

We do not have our own manufacturing capabilities, except with respect to limited amounts of active pharmaceutical ingredients needed for preclinical development. To date, we have relied on third-party manufacturers, including manufacturers in China, for supply of active pharmaceutical ingredients and ingredients for use in clinical trials of our product candidates. We also expect that in the future we will rely on such manufacturers to produce commercial quantities of any product candidates that we commercialize ourselves. Manufacturing for glecaprevir is conducted by AbbVie. Wherever possible, we seek to identify multiple suppliers for raw materials and key intermediaries to be used in our manufacturing process.

Sales and Marketing

We currently do not have any commercialization or sales and marketing capabilities, and currently have no fixed plans to invest in or build such capabilities internally. We have partnered our protease inhibitor compounds for HCV with AbbVie. We may also partner or collaborate with, or license commercial rights to, other larger pharmaceutical or biopharmaceutical companies to support the development of one or more of our wholly-owned product candidates through late-stage clinical development and, if successful, commercialization. However, we still retain all commercial rights to our independent programs and we will continue to evaluate our alternatives for commercializing them once they are more advanced in their clinical development.

Our Corporate Information

We are a Delaware corporation, incorporated in 1995. Our principal executive offices are located at 500 Arsenal Street, Watertown, Massachusetts 02472, and our telephone number is (617) 607-0800. Our web site address is http://www.enanta.com.

Segment Information

We provide segment information in Note 2 to our Consolidated Financial Statements included in Item 8 of this report. We are incorporating that information into this section by this reference.

Human Capital Resources

As of September 30, 2021, we had 155 full-time employees, 78 of whom hold Ph.D. or M.D. degrees and an additional 36 of whom hold a masters degree or other post-graduate degree. We consider the intellectual capital of our employees to be an essential driver of our business and key to our future prospects. Historically we have had relatively low turnover of employees, but as our headcount has grown in the past three years and the number of biotechnology and pharmaceutical companies in the Boston area has increased dramatically, we have experienced an increase in the number of employees leaving for other opportunities. Given our financial resources and our track record, we continue to be able to fill the vacated positions and grow our headcount in support of our expanding pipeline of research programs and product candidates. We also monitor our compensation programs closely and provide what we consider to be a very competitive mix of compensation and insurance benefits for all our employees, as well as participation in our equity programs. None of our employees is subject to a collective bargaining agreement or represented by a trade or labor union. We consider our relations with our employees to be good.

Available Information

Our Internet website address is http://www.enanta.com. Through our website, we make available, free of charge, our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to those reports, as well as proxy statements, and, from time to time, other documents as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission, or SEC. These SEC reports can be accessed through the “Investors” section of our website. The information found on our website is not part of this or any other report we file with or furnish to the SEC.

In addition, the SEC maintains an Internet website that contains reports, proxy and information statements, and other information regarding Enanta Pharmaceuticals, Inc. and other issuers that file electronically with the SEC. The SEC’s Internet website address is http://www.sec.gov.

ITEM 1A. RISK FACTORS

RISK FACTORS

Our business faces significant risks and uncertainties. Certain factors may have a material adverse effect on our business prospects, financial condition and results of operations, and you should carefully consider them. Accordingly, in evaluating our business, we encourage you to consider the following discussion of risk factors, in its entirety, in addition to other information contained in or incorporated by reference into this Annual Report on Form 10-K and our other public filings with the SEC. Other events that we do not currently anticipate or that we currently deem immaterial may also affect our business, prospects, financial condition and results of operations.

Risks Related to Our Business

Our financial prospects for the next several years are dependent upon AbbVie's success selling MAVYRET/MAVIRET, which includes our protease inhibitor, glecaprevir, for the treatment of HCV. AbbVie may continue to experience lower sales volume in future quarters due to a reduction in diagnoses and treatment of HCV, which could adversely affect our business.

We rely on AbbVie to commercialize its regimen containing glecaprevir (our second protease inhibitor, which is one of the two DAAs in AbbVie's MAVYRET/MAVIRET treatment), over which we have granted AbbVie complete control. Our ability to continue to generate revenue in the short term will depend primarily on the success of AbbVie's efforts to maintain sales of MAVYRET/MAVIRET. Such success is subject to uncertainty, and we have no control over the resources, time and effort that AbbVie may devote to sales of this regimen. Any of several events or factors could have a material adverse effect on our ability to continue to generate revenue from AbbVie's sales of MAVYRET/MAVIRET. For example, AbbVie:

- may continue to experience lower sales volume in future quarters due to a reduction in diagnoses and treatment of HCV if doctor visits and other routine healthcare activities remain at below normal levels as a result of the COVID-19 pandemic;
- may not maintain satisfactory levels of prescriptions by physicians and reimbursement by third-party payors for the MAVYRET/MAVIRET regimen in the various markets of the world where it is being sold;
- may not compete successfully with its MAVYRET/MAVIRET regimen against other products and therapies for HCV, including competition for exclusive arrangements with third-party payors and governmental entities as well as price competition;
- may have to comply with additional requests and recommendations from the FDA, including label restrictions for its regimen containing glecaprevir;
- may not obtain all commercially necessary reimbursement approvals;
- may not commit sufficient resources to the marketing and distribution of MAVYRET/MAVIRET, whether for competitive or strategic reasons or otherwise due to a change in business priorities;
- may cease to perform its obligations under the terms of our collaboration agreement; and
- may unilaterally terminate our collaboration agreement on specified prior notice without any reason and without any further commitment.

We do not have access to all information regarding AbbVie's MAVYRET/MAVIRET, including certain information about spontaneous safety reports for any marketed product, regulatory affairs, process development, manufacturing, marketing, sales and other areas known by AbbVie. Thus, our ability to keep our stockholders informed about the status of the marketed products licensed under our collaboration is limited by the degree to which AbbVie keeps us informed. If AbbVie does not perform in the manner we expect or fulfill its responsibilities in a timely manner, or at all, the global commercialization of MAVYRET/MAVIRET could be terminated in selected jurisdictions or be commercially unsuccessful. In addition, AbbVie has the right to make decisions regarding the commercialization of licensed products without consulting us. For example, in 2018 AbbVie entered into a royalty-free licensing agreement with the Medicines Patent Pool to accelerate access to generic versions of MAVYRET/MAVIRET in 99 low- and middle-income countries and territories. AbbVie may also make decisions with which we do not agree. If AbbVie acts in a manner that is not in our best interest, then it could adversely affect our business and prospects.

Our royalty revenues are derived from AbbVie's net sales of its MAVYRET/MAVIRET regimen for HCV. If AbbVie is unable to maintain sales of this regimen at or above current levels of sales, our royalty revenues will be adversely affected.

AbbVie's MAVYRET/MAVIRET regimen continues to be the leading HCV treatment in the U.S. and several market geographies in developed countries where it is approved. While commercialization of this regimen is exclusively in AbbVie's control without any required input from us, we believe it is possible that prices will decline further due to payors obtaining additional discounts or

competitive market dynamics. For example, the states of Louisiana and Washington have negotiated a blanket price for one of the HCV drug companies to treat all patients in one or more state programs (e.g. Medicaid). Gilead was awarded the contract in Louisiana and AbbVie was awarded the contract in Washington. In addition, Gilead has been able to access the Medicaid market at a lower price point to build its market share by using an authorized generic version of its HCV regimen branded as Epclusa®. It is unknown whether these programs or other programs that states may adopt could have any further impact on MAVYRET/MAVIRET sales. There may also be fluctuations in AbbVie's market share over time due to these and other competitive actions by Gilead.
In addition, in light of continued fiscal crises experienced by several countries in the European Union and Japan, governments have announced or implemented measures to manage and reduce healthcare expenditures. AbbVie may experience global pricing pressure for its MAVYRET/MAVIRET regimen from such measures, which may be reflected in larger discounts or rebates on its regimens or delayed reimbursement. Also, private and public payors may choose to exclude AbbVie's MAVYRET/MAVIRET regimen from their formulary coverage lists or limit the types of patients for whom coverage will be provided. Any such change in formulary coverage, discounts or rebates or reimbursement for MAVYRET/MAVIRET would negatively affect the demand for this regimen and our royalty revenue derived from its sales.

Furthermore, we expect that the COVID-19 pandemic will continue to adversely affect AbbVie's sales of MAVYRET/MAVIRET in the United States and the rest of the world if healthcare systems continue to experience varying levels of shut-down and diagnoses and treatment rates of HCV infections remain at below-normal levels. At this point in time we do not know the extent and duration of this adverse effect. We note, however, that the HCV patient pool will continue to carry the viral infection until treated.

We and AbbVie face substantial competition in the markets for HCV drugs, and there are many companies developing potential therapies for RSV, HBV, SARS-CoV-2 and hMPV which may result in others discovering, developing or commercializing products before we do or doing so more successfully than we do.

The pharmaceutical and biotechnology industries are intensely competitive and rapidly changing. Many large pharmaceutical and biotechnology companies, academic institutions, governmental agencies and other public and private research organizations are commercializing or pursuing the development of products that target HCV, RSV, HBV, SARS-CoV-2 and hMPV and other viral infections or diseases that we may target in the future. Many of our competitors have substantially greater commercial infrastructure and greater financial, technical and personnel resources than we have, as well as drug candidates in late-stage clinical development.

In all the disease areas currently under the focus of our research and development efforts, there are other companies with product candidates that are more advanced than ours. Our competitors may succeed in developing these product candidates or others and obtaining regulatory approval before we can do so with any of our product candidates. If we are not "first to market" with one of our product candidates in one or more of these disease indications, our competitive position could be compromised because it may be more difficult for us to obtain marketing approval for that product candidate and market acceptance of that product candidate as a follow-on competitor. In addition, any new product that competes with an approved product typically must demonstrate compelling advantages in efficacy, convenience, tolerability or safety, or some combination of these factors, in order to gain regulatory approvals, overcome price competition and be commercially successful.

We expect AbbVie's MAVYRET/MAVIRET to continue to face intense competition due to existing approved products in the HCV market. AbbVie's MAVYRET/MAVIRET regimen currently faces competition in various world markets and subpopulations of HCV from Gilead's Epclusa® (a fixed dose combination of sofosbuvir and velpatasvir), Vosevi® (a triple combination therapy of sofosbuvir, velpatasvir and voxilaprevir approved by the FDA for specified sofosbuvir -treatment failures and NS5A-inhibitor treatment failures) and Harvoni® (a fixed-dose combination of sofosbuvir and ledipasvir); and to a lesser extent - Merck's Zepatier® (a fixed-dose combination of grazoprevir and elbasvir). Gilead launched authorized generic versions of Epclusa and Harvoni through its subsidiary, Asegua Therapeutics, LLC, which have had an impact on the competitive landscape. For example, the state of Louisiana selected Asegua as their HCV subscription model pharmaceutical partner to provide the state with unrestricted access to its direct-acting antiviral medication.

Other competitive products in the form of other treatment methods or a vaccine for HCV may render MAVYRET/MAVIRET obsolete or noncompetitive. MAVYRET/MAVIRET will face competition based on its safety and effectiveness, reimbursement coverage, price, patent position, AbbVie's marketing and sales capabilities, and other factors. If MAVYRET/MAVIRET faces competition from generic products other than authorized generic versions by the manufacturer of the branded product (i.e. Gilead and Asegua Therapeutics), our collaboration agreement provides that the royalty rate applicable to our protease product contained in the regimen is reduced significantly by a specified percentage on a product-by-product, country-by-country basis. If AbbVie is not able to compete effectively against its competitors in HCV, our business will not grow and our financial condition, operations and stock price will suffer.

Similarly, HBV, RSV and COVID-19 represent competitive therapeutic areas. While there are antiviral medications prescribed for HBV that can suppress HBV DNA, they generally have low cure rates, resulting in the need for lifelong treatment. Many companies are seeking to develop new HBV drugs that alone or in combination with other mechanisms could lead to a functional cure of HBV. Altimmune, Antios, Arbutus, Ascletis, Assembly, GIGB, Gilead, Green Cross, GSK/Ionis, HEC Pharma, Johnson & Johnson/Janssen, Replicor, Roche, Tasly, Vaccitech, VBI Vaccines and Vir Biotechnology have Phase 2 programs in progress, with many of these

companies conducting earlier stage programs as well. In addition, a number of companies have Phase 1 or earlier stage HBV programs.

For RSV, there are currently no safe and effective therapies for already established RSV infection. Several companies are seeking to develop antiviral treatments for RSV infection in adult and pediatric patients. Ark Biosciences, Johnson & Johnson and ReViral each have compounds in clinical development. A prophylactic, monoclonal-antibody-based treatment from MedImmune, which is commercialized by AbbVie outside the U.S., is approved for infants considered at high risk for RSV infection; however, studies have found that most young children with RSV infection were previously healthy, and thus would not normally be prescribed prophylactic treatment. AstraZeneca/Sanofi and Merck are developing long-acting versions of the monoclonal antibody for prophylaxis use in infants. In addition, a number of companies have RSV vaccines in development, primarily directed at prevention of RSV infection, and some companies are also evaluating vaccines in a therapeutic mode for treatment of established RSV infection.

There are some companies developing oral antivirals for SARS-CoV-2 that are currently in Phase 2/3 registrational studies including Atea/Roche, Merck/Ridgeback, Pfizer and Shionogi, Toyama as well as compounds in Phase 1 studies, including those from Pardes and Selva.

If we are not able to develop new products that can compete effectively against our current and future competitors, our business will not grow and our financial condition, operations and stock price will suffer.

The ongoing COVID-19 pandemic has had an impact on our business operations and clinical trials and could continue, directly or indirectly, to adversely affect our business, results of operations and financial condition and our stock price.

The COVID-19 pandemic has had an impact on our business operations and we continue to monitor applicable government recommendations. We had to make modifications to our normal operations because of the COVID-19 pandemic, including allowing certain of our employees to work remotely and conducting our laboratory operations at reduced capacity. Now that almost all of our employees are vaccinated and levels of COVID-19 infection in Eastern Massachusetts have declined substantially, we have our laboratory operations back at full capacity and other operations have started to return to more on-site activity. Notwithstanding these recent trends, the COVID-19 pandemic, including insufficient vaccination of the general population and the emergence of new SARS-CoV-2 variants, including the delta variant, could affect the health and availability of our workforce as well as those of the third parties whom we are relying on to take similar measures. As a result, we may experience new disruptions to our business operations and our business could be materially adversely affected further, directly or indirectly, by the ongoing COVID-19 pandemic, which has spread to the countries in which we, our contract manufacturers, our preclinical and clinical research contractors and our collaborators in clinical research do business. National, state and local governments in affected regions have implemented and may continue to implement varying safety precautions, including quarantines, border closures, increased border controls, travel restrictions, shelter-in-place orders and shutdowns, business closures, cancellations of public gatherings and other measures. Organizations and individuals may continue to take additional steps to avoid or reduce infection, including limiting travel and staying home from work. These measures may continue to disrupt normal business operations both inside and outside of affected areas and have had significant negative impacts on healthcare and other businesses worldwide.

The extent and severity of the impact on our business and clinical trials will be determined largely by the extent of disruptions in the supply chains for our research and clinical trial materials, delays in the conduct and recruitment of current and future clinical trials and reductions in the number of patients accessing AbbVie's HCV regimens. For example, we paused recruitment for our Phase 2b ARGON-2 study of EDP-305 in NASH patients and Part 2 of our Phase 1a/1b study of EDP-514 in NUC-suppressed HBV patients in March 2020, but we were able to resume recruitment of these studies in July 2020. In addition, the public health response to the COVID-19 pandemic, including lock-downs, mask mandates, social distancing and other mitigation steps to manage the COVID-19 pandemic have significantly reduced the incidence of RSV and other respiratory illnesses worldwide. We have made extensive efforts to expand our clinical sites beyond North America, including sites across Europe, the Asia-Pacific and the Southern Hemisphere, to be ready when RSV infection fully re-emerges, but we cannot predict when that may occur. These impacts of COVID-19 could continue to affect the future course of our RSV studies and our other ongoing clinical trials and delay their timelines.

During 2021 and 2020, COVID-19 has also impacted new HCV patient starts in both the United States and the rest of the world, resulting in a decline in sales of HCV treatments. While new HCV infections are continuing, at this time it is uncertain when and the extent to which treatment of new HCV patients and revenues will return to pre-COVID-19 levels.

In addition, the impact of the COVID-19 pandemic on the operations of the FDA and other health authorities may delay potential approvals of our clinical trial protocols.

Although it is not possible at this time to estimate the entirety of the impact that the COVID-19 pandemic will have on our business, operations and employees, our contract manufacturers, our preclinical and clinical research contractors, and our collaborators in clinical research, any continued spread of COVID-19, measures taken by governments, actions taken to protect employees from this disease, and the broad impact of the pandemic on all business activities, may materially and adversely affect our business, results of

operations and financial condition and our stock price. Additionally, as new, more infectious variants emerge, it is possible that the impact of the pandemic on our business may increase or lengthen in duration.

We have not developed independently any approved products and we have limited clinical development experience, which makes it difficult to assess our ability to develop and commercialize our product candidates.

AbbVie has been responsible for all of the clinical development of our HCV protease inhibitor products. We have not yet demonstrated an ability to address successfully many of the risks and uncertainties associated with late-stage clinical development, regulatory approval and commercialization of therapeutic products such as the ones we plan to develop independently. For example, to execute our business plan for the development of our independent RSV and HBV programs, we will need to successfully:

- execute clinical development of our product candidates and demonstrate acceptable safety and efficacy for them alone or in combination with other drugs or drug candidates;
- obtain required regulatory approvals for the development and commercialization of our product candidates;
- develop and maintain any future collaborations we may enter into for any of these programs;
- obtain and maintain patent protection for our product candidates and freedom from infringement of intellectual property of others;
- establish acceptable commercial manufacturing arrangements with third-party manufacturers;
- build and maintain robust sales, distribution and marketing capabilities, either independently or in collaboration with future collaborators;
- gain market acceptance for our product candidates among physicians, payors and patients; and
- manage our spending as costs and expenses increase due to clinical trials, regulatory approvals and commercialization.

If we are unsuccessful in accomplishing these objectives, we may not be able to successfully develop and commercialize our product candidates and expand our business or continue our operations.

If we are not successful in developing EDP-938, EDP-514, and/or EDP-235, or in discovering further product candidates, our ability to expand our business and achieve our strategic objectives will be impaired.

Much of our internal research is at preclinical stages. Research programs designed to identify product candidates require substantial technical, financial and human resources, whether or not any product candidates are ultimately identified. Our research programs may initially show promise in identifying additional potential product candidates, yet fail to yield product candidates for clinical development or commercialization for many reasons, including the following:

- the research methodology used may not be successful in identifying additional potential product candidates;
- competitors may develop alternatives that render our product candidates less commercially viable or obsolete;
- competitors may obtain intellectual property protection that effectively prevents us from developing a product candidate;
- a product candidate may, on further study, be shown not to be an effective treatment in humans or to have harmful side effects or other characteristics that indicate it is unlikely to be effective or otherwise does not meet applicable regulatory criteria; and
- a product candidate may not be capable of being produced in commercial quantities at an acceptable cost, or at all.

Additional drug candidates that we may develop will require significant research, preclinical and clinical studies, regulatory approvals and commitments of resources before they can be commercialized. We cannot give assurance that our research will lead to the discovery of any additional drug candidates that will generate additional revenue for us. If we are unable to identify additional compounds suitable for preclinical and clinical development, we may not be able to obtain sufficient product revenue in future periods, which likely would result in significant harm to our financial position and adversely impact our stock price.

We reported a net loss for the fiscal years ended September 30, 2021 and 2020 primarily due to the impact of COVID-19 on our royalty revenues and increased levels of research and development expense as we progress our wholly-owned programs. Continued changes in royalty revenue earned under our AbbVie agreement or changes in the level of expenses associated with development of our product candidates, or both, may cause our results of operations to fluctuate from period to period. Any continuation of the recent trend of reducing royalty revenue, combined with increasing research and development expenses in support of our

advancing programs, will result in continued operating losses in the coming year and in future periods unless we develop other sources of revenue.

As discussed above, our principal source of revenue continues to be our royalty revenue earned under the AbbVie collaboration agreement. There is uncertainty regarding this future revenue stream given the competitive nature of the market for HCV therapies, which reflects price competition, the changing nature of payer contracts of AbbVie and others, the varying rates of reimbursement in different countries and the impact of the COVID-19 pandemic on AbbVie's HCV sales. Changes in royalty revenue earned under the AbbVie collaboration agreement, including those that occur from period to period due to the annually tiered structure of our royalties, may cause our revenues and operating results to fluctuate significantly from quarter to quarter and could have an adverse effect on our stock price.

Additionally, many of the preclinical and clinical development activities required for our product candidates must be contracted out to contract research organizations, or CROs, at significant expense. We expect these expenses to increase substantially in the coming years as we advance compounds and conduct more clinical studies. However, the global impact of COVID-19 has had, and is likely to continue to have, an adverse effect on the ability of our CROs to conduct preclinical and clinical studies. At this point in time we do not know to what extent these studies will be impacted by the pandemic. Therefore, now more than ever it is difficult to accurately predict the timing and amounts of these expenses, and we expect that they will vary from quarter to quarter. In addition, the FDA or other regulatory agencies may require more preclinical or clinical testing than we originally anticipated for any of our product candidates. We may also be required to purchase expensive competitor drugs for use in our trials, either to demonstrate potential treatment combinations or as comparators to our product candidates. We also conduct clinical development activities outside the U.S. and are therefore exposed to foreign currency fluctuations for payments made to CROs in currencies other than the U.S. dollar. As a result, the expenses of our development programs and our operating results may fluctuate significantly from quarter to quarter. If combined with any continuation of the recent trend of reduced royalty revenue, such a trend would likely result in operating losses in the coming year and in future periods, unless we develop other sources of revenue.

If we fail to attract and keep senior management and key scientific personnel, we may be unable to successfully develop our product candidates, conduct our clinical trials and commercialize our product candidates.

Our success depends in part on our continued ability to attract, retain and motivate highly qualified management, clinical and scientific personnel. We are highly dependent upon our senior management, particularly Jay R. Luly, Ph.D., our Chief Executive Officer and President, Yat Sun Or, Ph.D., our Senior Vice President, Research and Development and Chief Scientific Officer, as well as other employees and consultants. For example, Nathalie Adda, M.D., our Senior Vice President and Chief Medical Officer, has announced that she will be retiring in February 2022, and she has agreed to be available on a consulting basis for a brief period thereafter. While we have initiated a search for her replacement, it is uncertain when we will recruit that person. Although neither Dr. Luly nor Dr. Or has informed us to date that either individual expects to retire or resign in the near future, the loss of the services of either of these individuals or one or more of our other members of senior management could delay or prevent the successful development of our product candidates.

While we have not historically experienced unique difficulties attracting and retaining qualified employees, we could experience such problems in the future. For example, competition for qualified personnel in the biotechnology and pharmaceutical fields is intense. In addition, we will need to hire additional personnel as we expand our clinical development and ultimately seek regulatory approvals and prepare for commercial activities. We may not be able to attract and retain quality personnel on acceptable terms.

We may encounter difficulties in managing our growth and expanding our operations successfully.

As we expand our research efforts and seek to advance our product candidates through clinical trials, we will need to expand our development, regulatory, manufacturing, marketing and sales capabilities or contract with third parties to obtain these capabilities. As our operations expand, we expect that we will need to manage additional relationships with various strategic partners, suppliers and other third parties. Future growth will impose significant added responsibilities on members of management. Our future financial performance and our ability to commercialize our product candidates and to compete effectively will depend, in part, on our ability to manage any future growth effectively. To that end, we must be able to manage our development efforts and clinical trials effectively and hire, train and integrate additional management, administrative and sales and marketing personnel. We may not be able to accomplish these tasks, and our failure to accomplish any of them could prevent us from successfully growing our company.

We may require substantial additional financing in the longer term to achieve our goals if the sales of MAVYRET/MAVIRET decline substantially. A failure to obtain this necessary capital when needed could force us to delay, limit, reduce or terminate some or all of our product development efforts.

Since our inception, most of our resources have been dedicated to the discovery and preclinical development of our product candidates. In particular, we have expended, and believe that we will continue to expend for the foreseeable future, substantial resources discovering and developing our proprietary product candidates. These expenditures will include costs associated with research and development, preclinical manufacturing of product candidates, conducting preclinical experiments and clinical trials and obtaining regulatory approvals, as well as commercializing any products later approved for sale. For the foreseeable future, we expect to incur substantial additional costs associated with research and development for our internally developed programs. In addition, we may seek opportunities to in-license or otherwise acquire new therapeutic candidates and therapies.
Our future capital requirements depend on many factors, including:

- the amount of royalties generated from MAVYRET/MAVIRET sales under our existing collaboration with AbbVie;
- any continuing impact of the COVID-19 pandemic on the numbers of treated HCV patients;
- the number and characteristics of our research and development programs;
- the scope, progress, results and costs of researching and developing any of our product candidates on our own, including conducting advanced clinical trials;
- delays and additional expense in our clinical trials as a result of the COVID-19 pandemic;
- the cost of manufacturing our product candidates for clinical development and any products we successfully commercialize independently;
- opportunities to in-license or otherwise acquire new technologies, therapeutic candidates and therapies;
- the timing of, and the costs involved in, obtaining regulatory approvals for any product candidates we develop independently;
- the cost of commercialization activities, if any, of any product candidates we develop independently that are approved for sale, including marketing, sales and distribution costs;
- the timing and amount of any sales of our product candidates, if any, or royalties thereon;
- our ability to establish new collaborations, licensing or other arrangements, if any, and the financial terms of such arrangements;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patents, including any litigation costs and the outcomes of any such litigation; and
- potential fluctuations in foreign currency exchange rates.

Additional funds may not be available if and when we need them, on terms that are acceptable to us, or at all. Our ability to raise funds will depend on financial, economic and market conditions and other factors, many of which are beyond our control. If adequate funds are not available to us on a timely basis, we may be required to delay, limit, reduce or terminate preclinical studies, clinical trials or other research and development activities for one or more of our product candidates.

Risks Related to Development, Clinical Testing and Regulatory Approval of Our Product Candidates

Clinical drug development involves a lengthy and expensive process with uncertain timelines and uncertain outcomes. Any ongoing or future clinical trials of our product candidates may fail to demonstrate sufficient safety and efficacy. If clinical trials of any of our proprietary product candidates are prolonged or delayed or fail, we may be unable to commercialize our product candidates on a timely basis or ever.

Clinical testing is expensive and, depending on the stage of development, can take a substantial time period to complete. Its outcome is inherently uncertain, and failure can occur at any time during clinical development. None of our product candidates in our pipeline other than glecaprevir, which was clinically developed by AbbVie, has yet to advance beyond completion of Phase 2 clinical trials. Any ongoing or future clinical trials of our product candidates may fail to demonstrate sufficient safety and efficacy. Moreover, regulatory and administrative delays, including those caused by the COVID-19 pandemic, for any product candidate in our pipeline may adversely affect our or any future collaborator's clinical development plans and jeopardize our or any future collaborator's ability to attain product approval, commence product sales and compete successfully against other therapies.

Clinical trials can be delayed for a variety of reasons, including delays related to:

- reaching an agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- failure of third-party contractors, such as CROs, or investigators to comply with regulatory requirements;
- failure to obtain on a timely basis, or at all, the necessary approvals from regulators or institutional review boards, or IRBs, in order to commence a clinical trial at a prospective trial site, or their suspension or termination of a clinical trial once commenced;
- difficulty in recruiting suitable patients to participate in a trial;
- the impact of the COVID-19 pandemic on the ability of CROs to conduct their own operations, resulting in, among other things, delays in recruitment or dosing of our clinical trials;
- the broader impact of the COVID-19 pandemic on the incidence of other viruses (e.g., RSV and hMPV), the economic challenges for clinical trial sites and the political and socio-economic stability affecting their operations generally;
- seasonality and variations in incidence of infection year to year (e.g. RSV) affecting enrollment in clinical trials;
- difficulty in having patients complete a trial or return for post-treatment follow-up;
- clinical sites deviating from trial protocol or dropping out of a trial;
- problems with drug product or drug substance storage and distribution;
- having to add new clinical trial sites;
- our inability to manufacture, or obtain from third parties, adequate supply of drug product sufficient to complete our preclinical studies and clinical trials;
- changes in governmental or regulatory administration, including, for example, administrative delays due to the planned relocation of the EMA to the Netherlands;
- changes in regulatory requirements, policy and guidelines, including guidelines specifically addressing requirements for the development of treatments for RSV, HBV, COVID-19 or hMPV infection;
- difficulty in obtaining and maintaining adequate insurance coverage;
- program discontinuations or clinical holds for a program of a competitor, which could increase the level of regulatory scrutiny or delay data review or other response times by regulators with respect to one of our programs in the same class as the competitor's program; or
- varying interpretations of data by the FDA, the EMA and similar foreign regulatory agencies.

We could also encounter delays if a clinical trial is suspended or terminated by us, by the IRBs of the institutions in which such trial is being conducted, by any Data Safety Monitoring Board, or DSMB, for such trial, or by the FDA, the EMA 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, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. In addition, delays can occur due to safety concerns arising from trials or other clinical data regarding another company's product candidate in the same compound class as one of ours. If we or any future collaborators experience delays in the completion of, or termination of, any clinical trial of one of our product candidates, the commercial prospects of the product candidate will be harmed, and our ability to commence product sales and generate product revenues from the product candidate will be delayed. In addition, any delays in completing our clinical trials will increase our costs in the long term and slow down our product candidate development and approval process. 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 product candidates.

We may choose to test any of our clinical candidates preclinically and/or clinically in combination with other compounds with different mechanisms of action, and any adverse results from such testing may have adverse consequences for the further development potential of not only the combination but also the clinical candidate itself as a monotherapy or in combination with other mechanisms of action.

We expect that the further development of successful therapies in our principal disease area of HBV may require combining one or more of our compounds with other compounds with different mechanisms of action. To advance our programs and achieve favorable opportunities for any such combinations we may conduct preclinical testing, as well as clinical testing, with one of our other compounds or with a compound of a third party, with or without a longer-term collaboration with any such party. We may choose to disclose such testing in advance, but we can anticipate that some of the testing would be done without any public disclosure. If any such testing produces adverse results, we may have to disclose it to regulatory authorities as part of the data available with respect to our product candidate and the data may have adverse consequences for the further development and the ultimate conditions attached to any approved use of the product candidate, whether in the combination tested or even as a monotherapy or in combination with other mechanisms.

EDP-938, EDP-514, or EDP-235, or any other product candidate emerging from our current research programs may have undesirable side effects which may delay or prevent marketing approval, or, if approval is received, require our product candidate to be taken off the market, require us to include safety warnings or otherwise limit sales.

In our RSV program, we are developing inhibitors of the N protein. No inhibitor of the RSV N protein has progressed beyond a Phase 2 clinical trial, so we are not yet able to assess the potential liabilities of an N inhibitor in large scale studies or in the general population. In addition, the principal target populations in RSV, namely infants, the elderly, and the immunocompromised, represent sensitive patient populations that could be more prone to adverse effects of therapy.

In our HBV program, we have developed modulators of capsid assembly, also known as core inhibitors. These are newer mechanisms of action for potential HBV treatment, and no capsid assembly modulators have advanced beyond Phase 2 clinical studies, leaving them less tested for unexpected side effects. For example, we discontinued development of our lead HBV RNA destabilizer based on safety observations in a Phase 1 study in healthy volunteers. In addition, we are not able to predict what other adverse effects may arise in longer term studies conducted in larger populations. Long term consequences of an HBV infection can include hepatocellular carcinoma, liver failure, or liver transplant. It may be difficult to determine whether our drug candidates are playing a direct role in contributing to (or protecting from) these downstream effects of HBV infection.

In our SARS-CoV-2 program, we have designed EDP-235 as a 3CL protease inhibitor specifically for the SARS-CoV-2 virus. We have not yet tested EDP-235 in humans and, therefore, any short-term potential side effects are unknown. While scientific understanding of the longer-term effects of COVID-19 are still emerging and being studied, it may be difficult to determine whether any unexpected downstream effects after treatment with EDP-235 are due to that drug or the infection itself.

If any of our product candidates receives marketing approval and we or others later identify undesirable or unacceptable side effects caused by such products:

- regulatory authorities may require the addition of labeling statements, specific warnings, a contraindication or field alerts to physicians and pharmacies;
- we may be required to change instructions regarding the way the product is administered, conduct additional clinical trials or change the labeling of the product;
- we may be subject to limitations on how we may 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 and our stock price may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the affected product or could substantially increase commercialization costs and expenses, which in turn could delay or prevent us from generating significant revenue from the sale of any product we develop.

If we are required to suspend or discontinue clinical trials due to side effects or other safety risks associated with our product candidates, or if we are required to conduct studies on the long-term effects associated with the use of any of those product candidates, then commercialization any of those product candidates could be delayed or halted.

Clinical trials involving our product candidates may be suspended or terminated at any time for a number of safety-related reasons. For example, we may voluntarily suspend or terminate clinical trials if at any time one of our product candidates, or a combination

therapy including any of them, presents an unacceptable safety risk to the clinical trial patients. In addition, IRBs or regulatory agencies may order the temporary discontinuation or termination of clinical trials at any time if they believe that the clinical trials are not being conducted in accordance with applicable regulatory requirements, including if they present an unacceptable safety risk to patients. Administering any product candidate to humans may produce undesirable side effects. The existence of undesirable side effects resulting from any of our product candidates, or a combination therapy including any of them, could cause us or regulatory authorities, such as the FDA or EMA, to interrupt, delay or halt clinical trials of our product candidates and could result in the FDA or EMA or other regulatory agencies denying further development or approval of our product candidates for any or all targeted indications. This, in turn, could prevent us from commercializing our product candidates.

Results of earlier clinical trials may not be predictive of the results of later-stage clinical trials.

To date we have only tested our product candidates through initial Phase 2 studies. The results of preclinical studies and these early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials, if any. In addition, results of Phase 3 clinical trials in one or more ethnic groups are not necessarily indicative of results in other ethnic groups. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy results despite having progressed through preclinical studies and initial clinical trials. For example, several companies engaged in clinical development in the disease areas we are also engaged in have suffered significant setbacks in advanced clinical trials due to adverse safety profiles or lack of efficacy, notwithstanding promising results in earlier studies. Similarly, future clinical trial results may not be successful for these or other reasons.

Product candidate development risk is heightened by any changes in the planned clinical trials compared to the completed clinical trials. As product candidates are developed through preclinical early and late stage clinical trials towards approval and commercialization, it is customary that various aspects of the development program, such as manufacturing and formulation, are altered along the way in an effort to optimize processes and results. Such changes carry the risk that they will not achieve these intended objectives. Any of these changes could make the results of planned clinical trials or other future clinical trials we may initiate less predictable and could cause our product candidates to perform differently, which could delay completion of clinical trials, delay approval of our product candidates and/or jeopardize our ability to commence product sales and generate revenues.

The regulatory approval processes of the FDA, the EMA and other comparable foreign authorities are lengthy, time-consuming and inherently unpredictable, and if we are ultimately unable to obtain timely regulatory approval for our product candidates, our business will be substantially harmed.

The regulatory approval process is expensive and, while the time required to gain FDA and foreign regulatory approval is uncertain, it may take years. Regulatory approvals are unpredictable and depend upon numerous factors, including the substantial discretion of the regulatory authorities. In addition, approval policies, regulations, or the type and amount of preclinical and clinical data necessary to gain approval may change during the course of a product candidate's clinical development and may vary among jurisdictions. We may be required to undertake and complete certain additional preclinical studies to generate toxicity and other data required to support the submission of a New Drug Application, or NDA, to the FDA or comparable application to other regulatory authorities. AbbVie obtained all regulatory approvals for its paritaprevir-containing regimens and for MAVYRET/MAVIRET, which contains glecaprevir. We have not obtained regulatory approval by ourselves for any of our wholly-owned product candidates and it is possible that none of our existing product candidates or any of our future product candidates will ever obtain regulatory approval. Furthermore, approval in the United States by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other foreign countries or by the FDA.
Our product candidates could fail to receive regulatory approval for many reasons, including the following:

- the FDA, the EMA or other 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, the EMA or other comparable foreign regulatory authorities that a product 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, the EMA or other comparable foreign regulatory authorities for approval;
- we may be unable to demonstrate that a product candidate's clinical and other benefits outweigh its safety risks;
- the FDA, the EMA or other 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 product candidates may not be sufficient to support the submission of an NDA or other submissions 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 of any of our product candidates; and
- the approval policies or regulations of the FDA, the EMA or other comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

We cannot be assured that after spending substantial time and resources, we will obtain regulatory approvals in any desired jurisdiction. Even if we were to obtain approval, regulatory authorities may grant approval contingent on the performance of costly post-marketing clinical trials or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. Significant clinical trial delays could allow our competitors to obtain marketing approval before we do or could in effect shorten the patent protection period during which we may have the exclusive right to commercialize our product candidates. In addition, it may ultimately not be possible to achieve the prices intended for our products. In many foreign countries, including those in the European Union, a product candidate must be approved for reimbursement before it can be approved for sale in that country. Any of the foregoing scenarios could materially harm the commercial prospects for our product candidates and our business.

The regulatory pathway for approval of a therapeutic treatment for COVID-19 such as EDP-235 is continually evolving and may result in unexpected or unforeseen challenges and longer timelines than seen for earlier COVID-19 vaccines and therapeutics.

The FDA has the authority to grant an emergency use authorization, or EUA, to allow unapproved medical products to be used in an emergency to diagnose, treat, or prevent serious or life-threatening diseases or conditions when there are no adequate, approved, and available alternatives. To date, COVID-19 vaccines, therapeutic antibodies and other therapeutics that have demonstrated positive results in clinical trials have moved rapidly through the FDA regulatory review and EUA process, as well as the review and authorization process in a number of other jurisdictions, including the EU. The speed at which all parties are acting to create and test many therapeutics for COVID-19 is unusual, while evolving or changing plans or priorities within the FDA or the regulatory authorities in other jurisdictions, including changes based on new data regarding potential therapeutics of others, and new variants of the virus, may significantly affect the regulatory timeline for further authorizations or approvals for therapeutics such as EDP-235. Moreover, there is not yet any clear definition of the point at which the FDA will determine that the underlying COVID-19 health emergency no longer exists or warrants such authorizations. Accordingly, if there are successful clinical trials of EDP-235 demonstrating its therapeutic benefit and safety profile, it is still uncertain what will be the timelines or regulatory processes required for the authorization or approval of EDP-235 as a treatment for COVID-19.

Even if we receive regulatory approval for any of our product candidates we develop independently, we will be subject to ongoing FDA obligations and continued regulatory review in other jurisdictions, which may result in significant additional expense. Additionally, our product candidates, if approved, could be subject to labeling and other restrictions and market withdrawal and we may be subject to penalties if we or our collaborators fail to comply with regulatory requirements or experience unanticipated problems with our products.

Any regulatory approvals that we receive for our product candidates we develop independently may be subject to limitations on the approved indicated uses for which the product may be marketed or subject to certain conditions of approval, or may contain requirements for potentially costly post-marketing testing, including Phase 4 clinical trials, and surveillance to monitor the safety and efficacy of the product candidate.

In addition, if the FDA approves any of our product candidates, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion and recordkeeping for the product will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, as well as continued compliance with current good manufacturing practices, or cGMP, and good clinical practices, or GCP, for any clinical trials that we or our collaborators conduct post-approval. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market or voluntary or mandatory product recalls;
- fines, warning letters or holds on any post-approval clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; and

- injunctions or the imposition of civil or criminal penalties.

We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we, or AbbVie in the case of any licensed HCV product, are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we or AbbVie are not able to maintain regulatory compliance, our product candidates or AbbVie's licensed HCV products may lose any marketing approval that may have been obtained and we may not achieve or sustain profitability, which would adversely affect our business.

We may delay or terminate the development of a product candidate at any time if we believe the perceived market or commercial opportunity does not justify further investment, which could materially harm our business and adversely affect our stock price.

Even though the results of preclinical studies and clinical trials that we have conducted or may conduct in the future may support further development of one or more of our product candidates, we may delay, suspend or terminate the future development of a product candidate at any time for strategic, business, financial or other reasons, including the determination or belief that the emerging profile of the product candidate is such that it may not receive regulatory approvals in key markets, gain meaningful market acceptance, otherwise provide any competitive advantages in its intended indication or market or generate a significant return to stockholders. Such a delay, suspension or termination could materially harm our business, results of operations or financial condition.

Risks Related to Commercialization of Our Product Candidates

Unfavorable pricing regulations, third-party reimbursement practices or healthcare reform initiatives in the United States could harm our business.

The regulations that govern marketing approvals, pricing and reimbursement for new drug products vary widely from country to country. In the United States, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act of 2010, collectively referred to as the ACA, has significantly changed the way healthcare is financed by both governmental and private insurers. While we cannot predict what impact on federal reimbursement policies this law or any amendment to it will continue to have in general or specifically on MAVYRET/MAVIRET or any product or regimen that we may commercialize, the ACA or any such amendment may result in downward pressure on pharmaceutical reimbursement, which could negatively affect market acceptance of new products. In addition, several states have not implemented certain sections of the ACA, including 14 that have rejected the expansion of Medicaid eligibility for low income citizens. While the United States Supreme Court recently rejected the latest challenge to the constitutionality of the ACA, it is possible that other legislative efforts may seek to modify it. We cannot predict what effect any legislation may have on us or on AbbVie's sales of MAVYRET/MAVIRET. In addition, other legislative changes have been proposed since the Affordable Care Act was enacted. There has been increasing legislative and enforcement interest in the United States with respect to drug pricing practices. Specifically, there have been several recent U.S. congressional inquiries and proposed bills designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs and reform government program reimbursement methodologies for drugs. We expect any healthcare reform measures that may be adopted in the future could result in more rigorous coverage criteria and an additional downward pressure on the price that AbbVie receives for MAVYRET/MAVIRET, which could seriously harm our future revenues, and the price of our common stock could be materially adversely affected.

Our ability to commercialize any product candidate successfully, as well as AbbVie's continued commercialization of MAVYRET/MAVIRET, will also depend in part on the extent to which reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers and other organizations. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels. A primary trend in the U.S. healthcare industry is cost containment. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. In the case of HCV, limitations of coverage have recently been used to limit access to HCV treatments for only those patients with more advanced fibrosis. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and, in many cases involving HCV drugs, seeking discounts in exchange for greater patient access to a particular HCV drug. In addition, there are private and public payors challenging the prices charged for medical products. We cannot be sure that reimbursement will be available for any product that we may commercialize and, if reimbursement is available, the level of reimbursement. In addition, reimbursement may impact the demand for, or the price of, MAVYRET/MAVIRET or any product candidate for which we may obtain marketing approval. If reimbursement is not available or is available only to limited levels, we may not be able to successfully commercialize any product candidate for which we may seek marketing approval. There may be significant delays in obtaining reimbursement for newly approved drugs, and coverage may be more limited than the purposes for which the drug is approved by the FDA or comparable authorities in other jurisdictions. Moreover, eligibility for reimbursement does not imply that any drug will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Interim reimbursement levels for new drugs, if applicable, may also be insufficient to

cover our and any collaborator's costs and may not be made permanent. Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost drugs and may be incorporated into existing payments for other services. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. AbbVie's inability to continue to obtain coverage and profitable payment rates from both government-funded and private payors for MAVYRET/MAVIRET, or our inability to obtain the same for any product candidate that we develop, could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition.

In general, the United States and several other jurisdictions are considering a number of legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our products profitably. Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access to healthcare. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. We expect to experience pricing pressures in connection with the sale of any products that we develop or that are being commercialized under our collaboration with AbbVie. The implementation of cost containment measures or other healthcare reforms may limit our ability to generate revenue, maintain profitability or commercialize our product candidates.

There is significant uncertainty around the future path of the COVID-19 pandemic which may impact opportunity of EDP-235 as a potential treatment for COVID-19.

COVID-19 is currently still an ongoing global pandemic and there is an urgent need for a safe and effective oral treatment for it. However, the longevity and extent of the ongoing COVID-19 pandemic is unpredictable, and it is uncertain whether SARS-CoV-2 will become an endemic seasonal respiratory disease, such as RSV or flu, after the current pandemic has subsided. If the pandemic were to end with a substantial decrease in new infections, due to the effectiveness of vaccines or otherwise, there would be a reduced opportunity for EDP-235.

In order to prepare for the possibility that EDP-235 is successful in development and commercialization, we are currently devoting resources towards executing on an accelerated development path, including sufficient drug supply for advanced clinical trials and commercialization. If EDP-235 does not advance in development or is not approved for the treatment of COVID-19, or if infection rates decrease substantially, we may not be able to recover these costs and our results of operations and financial condition would be adversely affected.

Foreign governments tend to impose strict price controls, which may adversely affect our future profitability.

In most foreign countries, particularly in the European Union and Japan, prescription drug pricing and/or reimbursement is subject to governmental control. In those countries that impose price controls, 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 candidate to other available therapies.

Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we (or AbbVie in the case of MAVYRET/MAVIRET) might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay the commercial launch of the product, possibly for lengthy time periods, and negatively impact the revenues that are generated from the sale of the product in that country. If reimbursement of MAVYRET/MAVIRET or of any of our product candidates is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, or if there is competition from lower priced cross-border sales, our results of operations will be negatively affected.

If, in the future, we are unable to establish our own sales, marketing and distribution capabilities or enter into licensing or collaboration agreements for these purposes, we may not be successful in commercializing any product candidates.

We do not have a sales or marketing infrastructure and have no sales, marketing or distribution experience. We will seek to either build our own commercial infrastructure to commercialize any products if and when they are approved, or enter into licensing or collaboration agreements where our collaborator is responsible for commercialization, as in the case of our collaboration with AbbVie, or where we have the right to assist in the future development and commercialization of such products.

To develop internal sales, distribution and marketing capabilities, we will have to invest significant amounts of financial and management resources, some of which will be committed prior to any confirmation that any of our proprietary product candidates will

be approved. For product candidates for which we decide to perform sales, marketing and distribution functions ourselves, we could face a number of additional risks, including:

- 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 products;
- the lack of complementary products to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

Where and when appropriate, we may elect to utilize contract sales forces or distribution partners to assist in the commercialization of our product candidates. If we enter into arrangements with third parties to perform sales, marketing and distribution services for our products, the resulting revenues or the profitability from these revenues to us are likely to be lower than if we had sold, marketed and distributed our products ourselves. In addition, we may not be successful in entering into arrangements with third parties to sell, market and distribute our product 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 these third parties may fail to devote the necessary resources and attention to sell, market and distribute our products effectively.

If we do not establish sales, marketing and distribution capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our product candidates.

Commercial success of our product candidates depends upon significant market acceptance among physicians, patients and healthcare payors of any resulting approved drug.

MAVYRET/MAVIRET, as well as EDP-938, EDP-514, and EDP-235 and any other product candidate that we may develop in the future, whether as part of a combination therapy or as a monotherapy, are subject to market acceptance among physicians, healthcare payors, patients and the medical community. The degree of market acceptance of any product candidate for which we obtain approval for commercial sale, will depend on a number of factors, including:

- the efficacy and safety of treatment regimens containing one of our product candidates, as demonstrated in clinical trials, and the degree to which these regimens represent a clinically meaningful improvement in care as compared with other available therapies;
- the clinical indications for which any treatment regimen containing one of our product candidates become approved;
- acceptance among physicians, major operators of clinics, payors and patients of any treatment regimen containing one of our product candidates;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the potential and perceived advantages of treatment regimens containing one of our product candidates over alternative treatments;
- the cost of treatment of regimens containing one of our product candidates in relation to the cost of alternative treatments;
- the availability of adequate reimbursement and pricing by third parties and government authorities and successful negotiation of favorable agreements with payors by us or any collaborator of ours, as well as the impact of any agreements among any of the foregoing and one or more of our competitors limiting access to our product in favor of one or more competitive products;
- the continued longevity of any market for which we develop a drug;
- the levels of funding provided by government-funded healthcare for treatment of any disease for which we develop a drug;
- the relative convenience and ease of administration of any treatment regimen containing one of our product candidates compared to competitive regimens;
- the prevalence and severity of adverse side effects, whether involving the use of treatment regimens containing one of our products candidates or similar, competitive treatment regimens; and
- the effectiveness of our sales and marketing efforts.

If treatment regimens containing one of our product candidates are approved and then fail to achieve market acceptance, we may not be able to generate significant additional revenue. Further, if new, more favorably received therapies are introduced after any such regimen achieves market acceptance, then we may not be able to maintain that market acceptance over time.

Risks Related to Our Dependence on Third Parties

We may not be successful in establishing new product collaborations, which could adversely affect our ability to develop and commercialize one or more of our product candidates. If we are unsuccessful in maintaining or forming alliances on favorable terms, our business may not succeed.

We may seek to enter into additional product collaborations in the future, including alliances with other biotechnology or pharmaceutical companies, to enhance and accelerate the development and commercialization of one or more of our product candidates. For example, we plan to out-license our FXR agonist candidates for combination therapy for NASH and are seeking potential partners for this program. We face significant competition in seeking appropriate collaborators and the negotiation process is time-consuming and complex. Moreover, we may not be successful in our efforts to establish other product collaborations or other alternative arrangements for any product candidates and programs because our research and development pipeline may be insufficient, our product candidates and programs may be deemed to be at too early of a stage of development for collaborative effort and/or third parties may not view our product candidates and programs as having the requisite potential to demonstrate safety and efficacy. Even if we are successful in our efforts to establish product collaborations, the terms that we agree upon may not be favorable to us and we may not be able to maintain such product collaborations if, for example, development or approval of a product candidate is delayed or sales of an approved product are disappointing.

If our existing collaboration agreement with AbbVie is terminated, or if we determine that entering into other product collaborations is in our best interest but we either fail to enter into, experience a delay in entering into, or fail to maintain, such collaborations:

- the development of certain of our product candidates may be terminated or delayed;
- our cash expenditures related to the development of certain of our product candidates would increase significantly and we may need to seek additional financing;
- we may be required to hire additional employees or otherwise develop expertise, such as clinical, regulatory, sales and marketing expertise, which we do not currently have;
- we will bear all of the risk related to the development of any such product candidates; and
- the competitiveness of any product candidate that is commercialized could be reduced.

We intend to rely on third-party manufacturers to produce our development-stage product candidate supplies and any commercial supplies of any approved product candidates. Any failure by a third-party manufacturer to produce acceptable supplies for us may delay or impair our ability to initiate or complete our clinical trials or sell any resulting product.

We do not currently own or operate any manufacturing facilities. We plan to continue to work with third-party contract manufacturers to produce sufficient quantities of any product candidates for preclinical testing, clinical trials and commercialization. If we are unable to arrange for such a third-party manufacturing source for any of our product candidates, or fail to do so on commercially reasonable terms, we may not be able to successfully produce, develop and market one or more of our product candidates, or we may be delayed in doing so.

Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured product candidates ourselves, including reliance on the third party for regulatory compliance and quality control and assurance, volume production, the possibility of breach of the manufacturing agreement by the third party because of factors beyond our control (including a failure to synthesize and manufacture our product candidates in accordance with our product specifications), shutdowns of manufacturing sites or other supply chain constraints resulting from the COVID-19 pandemic, and the possibility of termination or nonrenewal of the agreement by the third party at a time that is costly or damaging to us. In addition, the FDA and other regulatory authorities require that our product candidates be manufactured according to cGMP and similar foreign standards. Pharmaceutical manufacturers and their subcontractors are required to register their facilities and/or products manufactured at the time of submission of the marketing application and then annually thereafter with the FDA and certain state and foreign agencies. They are also subject to periodic unannounced inspections by the FDA, state and other foreign authorities. Any subsequent discovery of problems with a product, or a manufacturing or laboratory facility used by us or our collaborators, may result in restrictions on the product or on the manufacturing or laboratory facility, including marketed product recall, suspension of manufacturing, product seizure, or a voluntary withdrawal of the drug from the market. Any failure by our third-party manufacturers to comply with cGMP or failure to scale up manufacturing

processes, including any failure to deliver sufficient quantities of product candidates in a timely manner, could lead to a delay in, or failure to obtain, regulatory approval of any of our product candidates.

We plan to rely on third-party manufacturers to purchase from third-party suppliers the materials necessary to produce our product candidates for our clinical studies. There are a small number of suppliers for certain capital equipment and materials that we plan to use to manufacture our drugs. Such suppliers may not sell these materials to our manufacturers at the times we need them or on commercially reasonable terms. Moreover, we currently do not have any agreements for the production of these materials. Although we do not intend to begin a clinical trial unless we believe we have a sufficient supply of a product candidate to complete the clinical trial, any significant delay in the supply of a product candidate or the material components thereof for an ongoing clinical trial due to the need to replace a third-party manufacturer could considerably delay completion of our clinical studies, product testing and potential regulatory approval of our product candidates. If our manufacturers or we are unable to purchase these materials after regulatory approval has been obtained for our product candidates, the commercial launch of our product candidates would be delayed or there would be a shortage in supply, which would impair our ability to generate revenue from the sale of our product candidates.

Contract manufacturers may not be able to manufacture our product candidates at a cost or in quantities or in a timely manner necessary to develop and commercialize them. If we successfully commercialize any of our product candidates, to meet our projected needs we may need to find third parties that will increase their scale of production, or we may have to establish or access large-scale commercial manufacturing capabilities. We may require additional funds, personnel and other resources to build, lease or operate any manufacturing facility.

A portion of our research and a portion of our manufacturing of certain key intermediates used in the manufacture of the active pharmaceutical ingredients for our product candidates takes place in China through third-party researchers and manufacturers. A significant disruption in the operation of those researchers or manufacturers, or a trade war, political unrest or an epidemic in China, such as the COVID-19 pandemic, could materially adversely affect our business, financial condition and results of operations.

Although manufacturing for MAVYRET/MAVIRET is being conducted by AbbVie, we have relied on third parties located in China to manufacture and supply certain key intermediates used in the manufacture of our active pharmaceutical ingredients, or API, for our current product candidates, and we expect to continue to use such third party manufacturers for such intermediates for any product candidates we develop independently. Any disruption in production or inability of our manufacturers in China to produce adequate quantities to meet our needs, whether as a result of a natural disaster, pandemics or other causes, could impair our ability to operate our business on a day-to-day basis and to continue our research and development of our product candidates. We also use contract researchers in China to conduct a portion of our research for our early-stage programs. Any disruption in the team conducting that research could cause delays in one or more of our research programs and could require us to curtail one or more programs, at least until we could contract for that research to be done elsewhere. For example, either of these risks could be triggered by an epidemic such as the outbreak of COVID-19 in the Wuhan region of China. To date our contract manufacturer in China, which is not located in the Wuhan region, has not had any material delays in its ability to deliver API and other services. Furthermore, since these researchers and manufacturers are located in China, we are exposed to the possibility of product supply disruption and increased costs in the event of changes in the policies of the United States or Chinese governments, political unrest or unstable economic conditions in China. For example, a trade war could lead to tariffs on the chemical intermediates we use that are manufactured in China. Any of these matters could materially and adversely affect our business and results of operations. Any recall of the manufacturing lots or similar action regarding our API used in clinical trials could delay the trials or detract from the integrity of the trial data and its potential use in future regulatory filings. In addition, manufacturing interruptions or failure to comply with regulatory requirements by any of these manufacturers could significantly delay clinical development of potential products and reduce third-party or clinical researcher interest and support of proposed trials. These interruptions or failures could also impede commercialization of our product candidates and impair our competitive position. Further, we may be exposed to fluctuations in the value of the local currency in China. Future appreciation of the local currency could increase our costs. In addition, our labor costs could continue to rise as wage rates increase due to increased demand for skilled laborers and the availability of skilled labor declines in China.

We will rely on third parties to monitor, support, conduct and/or oversee clinical trials of our product candidates that we develop independently and, in some cases, to maintain regulatory files for those product candidates. If we are not able to maintain or secure agreements with such third parties on acceptable terms, if these third parties do not perform their services as required, or if these third parties fail to timely transfer any regulatory information held by them to us, we may not be able to obtain regulatory approval for, or commercialize, our product candidates.

We will rely on CROs, hospitals, clinics, academic institutions and other third-party collaborators who are outside our control to monitor, support, conduct and/or oversee preclinical and clinical studies of our product candidates. We will also rely on third parties to perform clinical trials of our product candidates when they reach that stage. As a result, we have less control over the timing and cost of these studies and the ability to recruit trial subjects than if we conducted these trials wholly by ourselves. If we are unable to

maintain or enter into agreements with these third parties on acceptable terms or engagement is terminated, we may be unable to enroll patients on a timely basis or otherwise conduct our trials in the manner we anticipate. In the case of our ongoing studies, we paused recruitment and dosing of the ARGON-2 Phase 2b NASH study and Part 2 of our Phase 1a/1b study of EDP-514 in NUC-suppressed HBV patients as a result of the COVID-19 pandemic in March 2020, but we were able to resume these studies in July 2020. The pause in these studies has delayed their completion, and it is uncertain whether they or any of our other ongoing studies may be subject to further disruptions due to the ongoing pandemic. In addition, there is no guarantee that these third parties will devote adequate time and resources to our studies or perform as required by a contract or in accordance with regulatory requirements, including maintenance of clinical trial information regarding our product candidates. If these third parties fail to meet expected deadlines, fail to timely transfer to us any regulatory information, fail to adhere to protocols or fail to act in accordance with regulatory requirements or our agreements with them, or if they otherwise perform in a substandard manner or in a way that compromises the quality or accuracy of their activities or the data they obtain, then clinical trials of our product candidates may be extended, delayed or terminated, or our data may be rejected by the FDA or regulatory agencies.

To the extent we elect to enter into additional licensing or collaboration agreements to partner our product candidates, our dependence on such relationships may adversely affect our business.

Our commercialization strategy for some of our product candidates may depend on our ability to enter into collaboration agreements with other companies to obtain access to other compounds for use in combination with any of our product candidates or for assistance and funding for the development and potential commercialization of any of these product candidates, similar to what we have done with AbbVie. Supporting diligence activities conducted by potential collaborators and negotiating the financial and other terms of a collaboration agreement are long and complex processes with uncertain results. Even if we are successful in entering into one or more additional collaboration agreements, collaborations can involve greater uncertainty for us, as we may have limited or no control over certain aspects of our collaborative programs. We may determine that continuing a collaboration under the terms provided is not in our best interest, and we may terminate the collaboration. Our collaborators could delay or terminate their agreements with us, and our product candidates subject to collaborative arrangements may never be successfully commercialized.

Further, our collaborators may develop alternative products or pursue alternative technologies either on their own or in collaboration with others, including our competitors, and the priorities or focus of our collaborators may shift such that our programs receive less attention or resources than we would like, or they may be terminated altogether. Any such actions by our collaborators may adversely affect our business prospects and ability to earn revenue. In addition, we could have disputes with our collaborators, such as the interpretation of terms in our agreements. Any such disagreements could lead to delays in the development or commercialization of any potential products or could result in time-consuming and expensive litigation or arbitration, which may not be resolved in our favor.

Even with respect to programs that we intend to commercialize ourselves, we may enter into agreements with collaborators to share in the burden of conducting clinical trials, manufacturing and marketing our product candidates or products. In addition, our ability to apply our proprietary technologies to develop proprietary compounds will depend on our ability to establish and maintain licensing arrangements or other collaborative arrangements with the holders of proprietary rights to such compounds. We may not be able to establish such arrangements on favorable terms or at all, and our collaborative arrangements may not be successful.

Risks Related to Our Intellectual Property Rights

We are competing to develop intellectual property in areas of small-molecule drug development that are highly competitive. We could be unsuccessful in obtaining or maintaining adequate patent protection for one or more of our product candidates.

Our commercial success will depend, in large part, on our ability to obtain and maintain patent and other intellectual property protection with respect to our product candidates. We cannot be certain that patents will be issued or granted with respect to our patent applications that are currently pending, or that issued or granted patents will not later be found to be invalid and/or unenforceable, be interpreted in a manner that does not adequately protect our products, or otherwise provide us with any competitive advantage. The patent position of biotechnology and pharmaceutical companies is generally uncertain because it involves complex legal and factual considerations. The standards applied by the United States Patent and Trademark Office and foreign patent offices in granting patents are not always applied uniformly or predictably. For example, there is no uniform worldwide policy regarding patentable subject matter or the scope of claims allowable in biotechnology and pharmaceutical patents. Consequently, patents may not issue from our pending patent applications. As such, we do not know the degree of future protection that we will have on our proprietary products and technology, if any, and a failure to obtain adequate intellectual property protection with respect to our product candidates and proprietary technology could have a material adverse impact on our business.

In addition, certain of our activities in the past have been funded, and others may in the future be funded, by the United States federal government. For example, the preclinical and early clinical development of the lead antibiotic product candidate in our former

antibiotic program, which we are no longer developing, was funded under a contract with NIAID, an entity of the United States federal government. When new technologies are developed with United States federal government funding, the government obtains certain rights in any resulting patents, including a nonexclusive license authorizing the government to use the invention for non-commercial purposes. These rights may permit the government to disclose our confidential information to third parties and to exercise "march-in" rights to use or allow third parties to use our patented technology. The government can exercise its march-in rights if it determines that action is necessary because we fail to achieve practical application of the United States government-funded technology, or because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations or to give preference to United States industry. In addition, United States government-funded inventions must be reported to the government and United States government funding must be disclosed in any resulting patent applications. In addition, our rights in such inventions are subject to certain requirements to manufacture products in the United States.

Claims that our product candidates or the sale or use of our products infringe the patent or other intellectual property rights of third parties could result in costly litigation or could require substantial time and money to resolve, even if litigation is avoided.

Our commercial success depends upon our ability to develop, manufacture, market and sell our product candidates and use our proprietary technology without infringing the intellectual property rights of others. We cannot guarantee that our product candidates or any uses of our product candidates do not and will not in the future infringe third-party patents or other intellectual property rights. Third parties might allege that we or our collaborators are infringing their patent rights or that we have misappropriated their trade secrets, or that we are otherwise violating their intellectual property rights, whether with respect to the manner in which we have conducted our research or to the composition, use or manufacture of the compounds we have developed or are developing with our collaborators. Such third parties might resort to litigation against us or other parties we have agreed to indemnify, which litigation could be based on either existing intellectual property or intellectual property that arises in the future.

It is also possible that we failed to identify, or may in the future fail to identify, relevant patents or patent applications held by third parties that cover our product candidates. For example, applications filed before November 29, 2000 and certain applications filed after that date that will not be filed outside the United States remain confidential until patents issue. Other patent applications in the United States and several other jurisdictions are published approximately 18 months after the earliest filing for which priority is claimed, with such earliest filing date being commonly referred to as the priority date. Furthermore, publication of discoveries in the scientific or patent literature often lags behind actual discoveries. Therefore, we cannot be certain that we or our collaborators were the first to invent, or the first to file patent applications on, our product candidates or for their uses, or that our product candidates will not infringe patents that are currently issued or that are issued in the future. In the event that a third party has also filed a patent application covering one of our product candidates or a similar invention, we may have to participate in an adversarial proceeding, known as an interference, declared by the U.S. Patent and Trademark Office or its foreign counterpart to determine priority of invention. Additionally, pending patent applications which have been published can, subject to certain limitations, be later amended in a manner that could cover our products or their use.

In order to avoid or settle potential claims with respect to any patent or other intellectual property rights of third parties, we may choose or be required to seek a license from a third party and be required to pay license fees or royalties or both, which could be substantial. These licenses may not be available on acceptable terms, or at all. Even if we were able to obtain a license, the rights may be nonexclusive, which could result in our competitors gaining access to the same intellectual property. Ultimately, we could be prevented from commercializing a product, or be forced, by court order or otherwise, to cease some or all aspects of our business operations, if, as a result of actual or threatened patent or other intellectual property claims, we are unable to enter into licenses on acceptable terms. Further, we could be found liable for significant monetary damages as a result of claims of intellectual property infringement. For example, we have received, and may in the future receive, offers to license and demands to license from third parties claiming that we are infringing their intellectual property or owe license fees and, even if such claims are without merit, there can be no assurance that we will successfully avoid or settle such claims.

In addition, if AbbVie licenses or otherwise acquires rights to intellectual property controlled by a third party in various circumstances, for example, where a product could not be legally developed or commercialized in a country without the third-party intellectual property right, it is entitled under our collaboration agreement to decrease payments payable to us on a product-by-product basis and, in certain cases, on a country-by-country basis. Any of the foregoing events could harm our business significantly. Defending against claims of patent infringement, misappropriation of trade secrets or other violations of intellectual property rights could be costly and time consuming, regardless of the outcome. Thus, even if we were to ultimately prevail, or to settle at an early stage, such litigation could burden us with substantial unanticipated costs. In addition, litigation or threatened litigation could result in significant demands on the time and attention of our management team, distracting them from the pursuit of other company business. Claims that our product candidates or the sale or use of our future products infringe, misappropriate or otherwise violate third-party intellectual property rights could therefore have a material adverse impact on our business.

Confidentiality agreements with employees and third parties may not prevent unauthorized disclosure of trade secrets and other proprietary information.

In addition to patents, we rely on trade secrets, technical know-how and proprietary information concerning our business strategy and product candidates in order to protect our competitive position in the field of each of our antiviral product candidates and our NASH compounds. In the course of our research and development activities and our business activities, we often rely on confidentiality agreements to protect our proprietary information. Such confidentiality agreements are used, for example, when we talk to vendors of laboratory or clinical development services or potential strategic partners. In addition, each of our employees is required to sign a confidentiality agreement and invention assignment agreement upon joining our company. We take steps to protect our proprietary information, and our confidentiality agreements and invention assignment agreements are carefully drafted to protect our proprietary interests. Nevertheless, there can be no guarantee that an employee or an outside party will not make an unauthorized disclosure of our proprietary confidential information. This might happen intentionally or inadvertently. It is possible that a competitor will make use of such information, and that our competitive position will be compromised, in spite of any legal action we might take against persons making such unauthorized disclosures. In addition, to the extent that our employees, consultants or contractors use 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. Trade secrets are difficult to protect. Although we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors, business partners or outside scientific collaborators might intentionally or inadvertently disclose our trade secret information to competitors or our trade secrets may otherwise be misappropriated. Enforcing a claim that a third party illegally obtained and is using any of our trade secrets is expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States sometimes are less willing than United States courts to protect trade secrets. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how.

Our collaborators may have rights to publish data and other information to which we have rights. In addition, we sometimes engage individuals or entities to conduct research relevant to our business. The ability of these individuals or entities to publish or otherwise publicly disclose data and other information generated during the course of their research is subject to certain contractual limitations. These contractual provisions may be insufficient or inadequate to protect our confidential information. If we do not apply for patent protection prior to such publication, or if we cannot otherwise maintain the confidentiality of our proprietary technology and other confidential information, then our ability to obtain patent protection or to protect our trade secret information may be jeopardized, which could adversely affect our business.

Risks Related to Our Industry

If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to limit commercialization of our product candidates.

We face an inherent risk of product liability as a result of the clinical testing of our product candidates, and we will face an even greater risk if we commercialize any product candidates. For example, we may be sued if any of our product candidates, including any that are developed in combination therapies, 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 product candidates. Even successful defense would require significant financial and management resources. There is also risk that third parties we have agreed to indemnify could incur liability. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for our product candidates or any resulting products;
- injury to our reputation;
- withdrawal of clinical trial participants;
- costs to defend the related litigation;
- a diversion of management's time and our resources;
- substantial monetary awards to trial participants or patients;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue;
- the inability to commercialize our product candidates; and
- a decline in our stock price.

Our inability to obtain and retain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of products we develop. We currently carry product liability insurance covering our clinical studies in the amount of $15.0 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 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.

Our internal computer systems, or those of our collaborator, CROs or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of development programs for our product candidates.

Despite the implementation of security measures, our internal computer systems and those of our collaborators, CROs, and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, pandemics, terrorism, war and telecommunication and electrical failures. Information security risks have significantly increased in recent years and during the COVID-19 pandemic in part due to the proliferation of new technologies, the increased sophistication and activities of organized crime, hackers, terrorists and other external parties, including foreign state actors as well as remote working for many businesses. As cyber threats continue to evolve, we may be required to expend significant additional resources to continue to modify or enhance our protective measures or to investigate and remediate any information security breaches.

While we have not experienced any such system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our independent drug development programs. For example, the loss of clinical trial data from ongoing or future clinical trials for any of our product candidates could result in delays in regulatory approval efforts and significantly increase costs to recover or reproduce the data. Our information security systems are also subject to laws and regulations requiring that we take measures to protect the privacy and security of certain information we gather and use in our business. For example, HIPAA and its implementing regulations impose, among other requirements, certain regulatory and contractual requirements regarding the privacy and security of personal health information. In the European Union the General Data Protection Regulation, or GDPR, is even more restrictive with respect to all personal information, including information masked by a coding system. In addition to HIPAA and GDPR, numerous other federal and state laws, including, without limitation, state security breach notification laws, state health information privacy laws and federal and state consumer protection laws, govern the collection, use, disclosure and storage of personal information. To the extent that any disruption or security breach were to result in a loss of or damage to data or applications, or inappropriate disclosure of confidential or proprietary information or personal health information, we could incur substantial liability, our reputation would be damaged, and the further development of our product candidates could be delayed.

Our relationships with customers and third-party payors in the United States and elsewhere will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.

Healthcare providers, physicians and third-party payors in the United States and elsewhere play a primary role in the recommendation and prescription of any product candidates for which we obtain marketing approval. Our future arrangements with third-party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell and distribute our products for which we obtain marketing approval. Restrictions under applicable federal, state and foreign healthcare laws and regulations include the following:

- the federal healthcare anti-kickback statute 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 either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal and state healthcare programs such as Medicare and Medicaid;
- the federal False Claims Act imposes criminal and civil penalties, including civil whistleblower or *qui tam* actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, 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 federal Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program and also imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;

- the federal false statements statute 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 healthcare benefits, items or services;
- the federal transparency requirements under the Patient Protection and Affordable Care Act of 2010 requires manufacturers of drugs, devices, biologics and medical supplies to report to the Department of Health and Human Services information related to physician payments and other transfers of value and physician ownership and investment interests;
- analogous state laws and regulations, such as state anti-kickback and false claims laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, and 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 drug manufacturers to report information related to payments to physicians and other healthcare providers or marketing expenditures; and
- analogous anti-kickback, fraud and abuse and healthcare laws and regulations in foreign countries.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. 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, damages, fines, exclusion from government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations, which could have a material adverse effect on our business. If any of the physicians or other providers or entities with whom we expect to do business, including our collaborators, are found not to be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs, which could also materially affect our business.

Risks Related to Our Common Stock

Our stock price has been, and is likely to continue to be, volatile, and thus our stockholders could incur substantial losses.

Our stock price has been volatile and could be subject to wide fluctuations in response to various factors, many of which are beyond our control. From June 30, 2016 through September 30, 2021, the daily closing price of our common stock on the NASDAQ Global Select Market has ranged from $21.00 to $126.37. The stock market in general and the market for biopharmaceutical companies, and for those developing potential therapies for viral infections and liver diseases in particular, have experienced extreme volatility that has often been unrelated to the operating performance of particular companies, which in some cases has been exacerbated by the COVID-19 pandemic. As a result of this volatility, you may not be able to sell your holdings of our common stock at or above your purchase price, if at all. The market price for our common stock may be influenced by many factors, including:

- results from or delays of clinical trials of our product candidates, as well as results of regulatory reviews relating to the approval of our product candidates;
- actions by AbbVie regarding the MAVYRET/MAVIRET regimen, including announcements regarding regulatory or commercial developments;
- market expectations about and response to the levels of sales or scripts achieved by, or the announced prices or discounts for, AbbVie's MAVYRET/MAVIRET regimen or competitive HCV drugs;
- failure of AbbVie's MAVYRET/MAVIRET regimen to maintain its sales levels;
- the results of our efforts to discover or develop additional product candidates;
- new products, product candidates or new uses for existing products or technologies introduced or announced by our competitors and the timing of these introductions or announcements;
- our dependence on third parties, including our collaborators, CROs, manufacturers, clinical trial sponsors and clinical investigators;
- regulatory, political or legal developments in the United States or other countries;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key scientific or management personnel;

- our ability to commercialize our product candidates we develop independently, if approved;
- the level of expenses related to any of our product candidates or clinical development programs;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- period-to-period variations in our financial results or those of companies that are perceived to be similar to us;
- sales of common stock by us or our stockholders in the future, as well as the overall trading volume of our common stock;
- changes in the structure of healthcare payment systems or other actions that affect the effective reimbursement rates for treatment regimens containing our products or for competitive regimens;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, industry and market conditions and other factors that may be unrelated to our operating performance or the operating performance of our competitors, including changes in market valuations of similar companies; and
- the other factors described in this "Risk Factors" section.

Provisions in our corporate charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our corporate charter and our bylaws may discourage, delay or prevent a merger, acquisition or other change in control of us that stockholders may consider favorable, including transactions in which they might otherwise receive a premium for their shares.

These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, because our board of directors is responsible for appointing the members of our management team, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Among other things, these provisions:

- establish a classified or staggered board of directors such that not all members of the board are elected at one time;
- allow the authorized number of our directors to be changed only by resolution of our board of directors;
- limit the manner in which stockholders can remove directors from the board;
- establish advance notice requirements for stockholder proposals that can be acted on at stockholder meetings and nominations to our board of directors;
- require that stockholder actions must be effected at a duly called stockholder meeting and prohibit actions by our stockholders by written consent;
- limit who may call stockholder meetings;
- provide that the state courts or, in certain circumstances, the federal courts, in Delaware shall be the sole and exclusive forum for certain actions involving us, our directors, officers, employees and stockholders;
- provide our board of directors with the authority to designate the terms of and issue a new series of preferred stock without stockholder approval, which could be used to institute a "poison pill" that would work to dilute the stock ownership of a potential hostile acquirer, effectively preventing acquisitions that have not been approved by our board of directors; and
- require the approval of the holders of at least 66 2/3% of the votes that all our stockholders would be entitled to cast to amend or repeal certain provisions of our charter or bylaws.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibit a person who owns 15% or more of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner. Any provision in our corporate charter or our bylaws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock and could also affect the price that some investors are willing to pay for our common stock.

Our employment agreements with our executive officers may require us to pay severance benefits to any of those persons who are terminated in connection with a change of control of us, which could harm our financial condition or results.

Our executive officers are parties to employment agreements that provide for aggregate cash payments of up to approximately $5.5 million for severance and other non-equity-based benefits in the event of a termination of employment in connection with a change of control of our company. In addition, based on the closing price of our common stock of $56.81 per common share as of September 30, 2021, the aggregate intrinsic value of unvested stock options and other equity awards subject to accelerated vesting upon these events was $20.1 million. The accelerated vesting of awards options could result in dilution to our stockholders and harm the market price of our common stock. The payment of these severance benefits could harm our company's financial condition and results. In addition, these potential severance payments may discourage or prevent third parties from seeking a business combination with us.

Because we do not anticipate paying cash dividends on our common stock for the foreseeable future, investors in our common stock may never receive a return on their investment.

You should not rely on an investment in our common stock to provide dividend income. We do not anticipate that we will pay any cash dividends to holders of our common stock for the foreseeable future. Instead, we plan to retain any earnings to maintain and expand our existing operations.

Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any return on their investment. As a result, investors seeking cash dividends should not invest in our common stock.

A sale of a substantial number of shares of our common stock in the public market could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. As of September 30, 2021 we had 20.2 million shares of common stock outstanding. In addition, as of September 30, 2021 , we had 3.9 million and 0.3 million shares of common stock that are subject to outstanding options and restricted stock unit awards, respectively, under our outstanding equity plans eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules, and Rule 144 under the Securities Act. If these additional shares of common stock are sold, or it is perceived that they will be sold, in the public market, the trading price of our common stock could decline.

If securities or industry analysts do not publish research, or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about us or our business. If those analysts are unable to predict accurately the demand and net sales of AbbVie's HCV regimens, that could result in our reported revenues and earnings being lower than the so-called "market consensus" of our projected revenues, which could negatively affect our stock price. In addition, if too few securities or industry analysts cover our company, the trading price for our stock would likely be negatively impacted. In the event that one or more of the analysts who cover us downgrade our stock or publish inaccurate or unfavorable research about our business, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline.

General Risk Factors

Issued patents covering one or more of our product candidates could be found invalid or unenforceable if challenged in court.

Despite measures we take to obtain patent and other intellectual property protection with respect to our product candidates and proprietary technology, any of our intellectual property rights could be challenged or invalidated. For example, if we were to initiate legal proceedings against a third party to enforce a patent covering one of our product candidates, the defendant could counterclaim that our patent is invalid and/or unenforceable. In patent litigation in the United States and in some other jurisdictions, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, for example, lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the United States Patent and Trademark Office, or the applicable foreign counterpart, or made a misleading statement, during prosecution. Although we believe that we have conducted our patent prosecution in accordance with the duty of candor and in good faith, the outcome following legal assertions of invalidity and unenforceability during patent litigation is unpredictable. With respect

to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on a product candidate. Even if a defendant does not prevail on a legal assertion of invalidity and/or unenforceability, our patent claims may be construed in a manner that would limit our ability to enforce such claims against the defendant and others. Any loss of patent protection could have a material adverse impact on one or more of our product candidates and our business.

Enforcing our intellectual property rights against third parties may also cause such third parties to file other counterclaims against us, which could be costly to defend and could require us to pay substantial damages, cease the sale of certain products or enter into a license agreement and pay royalties (which may not be possible on commercially reasonable terms or at all). Any efforts to enforce our intellectual property rights are also likely to be costly and may divert the efforts of our scientific and management personnel.

Unfavorable outcomes in intellectual property litigation could limit our research and development activities and/or our ability to commercialize certain products.

If third parties successfully assert their intellectual property rights against us, we might be barred from using certain aspects of our technology or barred from developing and commercializing certain products. Prohibitions against using certain technologies, or prohibitions against commercializing certain products, could be imposed by a court or by a settlement agreement between us and a plaintiff. In addition, if we are unsuccessful in defending against allegations that we have infringed, misappropriated or otherwise violated patent or other intellectual property rights of others, we may be forced to pay substantial damage awards to the plaintiff. There is inevitable uncertainty in any litigation, including intellectual property litigation. There can be no assurance that we would prevail in any intellectual property litigation, even if the case against us is weak or flawed. If litigation leads to an outcome unfavorable to us, we may be required to obtain a license from the intellectual property owner in order to continue our research and development programs or to market any resulting product. It is possible that the necessary license will not be available to us on commercially acceptable terms, or at all. Alternatively, we may be required to modify or redesign our products in order to avoid infringing or otherwise violating third-party intellectual property rights. This may not be technically or commercially feasible, may render our products less competitive, or may delay or prevent the entry of our products to the market. Any of the foregoing could limit our research and development activities, our ability to commercialize one or more product candidates, or both.

Most of our competitors are larger than we are and have substantially greater resources. They are, therefore, likely to be able to sustain the costs of complex intellectual property litigation longer than we could. In addition, the uncertainties associated with litigation could have a material adverse effect on our ability to raise the funds necessary to conduct our clinical trials, continue our internal research programs, in-license needed technology, or enter into strategic partnerships that would help us bring our product candidates to market. In addition, any future intellectual property litigation, interference or other administrative proceedings will result in additional expense and distraction of our personnel. An adverse outcome in such litigation or proceedings may expose us or any future strategic partners to loss of our proprietary position, expose us to significant liabilities, or require us to seek licenses that may not be available on commercially acceptable terms, if at all, each of which could have a material adverse effect on our business.

Intellectual property litigation may lead to unfavorable publicity that harms our reputation and causes the market price of our common stock to decline.

During the course of any intellectual property litigation, there could be public announcements of the results of hearings, rulings on motions, and other interim proceedings in the litigation. If securities analysts or investors regard these announcements as negative, the perceived value of our products, programs or intellectual property could be diminished. Accordingly, the market price of our common stock may decline. Such announcements could also harm our reputation or the market for our future products, which could have a material adverse effect on our business.

Intellectual property rights do not necessarily protect us from all potential threats to our competitive advantage.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business, or permit us to maintain our competitive advantage. The following examples are illustrative:

- others may be able to make compounds that are similar to our product candidates but that are not covered by the claims of the patents that we own or have exclusively licensed;
- we might not have been the first to make the inventions covered by the issued patents or pending patent applications that we own or may in the future exclusively license, which could result in the patent applications not issuing or being invalidated after issuing;

- we might not have been the first to file patent applications covering certain of our inventions, which could result in the patent applications not issuing or being invalidated after issuing;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- it is possible that our pending patent applications will not lead to issued patents;
- issued patents that we own may not provide us with any competitive advantages, or may be held invalid or unenforceable, as a result of legal challenges by our competitors; we may obtain patents for certain compounds many years before we obtain marketing approval for products containing such compounds, and because patents have a limited life, which may begin to run prior to the commercial sale of the related product, the commercial value of our patents may be limited;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may fail to develop additional proprietary technologies that are patentable;
- the laws of certain foreign countries may not protect our intellectual property rights to the same extent as the laws of the United States, or we may fail to apply for or obtain adequate intellectual property protection in all the jurisdictions in which we operate; and
- the patents of others may have an adverse effect on our business, for example by preventing us from marketing one or more of our product candidates for one or more indications.

Any of the aforementioned threats to our competitive advantage could have a material adverse effect on our business.

Changes in patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with many other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining, maintaining and enforcing patents in the biopharmaceutical industry involves both technological complexity and legal complexity. Therefore, the process of obtaining, maintaining and enforcing biopharmaceutical patents is costly, time-consuming and inherently uncertain. In addition, recent legislative and judicial developments in the United States and elsewhere have in some cases narrowed the protection afforded to patent owners, made patents more difficult to obtain, or increased the uncertainty regarding the ability to obtain, maintain and enforce patents. For example, Congress recently passed patent reform legislation, and may pass patent reform legislation in the future. The United States Supreme Court has ruled on several patent cases in recent years, and in certain circumstances has narrowed the scope of patent protection available or otherwise weakened the rights of patent owners. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions and actions by the United States Congress, the federal courts, the United States Patent and Trademark Office, and their respective foreign counterparts, the laws and regulations governing patents could change in unpredictable ways that could weaken our ability to obtain new patents or to maintain and enforce our existing patents and patents that we might obtain in the future.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on the success of our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals. Our operations also produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials or our or third parties' disposal of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties.

We may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research, development or production efforts. Failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

We maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials. This insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of hazardous or radioactive materials.

Our insurance policies are expensive and only protect us from specified 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, cybersecurity, products liability and directors' and officers' insurance. We do not know, however, if we have adequate levels of coverage for any liability we may incur, or whether we will always be able to continue to maintain such insurance. Any significant uninsured liability may require us to make substantial payments, which would adversely affect our financial position and results of operations. Furthermore, any increase in the volatility of our stock price, or changes in the insurance market generally, may result in us being required to pay substantially higher premiums for our directors' and officers' liability insurance than those to which we were previously subject and may even cause one or more of our underwriters to be unwilling to insure us.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud. As a result, stockholders could lose confidence in our financial and other public reporting, which would harm our business and the trading price of our common stock.

Effective internal controls over financial reporting are necessary for us to provide reliable financial reports and, together with adequate disclosure controls and procedures, are designed to prevent fraud. Any failure to implement newly required or improved controls, or difficulties encountered in their implementation, could cause us to fail to meet our reporting obligations. In addition, any failure to maintain effective internal control as a result of shutdowns during the global COVID-19 pandemic could result in deficiencies in internal control. In addition, any testing by us conducted in connection with Section 404 of the Sarbanes-Oxley Act of 2002, or any subsequent testing by our independent registered public accounting firm, may reveal deficiencies in our internal controls over financial reporting that are deemed to be material weaknesses or that may require prospective or retroactive changes to our financial statements or identify other areas for further attention or improvement. Inferior internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common stock.

Our information technology systems, or those used by our CROs or other contractors or consultants, may fail or suffer other breakdowns, cyber-attacks, or information security breaches, which could adversely affect our business.

We are increasingly dependent upon information technology systems, infrastructure, and data to operate our business. We also rely on third party vendors and their information technology systems. Despite the implementation of security measures, our recovery systems, security protocols, network protection mechanisms, and other security measures and those of our current or future CROs or other contractors and consultants are vulnerable to system failure, interruption, compromise, or damage from data corruption, breakdown, computer hacking, malicious code (such as computer viruses or worms), fraudulent activity, employee misconduct, theft, or error, denial-of-service attacks, telecommunication, and electrical failures, natural disasters, public health epidemics, such as the COVID-19 pandemic, cyber-attacks by sophisticated nation-state and nation-state supported actors, or other system attacks, disruption, or accidents. We receive, generate and store significant and increasing volumes of personal health data and other confidential and proprietary information. There can be no assurance that we, or our collaborators, CROs, third-party vendors, contractors and consultants, will be successful in efforts to detect, prevent, protect against or fully recover systems or data from all breakdowns, service interruptions, attacks or breaches.

The costs to respond to a security breach and/or to mitigate any security vulnerabilities that may be identified could be significant, our efforts to address these problems may not be successful, and these problems could result in unexpected interruptions, delays, cessation of service, negative publicity, and other harm to our business and our competitive position. Remediation of any potential security breach may involve significant time, resources, and expenses. Despite our best efforts, our network security and data recovery measures and those of our vendors may still not be adequate to protect against such security breaches and disruptions, which could cause harm to our business, financial condition and results of operations.

Any cybersecurity incident could adversely affect our business, by leading to, for example, the loss of confidential information or other intellectual property, demands for ransom or other forms of blackmail or the unauthorized disclosure of personal, confidential or proprietary information of our employees, clinical trial participants, customers and others. We could be subject to regulatory actions taken by governmental authorities, litigation under laws that protect the privacy and security of personal information, or other forms of legal proceedings, which could result in significant investigations, liabilities or penalties.

We may not have adequate insurance coverage for security incidents or breaches. The successful assertion of one or more large claims against us that exceeds our available insurance coverage, or results in changes to our insurance policies (including premium increases or the imposition of large deductible or co-insurance requirements), could have an adverse effect on our business. In addition, we cannot be sure that our existing insurance coverage and coverage for errors and omissions will continue to be available on acceptable terms or that our insurers will not deny coverage as to any future claim.

Use of social media could give rise to liability or reputational harm.

We and our employees use social media to communicate externally. There is risk that the use of social media by us or our employees to communicate about our product candidates or business may give rise to liability, lead to the loss of trade secrets or other intellectual property or result in public exposure of personal information of our employees, clinical trial patients, customers, and others. Furthermore, negative posts or comments about us or our product candidates in social media could seriously damage our reputation, brand image, and goodwill. Any of these events could have a material adverse effect on our business, prospects, operating results, and financial condition and could adversely affect the price of our common stock.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our corporate headquarters is located in Watertown, Massachusetts, where we lease approximately 49,000 square feet of office and laboratory space. The term of our current lease expires on September 1, 2022. In November 2021, the Company exercised its option to extend this lease for an additional 5 years through September 1, 2027. We also lease approximately 18,000 square feet of additional office space located in Watertown, Massachusetts. The term of this lease expires on August 1, 2024.

ITEM 3. LEGAL PROCEEDINGS

We are not a party to any material legal proceedings.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

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

Market and Stockholder Information

Our common stock has been listed on The NASDAQ Global Select Market under the symbol "ENTA" since March 21, 2013. The following table shows the high and low sales price for our common stock as reported by The NASDAQ Global Select Market for the quarterly periods in the fiscal years ended September 30, 2021 and 2020:

	Fiscal 2021	
	High	Low
First Quarter	$ 47.47	$ 41.16
Second Quarter	$ 54.95	$ 41.69
Third Quarter	$ 53.11	$ 43.76
Fourth Quarter	$ 58.65	$ 41.02

	Fiscal 2020	
	High	Low
First Quarter	$ 67.88	$ 57.15
Second Quarter	$ 62.12	$ 38.40
Third Quarter	$ 58.59	$ 44.90
Fourth Quarter	$ 54.57	$ 42.07

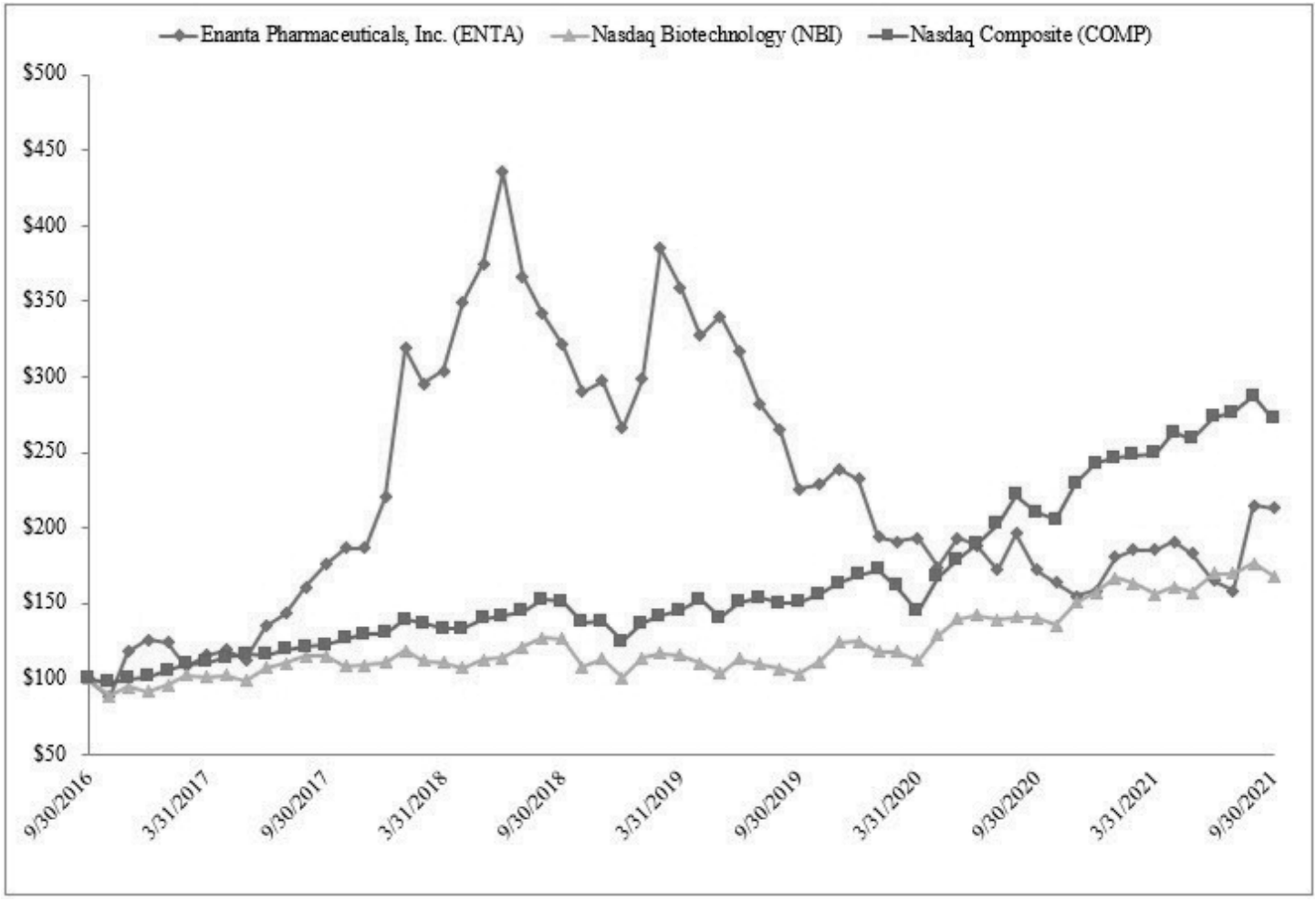
As of November 17, 2021 there were 20 stockholders of record of our common stock, which excludes stockholders whose shares were held in nominee or street name by brokers.

We have never declared or paid cash dividends on our common stock, and we do not expect to declare or pay any cash dividends for the foreseeable future.

Performance Graph[(1)]

The following graph shows a comparison from September 30, 2016 through September 30, 2021 of cumulative total return on assumed investments of $100.00 in cash in each of our common stock, the NASDAQ Composite Index and the NASDAQ Biotechnology Index. Such returns are based on historical results and are not intended to suggest future performance. Data for the NASDAQ Composite Index and the NASDAQ Biotechnology Index assume reinvestment of dividends.

COMPARISON OF FIVE YEARS CUMULATIVE TOTAL RETURN
Among Enanta Pharmaceuticals, Inc., the NASDAQ Composite Index,
and the NASDAQ Biotechnology Index



(1) This performance graph shall not be deemed to be "soliciting material" or to be "filed" with the SEC for purposes of Section 18 of the Securities and Exchange Act of 1934, as amended, or otherwise subject to the liabilities under that Section, and shall not be deemed incorporated by reference into any filing of Enanta Pharmaceuticals, Inc. under the Securities Act of 1933, as amended.

ITEM 6. RESERVED

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

You should read the following discussion and analysis of financial condition and results of operations together with our consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. This discussion and other parts of this Annual Report on Form 10-K contain forward-looking statements that involve risks and uncertainties, such as statements regarding our plans, objectives, expectations, intentions, and projections. Our actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in the "Risk Factors" section of this Annual Report on Form 10-K.

Overview

We are a biotechnology company that uses our robust, chemistry-driven approach and drug discovery capabilities to become a leader in the discovery and development of small molecule drugs for the treatment of viral infections and liver diseases. We discovered glecaprevir, the second of two protease inhibitors discovered and developed through our collaboration with AbbVie for the treatment of chronic hepatitis C virus, or HCV. Glecaprevir is co-formulated as part of AbbVie's leading brand of direct-acting antiviral, or DAA, combination treatment for HCV, which is marketed under the tradenames MAVYRET® (U.S.) and MAVIRET® (ex-U.S.) (glecaprevir/pibrentasvir). Our royalties from our AbbVie collaboration provide us funding to support our wholly-owned research and development programs, which are primarily focused on the following disease targets:

- Respiratory syncytial virus, or RSV, the most common cause of bronchiolitis and pneumonia in young children and a significant cause of respiratory illness in older adults, with estimates suggesting that on average each year RSV leads to 3 million hospitalizations globally in children under 5 years old and 177,000 hospitalizations in the U.S. in adults over the age of 65;
- Hepatitis B virus, or HBV, the most prevalent chronic hepatitis, which is estimated by the World Health Organization to affect close to 300 million individuals worldwide;
- SARS-CoV-2, the virus that causes COVID-19; and
- Human metapneumovirus, or hMPV, a virus that causes respiratory infection with symptoms similar to RSV

We had $352.4 million in cash and marketable securities at September 30, 2021. In fiscal 2021, we earned $97.1 million in product royalties on AbbVie's net sales of its HCV regimens. We expect cash flows from our continuing HCV royalties and our existing financial resources will allow us to continue to fund our wholly-owned research and development programs for at least the next two years.

Our Wholly-Owned Programs

Our primary wholly-owned research and development programs are in virology, namely RSV, HBV, SARS-CoV-2 and hMPV:

- RSV: We have a clinical stage program for RSV, for which the lead asset is EDP-938.

  We discovered EDP-938, a potent N-protein inhibitor of activity of both major subgroups of RSV, referred to as RSV-A and RSV-B, and have been investigating it as our first clinical candidate for RSV. To our knowledge, EDP-938 is the only N-protein inhibitor in clinical development. EDP-938 has been investigated in a Phase 2a challenge study and is currently in three ongoing Phase 2 studies, each in a different patient population.

- o *RSVP:* Our ongoing study with the most advanced enrollment is the RSVP study in adult outpatients with community-acquired RSV infection. This Phase 2b study is designed to help us better understand the feasibility of this direct-acting antiviral therapy by enrolling subjects, within 48 hours of symptom onset, who will then receive EDP-938 or placebo for five days. The mitigation steps to manage the COVID-19 pandemic since March 2020 have suppressed the incidence of RSV and other respiratory illnesses globally (other than COVID-19). We have continued our preparedness efforts to ensure we are ready when RSV re-emerges, including establishing trial sites in North America, Europe, the Asia-Pacific and the Southern Hemisphere, and there have been reports of increased RSV incidence globally, including the United States and Europe. Given that the recent re-emergence of RSV is not following any normal seasonal pattern, as well as the impact of renewed social distancing interventions where the Delta variant has increased the incidence of COVID-19, it is uncertain how significant or sustained the new incidence of RSV will be moving forward. Nonetheless, we expect that enrollment in the RSVP study will be complete during the Northern Hemisphere winter season if there is no further significant increase in social distancing interventions. Assuming this enrollment occurs, we would expect data in the first half of 2022.
- o *RSVPEDs:* We have initiated a Phase 2 RSV study called RSVPEDs in pediatric patients. In this dose-ranging, randomized, double-blind, placebo-controlled study, we plan to enroll 90 infants and children aged 28 days to 36 months with RSV-associated respiratory tract infection, including both hospitalized and non-hospitalized patients who will be dosed in 4 age cohorts and will receive EDP-938 or placebo for 5 days. The study will be conducted in 2-parts. Part 1 will evaluate multiple ascending doses in each age cohort, with a primary endpoint of safety, tolerability, and pharmacokinetics. Part 2 will evaluate the selected dose from Part 1 across the 4 age cohorts, with a primary endpoint of antiviral activity.
- o *RSVTx:* We have also initiated a Phase 2b study called RSVTx in adult hematopoietic cell transplant recipients with acute RSV infection and symptoms of upper respiratory tract infection. We plan to enroll approximately 200 adult subjects 18 to 75 years of age, within 72 hours of symptom onset, who will receive EDP-938 or placebo for 21 days. The primary endpoint is the incidence of lower respiratory tract complications within 28 days of enrollment, while secondary endpoints include change from baseline in RSV RNA viral load, safety and pharmacokinetics.
- o *L-Inhibitor:* We also have initiated an RSV L-protein inhibitor discovery effort centered around potent nanomolar leads active against both RSV-A and RSV-B, for potential use alone or in combination with agents targeting other RSV mechanisms, such as our lead RSV asset, EDP-938.

- HBV: Our lead clinical candidate for the treatment of chronic infection with hepatitis B virus, or HBV, is EDP-514, a core inhibitor that displays potent anti-HBV activity *in vitro* at multiple points in the HBV lifecycle. Our goal is to develop a combination therapy approach, including existing approved treatments such as a nucleoside reverse transcriptase inhibitor (NUC), with EDP-514 and one or more other mechanisms, which could lead to a functional cure for patients with chronic HBV infection.
  - o *EDP-514 - Phase 1a/b*- Our initial study of EDP-514 was a randomized, double-blind, placebo-controlled Phase 1a/1b study designed in two parts. Part 1 of the study in healthy subjects demonstrated that EDP-514 is well-tolerated with a favorable safety profile and has a pharmacokinetic profile supportive of once-daily dosing. In Part 2, we studied EDP-514 in chronic HBV patients already being treated with a marketed NUC, which we refer to as NUC-suppressed patients.
  - o *EDP-514 - Phase 1b study in Viremic HBV patients* - In addition, we conducted a second Phase 1b study, to evaluate EDP-514 in chronic HBV patients with high viral load not currently on treatment, which we refer to as viremic patients.
  - o *RNA Destabilizer* - We initiated a Phase 1 clinical study of EDP-721, an HBV RNA destabilizer, but discontinued development of the compound based on emerging safety observations in the single ascending dose part of the study.
- COVID-19: Since we announced our newest discovery program – developing a direct-acting antiviral for the treatment of COVID-19 – we have been leveraging our expertise in protease inhibitors to discover new compounds specifically designed to target the SARS-CoV-2 virus and potentially other coronaviruses. We have completed IND-enabling studies on our lead oral protease inhibitor, EDP-235, which we plan to begin testing in a first-in-human study in early calendar 2022.
- hMPV: Since announcing our new drug discovery effort for hMPV in January 2020, we have been optimizing nanomolar inhibitor leads against this virus and are working toward identifying our first clinical candidate for this indication.

In addition to our ongoing wholly owned programs, we currently have two clinically-developed FXR agonists for NASH, EDP-305 and EDP-297, which we are seeking to out-license. These compounds selectively bind to and activate the Farnesoid X receptor, or FXR. Based on an internal interim analysis of a subset of patients in a Phase 2 study of EDP-305 at 12 weeks of treatment, as well

as results from the Phase 1 clinical study of EDP-297, we made a business decision in 2021 to prioritize combination approaches through an out-licensing strategy for further development of either or both of these FXR agonists and not to continue further development of them internally.

We have utilized our internal chemistry and drug discovery capabilities to generate all of our development-stage programs. We continue to invest substantial resources in research programs to discover back-up compounds as well as new compounds targeting different mechanisms of action, both in our disease areas of focus as well as potentially in other disease areas.

Our Out-Licensed Products

Two protease inhibitors developed through our Collaborative Development and License Agreement with AbbVie have been clinically tested, manufactured, and commercialized by AbbVie as part of its combination regimens for HCV. We have earned all $330.0 million milestone payments under the agreement related to clinical development and commercialization regulatory approvals of these regimens in major markets. Glecaprevir is the protease inhibitor we discovered that was developed by AbbVie in a fixed-dose combination with its NS5A inhibitor, pibrentasvir, for the treatment of HCV. This patented combination, currently marketed under the brand names MAVYRET® (U.S.) and MAVIRET® (ex-U.S.), is referred to in this report as MAVYRET/MAVIRET. This regimen is a once-daily, all-oral, fixed-dose, ribavirin-free treatment for HCV genotypes 1-6, or GT1-6, which is referred to as being pan-genotypic. In the U.S., EU and Japan it is approved as an 8-week treatment for patients with and without compensated cirrhosis and new to treatment. Today, these patients are estimated to represent the majority of HCV patients in over 50 countries where MAVYRET/MAVIRET is sold by AbbVie and where MAVYRET/MAVIRET remains the only 8-week pan-genotypic HCV treatment.

Since August 2017, substantially all of our royalty revenue has been derived from AbbVie's net sales of MAVYRET/MAVIRET. Our ongoing royalty revenues from this regimen consist of annually tiered, double-digit, per-product royalties on 50% of the calendar year net sales of the 2-DAA glecaprevir/pibrentasvir combination in MAVYRET/MAVIRET. These royalties are calculated separately from the royalties on AbbVie's paritaprevir-containing regimens, AbbVie's initial HCV treatment now replaced by MAVYRET/MAVIRET in most markets worldwide. The annual royalty tiers for each of these royalty-bearing products return to the lowest tier for sales on and after each January 1.

Financial Operations Overview

We are currently funding all research and development for our wholly-owned programs, which are targeted toward the discovery and development of novel compounds for the treatment of viral infections and liver diseases. In 2021, we had three Phase 2 studies ongoing for our wholly-owned program in RSV and three Phase 1 studies in our HBV program. We are also progressing other compounds into preclinical development in our RSV, HBV and SARS-CoV-2 programs as well as pursuing drug discovery efforts in hMPV.

During the second half of fiscal 2020 and into 2021, our business has been impacted by the COVID-19 pandemic. Specifically, we reported lower royalty revenues from our AbbVie agreement as a result of lower treated patient volumes as well as slower enrollment in certain clinical studies in our virology program as a result of suppression of the incidence of respiratory illnesses globally (other than COVID-19) due to mitigation measures intended to suppress SARS-CoV-2.

As a result of our clinical development programs, as well as efforts to advance other compounds into preclinical development, we expect to incur greater expenses in fiscal 2022 than in 2021 as we continue to advance our RSV, HBV, SARS-CoV-2 and hMPV programs. However, if the COVID-19 pandemic further slows our research and development programs, it will reduce our spending in those areas in the near term.

We are funding our operations primarily through royalty payments received under our collaboration agreement with AbbVie and our existing cash, cash equivalents, and short-term and long-term marketable securities. Our revenue is currently dependent on royalty payments we receive from AbbVie on its sales of MAVYRET/MAVIRET. Absent a significant increase in the level of AbbVie's MAVYRET/MAVIRET sales that generate our royalty revenue, and given the planned increases in our future expenditures for the advancement of our internally developed compounds, we expect to continue to have net losses in fiscal 2022.

Revenue

Our revenue is derived from our collaboration agreement with AbbVie and AbbVie's sales of MAVYRET/MAVIRET, an 8-week treatment regimen that is pan-genotypic.

The following table is a summary of revenue recognized for the years ended September 30, 2021, 2020, and 2019:

	Years Ended September 30,		
	2021	2020	2019
		(in thousands)	
AbbVie agreement:			
Royalties	$ 97,074	$ 122,473	$ 205,197
Total revenue	$ 97,074	$ 122,473	$ 205,197

AbbVie Agreement

We currently receive annually tiered, double-digit royalties on our protease inhibitor product glecaprevir included in AbbVie's net sales of MAVYRET/MAVIRET. Under the terms of our AbbVie agreement, as amended in October 2014, 50% of AbbVie's net sales of MAVYRET/MAVIRET are allocated to glecaprevir. Beginning with each January 1, the cumulative net sales of MAVYRET/MAVIRET start at zero for purposes of calculating the tiered royalties. For detail regarding the royalty tiers under our AbbVie agreement, see Note 7 in Notes to Consolidated Financial Statements of this report which is incorporated herein by this reference.

Internal Programs

As our internal product candidates are currently in Phase 1 or Phase 2 clinical development, we have not generated any revenue from our own product sales and do not expect to generate any revenue from product sales derived from these product candidates for at least the next several years.

Operating Expenses

The following table summarizes our operating expenses for the years ended September 30, 2021, 2020, and 2019:

	Years Ended September 30,		
	2021	2020	2019
		(in thousands)	
Research and development	$ 174,111	$ 136,756	$ 142,213
General and administrative	32,536	27,356	26,246
Total operating expenses	$ 206,647	$ 164,112	$ 168,459

Research and Development Expenses

Research and development expenses consist of costs incurred to conduct basic research, such as the discovery and development of novel small molecules as therapeutics, as well as any external expenses of preclinical and clinical development activities. We expense all costs of research and development as incurred. These expenses consist primarily of:

- personnel costs, including salaries, related benefits and stock-based compensation for employees engaged in scientific research and development functions;
- third-party contract costs relating to research, formulation, manufacturing, preclinical study and clinical trial activities;
- laboratory consumables;
- allocated facility-related costs; and
- third-party license fees.

Project-specific expenses reflect costs directly attributable to our clinical development candidates and preclinical candidates nominated and selected for further development. Remaining research and development expenses are reflected in research and drug discovery, which represents early-stage drug discovery programs. At any given time, we typically have several active early stage research and drug discovery projects. Our internal resources, employees and infrastructure are not directly tied to any individual research or drug discovery project and are typically deployed across multiple projects. As such, we do not report information regarding costs incurred for our early-stage research and drug discovery programs on a project-specific basis. We expect that our research and development expenses will continue to increase in the future as we advance our research and development programs.

Our research and drug discovery and development programs are at early stages; therefore, the successful development of our product candidates is highly uncertain and may not result in approved products. Completion dates and completion costs can vary significantly

for each product candidate and are difficult to predict. Given the uncertainty associated with clinical trial enrollments, particularly in the context of the COVID-19 pandemic, and the risks inherent in the development process, we are unable to determine the duration and completion costs of the current or future clinical trials of our product candidates or if, or to what extent, we will generate revenue from the commercialization and sale of any of our product candidates. We anticipate that we will make determinations as to which development programs to pursue and how much funding to direct to each program on an ongoing basis in response to the preclinical and clinical success and prospects of each product candidate, as well as ongoing assessments of the commercial potential of each product candidate.

General and Administrative Expenses

General and administrative expenses consist primarily of personnel costs, which include salaries, related benefits and stock-based compensation, of our executive, finance, business and corporate development and other administrative functions. General and administrative expenses also include travel expenses, allocated facility-related costs not otherwise included in research and development expenses, directors and officers' liability insurance premiums, and professional fees for auditing, tax, and legal services and patent expenses.

We expect that general and administrative expenses will increase in the future primarily due to the ongoing expansion of our operating activities in support of our own research and development programs, as well as potential additional costs associated with operating a growing publicly traded company.

Other Income (Expense), Net

Other income (expense), net consists of interest and investment income and the change in fair value of our outstanding Series 1 nonconvertible preferred stock. Interest income consists of interest earned on our cash equivalents and short-term and long-term marketable securities balances as well as interest earned for any refunds received from tax authorities. Investment income consists of the amortization or accretion of any purchased premium or discount on our short-term and long-term marketable securities. The change in fair value of our Series 1 nonconvertible preferred stock relates to the remeasurement of these financial instruments from period to period as these instruments may require a transfer of assets because of the liquidation preference features of the underlying instrument.

Income Tax (Expense) Benefit

Income tax (expense) benefit for the years ended September 30, 2021, 2020, and 2019 is the result of federal and state taxes generated from our domestic operations or the benefit of tax refunds due as a result of tax losses generated in the period which are able to be carried back to prior years under the Coronavirus Aid, Relief and Economic Security Act ("CARES Act"). Income tax (expense) benefit is based on our best estimate of applicable income tax rates, net research and development tax credits, net operating loss carrybacks, changes in valuation allowance estimates and deferred income taxes, for the entire fiscal year applied to pre-tax profit or loss reported for the year-to-date period, except when a reliable estimate of the annual effective tax rate cannot be made and we instead use the year-to-date effective tax rate.

Critical Accounting Policies

Our consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of our consolidated financial statements and related disclosures requires us to make estimates and assumptions that affect the reported amount of assets, liabilities, equity, revenue, costs and expenses, and related disclosures. We believe that the estimates and assumptions involved in the accounting policies described below may have the greatest potential impact on our consolidated financial statements and, therefore, consider these to be our critical accounting policies. We evaluate our estimates and assumptions on an ongoing basis. Actual results may differ from these estimates under different assumptions and conditions. See also Note 2 to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K for information about these critical accounting policies as well as a description of our other significant accounting policies.

Research and Development and Pharmaceutical Drug Manufacturing Accruals

We have entered into various contracts with third parties to perform research and development and pharmaceutical drug manufacturing. These include contracts with contract research organizations ("CROs"), clinical manufacturing organizations ("CMOs"), testing laboratories, research hospitals and not-for-profit organizations and other entities to support our research and development activities. We expense the cost of each contract as the work is performed. When billing terms under these contracts do not coincide with the timing of when the work is performed, we are required to make estimates of our outstanding obligation as of period end to those third parties. Our accrual estimates are based on a number of factors, including our knowledge of the research and development programs and pharmaceutical drug manufacturing activities and associated timelines, invoicing to date, and the provisions in the contract. Significant judgments and estimates are made in determining the accrued balances at the end of any reporting period. Actual results could differ from our estimates.

Results of Operations

Comparison of Years Ended September 30, 2021, 2020, and 2019

	Years Ended September 30,		
	2021	2020	2019
	(in thousands)		
Revenue	$ 97,074	$ 122,473	$ 205,197
Research and development	174,111	136,756	142,213
General and administrative	32,536	27,356	26,246
Other income (expense):			
Interest and investment income, net	2,021	6,471	8,819
Change in fair value of Series 1 nonconvertible preferred stock	(27)	149	—
Income tax (expense) benefit	28,583	(1,149)	826
Net income (loss)	$ (78,996)	$ (36,168)	$ 46,383

Revenue. We recognized revenue of $97.1 million, $122.5 million, and $205.2 million during the years ended September 30, 2021, 2020, and 2019, respectively. The decrease in revenue year-over-year was due to lower numbers of treated HCV patients as a result of the worldwide COVID-19 pandemic which adversely affected all of fiscal 2021 and at least seven months of fiscal 2020.

Our weighted average royalty rate on the portion of AbbVie's sales allocable to our protease inhibitor products was approximately 11% in fiscal 2021 versus 13% in both fiscal 2020 and 2019. The decrease in the weighted average royalty rate in 2021 compared to previous years was due to sales levels being in lower royalty tiers as a result of lower protease inhibitor sales due to the COVID-19 pandemic.

Our royalty revenues eligible to be earned in the future will depend on AbbVie's HCV market share, the pricing of the MAVYRET/MAVIRET regimen and the number of patients treated. In addition, at the beginning of each calendar year (the second quarter of our fiscal year), our royalty rate resets to the lowest tier for each of our royalty-bearing products licensed to AbbVie. (See Note 7 to our consolidated financial statements for further details on our royalty rate tier.)

Research and development expenses.

	Years Ended September 30,		
	2021	2020	2019
	(in thousands)		
R&D programs:			
Virology	$ 127,488	$ 85,856	$ 75,087
Liver disease	43,908	45,001	66,892
Other	2,715	5,899	234
Total research and development expenses	$ 174,111	$ 136,756	$ 142,213

Research and development expense increased by $37.4 million for the year ended September 30, 2021 as compared to the same period in 2020. The increase year-over-year was primarily driven by the timing of our clinical studies in our virology programs, offset by a decrease in clinical trial expenses in our liver disease program. For our virology program, we had two Phase 1b studies of EDP-514 in chronic HBV as well as three Phase 2 studies of EDP-938 in RSV, including the expanded RSVP study which was ongoing in 2021, and a Phase 1a study of EDP-721, an HBV RNA destabilizer that was discontinued in November 2021. In the prior year, we had our

clinical study of EDP-514 in a Phase 1a study and our ongoing Phase 2 RSVP study of EDP-938. For our liver disease program in 2021, we had our ongoing Phase 2 study (ARGON-2) of EDP-305 expanding to additional sites and our Phase 1 study of our FXR follow-on candidate, EDP-297, whereas in 2020 we had the launch of ARGON-2 and we were in the process of completing our ARGON-1 study.

Research and development expense decreased by $5.5 million for the year ended September 30, 2020 as compared to the same period in 2019. The decrease year-over-year was primarily due to the timing of our clinical studies in our virology and liver disease programs as well as the impact of the COVID-19 pandemic. For our virology program, we initiated our Phase 2 RSVP study in 2020, continued our Phase 1a/1b study of EDP-514, and initiated a separate Phase 1b study in viremic patients with chronic HBV infection. We also initiated our ARGON-2 study in our liver disease program in 2020. However, in March 2020, we paused enrollment of the ARGON-2 and HBV nuc-suppressed study but were able to resume recruitment of both studies in July 2020. In fiscal 2019, we had initiated and completed part 1 of a Phase 2a human challenge study of EDP-938 and initiated a Phase 1a/1b clinical study of EDP-514, both of which are part of our virology programs. We also had two Phase 2 studies of EDP-305 ongoing, one in NASH patients and one in PBC patients, in our liver disease program.

We expect our research and development expenses will continue to increase in the future as we conduct more clinical development activities.

General and administrative expenses. General and administrative expenses increased to $32.5 million for the year ended September 30, 2021 as compared to $27.4 million for the same period in 2020. The increase was primarily due to increases in headcount and related compensation expense in support of expansion of our research and development operations.

General and administrative expenses increased by $1.1 million for the year ended September 30, 2020 as compared to the same period in 2019. The increase was primarily due to an increase in patent costs to support our broadening patent portfolio and premiums on directors and officers insurance.

We expect our general and administrative expenses will continue to increase in the future as our operations grow to support further research and development.

Other income (expense), net. Changes in components of other income (expense), net were as follows:

Interest and investment income, net. Interest and investment income, net, decreased by $4.5 million for the year ended September 30, 2021 compared to the same period in 2020, primarily due to lower invested cash balances and lower investment yield on our marketable securities purchased in 2021 compared to 2020.

Interest and investment income, net, decreased by $2.3 million for the year ended September 30, 2020 compared to the same period in 2019, primarily due to more purchases of our debt securities at a premium in fiscal 2020.

Income tax (expense) benefit. We recorded an income tax benefit of $28.6 million and income tax (expense) of ($1.1) million for the years ended September 30, 2021 and 2020, respectively. The effective tax rate used to calculate our income tax benefit for the year ended September 30, 2021 was 26.6% and for the year ended September 30, 2020 it was an effective tax rate of 3.3%. We recorded an income tax benefit in 2021 due to our pre-tax loss and a federal net operating loss carryback under the CARES Act. In 2020, we recorded income tax expense due to a valuation allowance charge recorded against the majority of our deferred tax assets of $18.3 million, partially offset by a federal net operating loss carryback under the CARES Act, research and development tax credits generated during the year and release of an uncertain tax position reserve related to the close of a tax audit. A valuation allowance was recorded against the majority of our deferred tax assets in 2020 because it was more likely than not that we would not have sufficient taxable income in the future that would allow us to realize the majority of our deferred tax assets. As of September 30, 2021, we continue to record a valuation allowance against all of our deferred tax assets.

In 2019, we recorded an income tax benefit of $0.8 million driven by a federal income tax benefit associated with foreign-derived royalty income, federal research and development tax credits and tax deductions from employee stock-award related activity during the year.

Liquidity and Capital Resources

We fund our operations with cash flows from our royalty revenue and our existing financial resources. At September 30, 2021, our principal sources of liquidity were cash and cash equivalents and short-term and long-term marketable securities of $352.4 million.

The following table shows a summary of our cash flows for each of the years ended September 30, 2021, 2020, and 2019:

	Years Ended September 30,		
	2021	2020	2019
	(in thousands)		
Cash provided by (used in):			
Operating activities	$ (69,996)	$ 7,088	$ 71,418
Investing activities	36,991	19,830	(86,664)
Financing activities	3,080	8,983	2,574
Net increase (decrease) in cash and cash equivalents	$ (29,925)	$ 35,901	$ (12,672)

Net cash provided by (used in) operating activities

Cash used in operating activities was $70.0 million for the year ended September 30, 2021 as compared to cash provided by operating activities of $7.1 million for the same period in 2020. The decrease in cash provided by operating activities was primarily driven by a decrease in royalty payments received under our collaboration with AbbVie and an increase in research and development costs incurred year-over-year.

Cash provided by operating activities was $7.1 million for the year ended September 30, 2020 as compared to $71.4 million for the same period in 2019. The decrease in cash provided by operating activities was primarily driven by a decrease in royalty payments received under our collaboration with AbbVie and an increase in research and development costs incurred year-over-year, which were partially offset by a decrease in cash taxes paid.

For the foreseeable future, we expect to incur substantial costs associated with research and development for our internally developed programs.

Net cash provided by (used in) investing activities

The increase of $17.2 million in cash provided by investing activities for the year ended September 30, 2021 as compared to the same period in 2020 was driven by timing of purchases, sales and maturities of marketable securities.

The increase of $106.5 million in cash provided by investing activities for the year ended September 30, 2020 as compared to the same period in 2019 was driven by timing of purchases, sales and maturities of marketable securities.

Net cash provided by financing activities

The decrease in cash provided by financing activities of $5.9 million for the year ended September 30, 2021 as compared to the same period in 2020 was driven by a decrease in proceeds from stock option exercises in 2021 as compared to 2020.

The increase in cash provided by financing activities of $6.4 million for the year ended September 30, 2020 as compared to the same period in 2019 was driven by an increase in proceeds from stock option exercises in 2020 as compared to 2019 as well as a decrease in withholding tax payments for the settlement of share-based awards.

Funding Requirements

As of September 30, 2021, we had $352.4 million in cash, cash equivalents and short-term and long-term marketable securities. We believe that our existing cash, cash equivalents and marketable securities as of September 30, 2021 will be sufficient to meet our anticipated cash requirements for at least the next two years. However, our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement that involves risks and uncertainties, and actual results could vary materially.

Our future capital requirements are difficult to forecast and will depend on many factors, including:

- the amount of royalties generated from MAVYRET/MAVIRET sales under our existing collaboration with AbbVie;
- any continuing impact of the COVID-19 pandemic on the numbers of treated HCV patients;
- the number and characteristics of our research and development programs;
- the scope, progress, results and costs of researching and developing any of our product candidates on our own, including conducting advanced clinical trials;
- delays and additional expense in our clinical trials as a result of the COVID-19 pandemic continuing;

- the cost of manufacturing our product candidates for clinical development and any products we successfully commercialize independently;
- our ability to establish new collaborations, licensing or other arrangements, if any, and the financial terms of such arrangements;
- opportunities to in-license or otherwise acquire new technologies and therapeutic candidates;
- the timing of, and the costs involved in, obtaining regulatory approvals for any product candidates we develop independently;
- the cost of commercialization activities, if any, of any product candidates we develop independently that are approved for sale, including marketing, sales and distribution costs;
- the timing and amount of any sales of our product candidates, if any, or royalties thereon;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patents, including any litigation costs and the outcomes of any such litigation; and
- potential fluctuations in foreign currency exchange rates.

We do not believe that inflation had a material effect on our business, financial condition or results of operations in the last three fiscal years. If our costs were to become subject to significant inflationary pressures, we could not offset such higher costs through revenue increases because our revenues are substantially outside of our control. Our inability to do so could harm our business, financial condition and results of operations.

Off-Balance Sheet Arrangements

We do not engage in any off-balance sheet financing activities. We do not have any interest in entities referred to as variable interest entities or unconsolidated entities, which include special purpose entities and other structured finance entities.

Recently Issued Accounting Pronouncements

A description of recently issued accounting pronouncements that may potentially impact our financial position and results of operations is set forth in Note 2 to the consolidated financial statements included in this Annual Report on Form 10-K.

Contractual Obligations and Commitments

We lease space in Watertown, Massachusetts under two separate lease agreements.

The first lease, located at 500 Arsenal Street, commenced on October 1, 2011 and was amended in 2015 to expand the rented space and extend the lease term through September 2022. In November 2021, the Company exercised its option to extend this lease for an additional 5 years through September 1, 2027. This lease is for office and laboratory space. In conjunction with the amendment of the lease, the Company entered into a capital lease agreement to fund certain leasehold improvements and the purchase of lab equipment.

The second lease, located at 400 Talcott Avenue, commenced on September 24, 2018 for office space and extends through August 1, 2024.

As of September 30, 2021, we had 1.9 million outstanding shares of Series 1 nonconvertible preferred stock, all of which we classified as long-term liabilities on our consolidated balance sheet and recorded at fair value of $1.5 million. The fair value of the preferred stock was measured based on significant inputs not observable in the market, which represented a Level 3 measurement within the fair value hierarchy. The fair value of these instruments represents less than 10% of liabilities measured at fair value as of September 30, 2021. The Series 1 nonconvertible preferred stock issued would require the payment of $2.0 million in the event of a qualifying merger or sale of the company.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

We had cash, cash equivalents and short-term and long-term marketable securities of $352.4 million and $419.3 million at September 30, 2021 and 2020, respectively, which consisted of cash, money market funds, agency securities, commercial paper, treasury notes and corporate bonds. Interest income is sensitive to changes in the general level of interest rates; however, due to the nature of these investments, a change in market interest rates of 1% would not be expected to have a material impact on our financial condition or results of operations for either period. We had no debt outstanding as of September 30, 2021 or 2020.

Foreign Exchange Risk

As we continue to progress our wholly-owned programs into clinical development, we will conduct clinical trials and clinical manufacturing outside of the U.S. and thus will face exposure to movements in foreign currency exchange rates, primarily the British Pound and Euro, against the U.S. Dollar, arising from our accounts payable and accrued expenses. During fiscal 2021 and 2020, the impact of foreign currency exposure was immaterial and thus did not have a significant impact on our consolidated financial statements. Our operations may become subject to more significant fluctuations in foreign currency exchange rates in the future if we continue to contract with vendors outside of the U.S.

ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Our consolidated financial statements, together with the report of our independent registered public accounting firm, appear on pages F-1 through F-32 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

Disclosure Controls and Procedures and Internal Control over Financial Reporting

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in the Company's reports under the Securities Exchange Act of 1934, as amended (the Exchange Act), is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to management, including our Chief Executive Officer (CEO) and Chief Financial Officer (CFO), as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, as the Companies are designed to do, and management necessarily was required to apply its judgment in evaluating the risk related to controls and procedures.

In connection with the preparation of this Form 10-K, as of September 30, 2021, an evaluation was performed under the supervision and with the participation of our management, including the CEO and CFO, of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act). Based on that evaluation, our CEO and CFO concluded that our disclosure controls and procedures were effective at a reasonable assurance level as of September 30, 2021. These conclusions were communicated to the Audit Committee.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the quarter ended September 30, 2021 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rule 13a-15(f) and Rule 15d-15(f) under the Exchange Act. Our internal control system is designed to provide reasonable assurance to the Company's management and Board of Directors regarding the preparation and fair presentation of published financial statements. All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

Our management has assessed the effectiveness of our internal control over financial reporting as of September 30, 2021. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in its 2013 *Internal Control—Integrated Framework.* Based on this assessment, our management has concluded that as of September 30, 2021 our internal control over financial reporting is effective.

The effectiveness of the Company's internal control over financial reporting as of September 30, 2021, has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears in Item 8 above.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Portions of the response to this item are incorporated herein by reference from the discussion responsive thereto under the captions "Proposal 1 - Election of Directors—Nominees for Director and Current Directors", "Delinquent Section 16(a) Reports", "Executive Officers" and "Corporate Governance—Board and Committee Matters" in the Company's Definitive Proxy Statement relating to the 2022 Annual Meeting of Stockholders, also referred to as the 2022 Proxy Statement, which will be filed within 120 days after September 30, 2021.

We have adopted a Code of Business Conduct and Ethics (the code of ethics) that applies to all of our employees, officers and directors. The code of ethics is available on our website at http://www.enanta.com. In addition, if we make any substantive amendments to the code of ethics or grant any waiver, including any implicit waiver, from a provision of the code to any of our executive officers or directors, we will disclose the nature of such amendment or waiver as required by applicable law on our website or on a Form 8-K.

ITEM 11. EXECUTIVE COMPENSATION

The response to this item is incorporated herein by reference from the discussion responsive thereto under the following captions in the 2022 Proxy Statement, which will be filed within 120 days after September 30, 2021: "Executive Compensation" and "Corporate Governance—Certain Relationships and Related Transactions."

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

The response to this item is incorporated herein by reference in part from the discussion responsive thereto under the caption "Beneficial Ownership of Common Stock" in the 2022 Proxy Statement, which will be filed within 120 days after September 30, 2021.

The following table provides information about the securities authorized for issuance under the Company's equity compensation plans as of September 30, 2021:

Equity Compensation Plan Information

(in thousands, except per share information)

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 [1]	4,191 [2]	$ 44.68	1,279 [3]
Equity compensation plans not approved by security holders	—	—	—
Totals	4,191		1,279

[1] Consists of the Company's 2019 Equity Incentive Plan, the Company's 2012 Equity Incentive Plan, as amended, the Company's Amended and Restated 1995 Equity Incentive Plan, as amended, and the Company's Employee Stock Purchase Plan.

[2] Consists of shares of the Company's common stock issuable upon exercise of outstanding options issued under the Company's 2019 Equity Incentive Plan, the Company's Amended and Restated 2012 Equity Incentive Plan and the Company's Amended and Restated 1995 Equity Incentive Plan.

[3] Consists of shares of the Company's common stock reserved for future issuance under the Company's 2019 Equity Incentive Plan and the Company's Employee Stock Purchase Plan.

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

The response to this item is incorporated herein by reference from the discussion responsive thereto under the caption "Corporate Governance—Certain Relationships and Related Transactions" and "Corporate Governance—Board and Committee Matters" in the 2022 Proxy Statement, which will be filed within 120 days after September 30, 2021.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The response to this item is incorporated herein by reference from the discussion responsive thereto under the captions "Corporate Governance—Board and Committee Matters" and "Audit Committee Report—Audit Fees" in the 2022 Proxy Statement, which will be filed within 120 days after September 30, 2021.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) 1. FINANCIAL STATEMENTS

The financial statements are included under Part II, Item 8 of this Report.

2. FINANCIAL STATEMENTS SCHEDULE

Schedules are omitted because they are not applicable, or are not required, or because the information is included in the consolidated financial statements and notes thereto.

3. EXHIBITS –

The exhibits are listed below under Part IV, Item 15(b) of this Report.

(b) EXHIBITS

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	Date	Exhibit Number	File Number	
3.1	Restated Certificate of Incorporation of Enanta Pharmaceuticals, Inc.	8-K	03/28/2013	3.1	001-35839	
3.2	Amended and Restated Bylaws of Enanta Pharmaceuticals, Inc. (as amended and restated in August 2015).	8-K	08/18/2015	3.2	001-35839	
4.1	Specimen certificate evidencing shares of common stock.	S-1/A	02/05/2013	4.1	333-184779	
4.2	Specimen certificate evidencing shares of Series 1 Non-Convertible Preferred Stock	10-K	12/11/2017	4.3	001-35839	
4.3	Description of securities registered pursuant to Section 12 of the Securities Exchange Act of 1934	10-K	11/27/2019	4.3	001-35839	
10.1#	Form of Indemnification Agreement for directors and officers.	S-1/A	02/05/2013	10.7	333-184779	
10.2#	Amended and Restated Employment Agreement between the Company and Jay R. Luly, Ph.D., dated as of March 4, 2013.	S-1/A	03/05/2013	10.5	333-184779	
10.3#	Form of Amended and Restated Employment Agreement for Executive Officers other than the Chief Executive Officer.	S-1/A	03/05/2013	10.17	333-184779	
10.4†	Collaborative Development and License Agreement between the Company and Abbott Laboratories, dated November 27, 2006; as amended by a First Amendment to Collaborative Development and License Agreement dated January 27, 2009 and a Second Amendment to Collaborative Development and License Agreement dated December 9, 2009 (assigned to AbbVie Inc. as of January 1, 2013).	8-K	02/05/2021	10.1	001-35839	
10.5†	Third Amendment to Collaborative Development and License Agreement between the Company and AbbVie dated October 20, 2014.	8-K	02/05/2021	10.2	001-35839	
10.6	Fourth Amendment to Collaborative Development and License Agreement between the Company and AbbVie dated as of March 3, 2015.	10-Q	05/08/2015	10.1	001-35839	
10.7	Lease Agreement between Company and ARE-500 Arsenal Street LLC, dated as of April 15, 2011.	S-1	11/06/2012	10.6	333-184779	
10.8	First Amendment to Lease Agreement made as of March 5, 2015 between the Company and ARE-500 Arsenal Street LLC.	10-Q	05/08/2015	10.2	001-35839	

10.9	Third Amended and Restated Registration Rights Agreement, dated as of August 23, 2012.	S-1/A	11/06/2012	10.4	333-184779	
10.10	Lease Agreement between Company and Athena Arsenal, LLC, dated as of September 27, 2018.	10-K	11/29/2019	10.10	001-35839	
10.11#	Amended and Restated 1995 Equity Incentive Plan.	S-1/A	03/05/2013	10.8	333-184779	
10.12#	Form of Incentive Stock Option Certificate under Amended and Restated 1995 Equity Incentive Plan.	S-1/A	03/05/2013	10.9	333-184779	
10.13#	Form of Non-Statutory Stock Option Certificate under Amended and Restated 1995 Equity Incentive Plan.	S-1/A	03/05/2013	10.10	333-184779	
10.14#	Form of Non-Statutory Stock Option Certificate for directors under Amended and Restated 1995 Equity Incentive Plan.	S-1/A	03/05/2013	10.11	333-184779	
10.15#	2012 Equity Incentive Plan (As adjusted to reflect the application of the 1-for-4.31 reverse stock split of the Company's common stock effected on March 1, 2013).	10-K/A	01/06/2017	10.14	001-35839	
10.16#	Form of Incentive Stock Option Agreement under 2012 Equity Incentive Plan.	S-1/A	03/05/2013	10.13	333-184779	
10.17#	Form of Non-Statutory Stock Option Agreement under 2012 Equity Incentive Plan.	S-1/A	03/05/2013	10.14	333-184779	
10.18#	Form of Non-Statutory Stock Option Certificate for directors under 2012 Equity Incentive Plan.	S-1/A	03/05/2013	10.15	333-184779	
10.19#	Form of Performance Share Unit Certificate under 2012 Equity Incentive Plan.	10-K	12/11/2017	10.18	001-35839	
10.20#	Form of Relative Total Stockholder Return Unit Certificate under 2012 Equity Incentive Plan.	10-K	12/11/2017	10.19	001-35839	
10.21#	Employee Stock Purchase Plan.	S-1/A	02/05/2013	10.16	333-184779	
10.22#	2019 Equity Incentive Plan (As amended March 2021)	8-K	03/05/2021	10.1	001-35839	
10.23#	Form of Notice of Grant of Non-Statutory Stock Option under 2019 Equity Incentive Plan.	10-Q	05/10/2019	10.2	001-35839	
10.24#	Form of Notice of Grant of Non-Statutory Stock Option for Directors under 2019 Equity Incentive Plan.	10-Q	05/10/2019	10.3	001-35839	
10.25#	Form of Relative Total Stockholder Return Unit Certificate under 2019 Equity Incentive Plan.	10-Q	05/10/2019	10.4	001-35839	
10.26#	Form of Performance Share Unit Certificate under 2019 Equity Incentive Plan.	10-Q	05/10/2019	10.5	001-35839	
10.27#	Form of Notice of Restricted Stock Unit Award under 2019 Equity Incentive Plan.	10-K	11/25/2020	10.27	001-35839	
10.28#	Consulting Agreement with Nathalie Adda					X
21.1	Subsidiaries of the Company.					X
23.1	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm.					X
31.1	Certification of the Chief Executive Officer pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934.					X
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934.					X

32.1	Certification of the Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	X
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document.	X
101.SCH	Inline XBRL Taxonomy Extension Schema Document	
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)	

Management contract or compensatory plan, contract or agreement.

† Confidential treatment granted as to portions of this Exhibit. The confidential portions of this Exhibit have been omitted and are marked by asterisks.

†† This Exhibit has been filed separately with the commission pursuant to an application for confidentiality treatment. The confidential portions of this Exhibit have been omitted and are marked by asterisks.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Company has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, this 24th day of November, 2021.

ENANTA PHARMACEUTICALS, INC.

By: /s/ Jay R. Luly, Ph.D.
Jay R. Luly, Ph.D.
Chief Executive 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 Company in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Jay R. Luly, Ph.D. Jay R. Luly, Ph.D.	President and Chief Executive Officer and Director (Principal Executive Officer)	November 24, 2021
/s/ Paul J. Mellett Paul J. Mellett	Chief Financial Officer (Principal Financial and Accounting Officer)	November 24, 2021
/s/ Bruce L.A. Carter, Ph.D. Bruce L.A. Carter, Ph.D.	Director	November 24, 2021
/s/ Mark G. Foletta Mark G. Foletta	Director	November 24, 2021
/s/ Yujiro S. Hata Yujiro S. Hata	Director	November 24, 2021
/s/ Kristine Peterson Kristine Peterson	Director	November 24, 2021
/s/ Lesley Russell, MB. Ch.B., MRCP Lesley Russell, MB. Ch.B., MRCP	Director	November 24, 2021
/s/ Terry Vance Terry Vance	Director	November 24, 2021

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ENANTA PHARMACEUTICALS, INC.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Enanta Pharmaceuticals, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Enanta Pharmaceuticals, Inc. and its subsidiary (the "Company") as of September 30, 2021 and 2020, and the related consolidated statements of operations, of comprehensive income (loss), of stockholders' equity and of cash flows for each of the three years in the period ended September 30, 2021, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of September 30, 2021, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of September 30, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended September 30, 2021 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 30, 2021,based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for leases as of October 1, 2019.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting 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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's 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 purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in

accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the 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.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Research and Development and Pharmaceutical Drug Manufacturing Accruals

As described in Notes 2 and 6 to the consolidated financial statements, the Company has entered into various contracts with third parties to perform research and development and pharmaceutical drug manufacturing. When billing terms under these contracts do not coincide with the timing of when the work is performed, management is required to make estimates of outstanding obligations as of period end to those third parties. Within accrued expenses and other current liabilities, total accrued research and development expenses and accrued pharmaceutical drug manufacturing amounted to $6.1 million and $8.4 million as of September 30, 2021, respectively. The accrual estimates are based on a number of factors, including management's knowledge of the research and development programs and pharmaceutical drug manufacturing activities and associated timelines, invoicing to date, and the provisions in the contract. Significant judgments and estimates are made in determining the accrued balances at the end of any reporting period.

The principal considerations for our determination that performing procedures relating to research and development and pharmaceutical drug manufacturing accruals is a critical audit matter are the significant judgment by management in developing the accrual estimates, as the estimates are based on a number of factors, including management's knowledge of the research and development programs and pharmaceutical drug manufacturing activities and associated timelines, invoicing to date, and the provisions in the contracts, which in turn led to a high degree of auditor judgment, subjectivity and effort in performing procedures and evaluating management's significant assumptions related to progress towards completion of the research and development programs and pharmaceutical drug manufacturing activities.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to accrued research and development expenses and accrued pharmaceutical drug manufacturing, including controls over the review of contracts and assessment of progress of the accrued research and development programs and accrued pharmaceutical drug manufacturing activities. These procedures also included, among others (i) testing management's process for developing estimates based upon the progress of the research and development programs and pharmaceutical drug manufacturing activities; (ii) evaluating the appropriateness of the method used by management to develop the estimates; (iii) reading research and development and pharmaceutical drug manufacturing contracts on a test basis; (iv) evaluating the completeness and accuracy of data used by management; and (v) evaluating the reasonableness of significant assumptions related to the progress towards completion. Evaluating management's assumptions related to progress towards completion of the research and development programs and pharmaceutical drug manufacturing activities included evaluating whether the assumptions were reasonable considering the associated timelines, invoicing to date and the provisions in the contracts.

/s/ PricewaterhouseCoopers LLP
Boston, Massachusetts
November 24, 2021

We have served as the Company's auditor since 1999.

ENANTA PHARMACEUTICALS, INC.

CONSOLIDATED BALANCE SHEETS
(in thousands, except per share data)

	September 30, 2021	September 30, 2020
Assets		
Current assets:		
Cash and cash equivalents	$ 57,206	$ 87,131
Short-term marketable securities	186,796	299,518
Accounts receivable	23,576	23,492
Prepaid expenses and other current assets	14,188	13,655
Income tax receivable	37,255	13,041
Total current assets	319,021	436,837
Long-term marketable securities	108,416	32,634
Property and equipment, net	5,943	8,596
Deferred tax assets	—	345
Operating lease, right-of-use assets	4,711	7,020
Restricted cash	608	608
Other long-term assets	92	92
Total assets	$ 438,791	$ 486,132
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 9,540	$ 5,737
Accrued expenses and other current liabilities	22,429	14,159
Operating lease liabilities	4,203	4,261
Total current liabilities	36,172	24,157
Operating lease liabilities, net of current portion	1,126	3,838
Series 1 nonconvertible preferred stock	1,506	1,479
Other long-term liabilities	558	1,078
Total liabilities	39,362	30,552
Commitments and contingencies (Note 13)		
Stockholders' equity:		
Common stock; $0.01 par value per share, 100,000 shares authorized; 20,238 and 20,077 shares issued and outstanding at September 30, 2021 and September 30, 2020, respectively	202	201
Additional paid-in capital	351,033	326,963
Accumulated other comprehensive income (loss)	(382)	844
Retained earnings	48,576	127,572
Total stockholders' equity	399,429	455,580
Total liabilities and stockholders' equity	$ 438,791	$ 486,132

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

ENANTA PHARMACEUTICALS, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)

	Years Ended September 30,		
	2021	2020	2019
Revenue			
Royalties	$ 97,074	$ 122,473	$ 205,197
Total revenue	97,074	122,473	205,197
Operating expenses:			
Research and development	174,111	136,756	142,213
General and administrative	32,536	27,356	26,246
Total operating expenses	206,647	164,112	168,459
Income (loss) from operations	(109,573)	(41,639)	36,738
Other income (expense), net:			
Interest and investment income, net	2,021	6,471	8,819
Change in fair value of Series 1 nonconvertible preferred stock	(27)	149	—
Total other income (expense), net	1,994	6,620	8,819
Income (loss) before income taxes	(107,579)	(35,019)	45,557
Income tax (expense) benefit	28,583	(1,149)	826
Net income (loss)	$ (78,996)	$ (36,168)	$ 46,383
Net income (loss) per share:			
Basic	$ (3.92)	$ (1.81)	$ 2.37
Diluted	$ (3.92)	$ (1.81)	$ 2.21
Weighted average shares outstanding:			
Basic	20,171	19,940	19,584
Diluted	20,171	19,940	20,968

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

ENANTA PHARMACEUTICALS, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(in thousands)

	Years Ended September 30,		
	2021	2020	2019
Net income (loss)	$ (78,996)	$ (36,168)	$ 46,383
Other comprehensive income (loss):			
Net unrealized gain (loss) on marketable securities, net of tax expense (benefit) of $0, $388, and $173	(1,226)	698	544
Total other comprehensive income (loss), net of tax	(1,226)	698	544
Comprehensive income (loss)	$ (80,222)	$ (35,470)	$ 46,927

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

ENANTA PHARMACEUTICALS, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands)

	Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Stockholders' Equity
	Shares	Amount				
Balances at September 30, 2018	19,395	$ 194	$ 276,526	$ (398)	$ 117,357	$ 393,679
Exercise of stock options and warrants	231	2	6,846	—	—	6,848
Vesting of restricted stock units, net of withholding	77	1	(4,189)	—	—	(4,188)
Stock-based compensation expense	—	—	19,226	—	—	19,226
Other comprehensive loss, net of tax	—	—	—	544	—	544
Net income	—	—	—	—	46,383	46,383
Balances at September 30, 2019	19,703	197	298,409	146	163,740	462,492
Exercise of stock options	327	4	10,477	—	—	10,481
Vesting of restricted stock units, net of withholding	47	—	(1,498)	—	—	(1,498)
Stock-based compensation expense	—	—	19,575	—	—	19,575
Other comprehensive income, net of tax	—	—	—	698	—	698
Net loss	—	—	—	—	(36,168)	(36,168)
Balances at September 30, 2020	20,077	201	326,963	844	127,572	455,580
Exercise of stock options	129	1	3,613	—	—	3,614
Vesting of restricted stock units, net of withholding	32	—	(534)	—	—	(534)
Stock-based compensation expense	—	—	20,991	—	—	20,991
Other comprehensive loss	—	—	—	(1,226)	—	(1,226)
Net loss	—	—	—	—	(78,996)	(78,996)
Balances at September 30, 2021	20,238	$ 202	$ 351,033	$ (382)	$ 48,576	$ 399,429

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

ENANTA PHARMACEUTICALS, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Years Ended September 30,		
	2021	2020	2019
Cash flows from operating activities			
Net income (loss)	$ (78,996)	$ (36,168)	$ 46,383
Adjustments to reconcile net income to net cash provided by operating activities:			
Stock-based compensation expense	20,991	19,575	19,226
Depreciation and amortization expense	3,334	3,644	3,258
Deferred income taxes	345	10,608	(3,138)
Premium paid on marketable securities	(4,028)	(3,575)	(1,491)
(Accretion) amortization of (discount) premium on marketable securities	2,116	304	(4,336)
Change in fair value of warrant liability and Series 1 nonconvertible preferred stock	27	(149)	—
Other non-cash items	(97)	(51)	25
Change in operating assets and liabilities:			
Accounts receivable	(84)	27,821	15,892
Prepaid expenses and other current assets	(533)	(7,270)	(1,929)
Income tax receivable	(24,214)	(4,127)	(8,916)
Operating lease, right-of-use assets	5,418	3,184	—
Accounts payable	3,774	(883)	1,791
Accrued expenses	8,350	(1,368)	5,750
Income taxes payable	—	—	(1,388)
Operating lease liabilities	(5,879)	(3,535)	—
Other long-term liabilities	(520)	(922)	291
Net cash provided by (used in) operating activities	(69,996)	7,088	71,418
Cash flows from investing activities			
Purchase of marketable securities	(307,348)	(338,553)	(549,312)
Proceeds from maturities and sale of marketable securities	345,089	359,828	468,065
Purchase of property and equipment	(750)	(1,445)	(5,417)
Net cash provided by (used in) investing activities	36,991	19,830	(86,664)
Cash flows from financing activities			
Proceeds from exercise of stock options and warrants	3,614	10,481	6,848
Payments for settlement of share-based awards	(534)	(1,498)	(4,188)
Payments of capital lease obligations	—	—	(86)
Net cash provided by financing activities	3,080	8,983	2,574
Net increase (decrease) in cash and cash equivalents	(29,925)	35,901	(12,672)
Cash, cash equivalents and restricted cash at beginning of period	87,739	51,838	64,510
Cash, cash equivalents and restricted cash at end of period	$ 57,814	$ 87,739	$ 51,838
Supplemental disclosure of cash flow information:			
Cash paid for income taxes	$ 32	$ 105	$ 12,672
Non-cash items:			
Purchases of fixed assets included in accounts payable and accrued expenses	$ 137	$ 188	$ 320
Operating lease liabilities arising from obtaining right-of-use assets	$ 3,320	$ 3,053	$ —

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

1. Nature of the Business

Enanta Pharmaceuticals, Inc. (the "Company"), incorporated in Delaware in 1995, is a biotechnology company that uses its robust, chemistry-driven approach and drug discovery capabilities to become a leader in the discovery and development of small molecule drugs for the treatment of viral infections and liver diseases. The Company discovered glecaprevir, the second of two protease inhibitors discovered and developed through its collaboration with AbbVie for the treatment of chronic hepatitis C virus, or HCV. Glecaprevir is co-formulated as part of AbbVie's leading direct-acting antiviral, or DAA, combination treatment for HCV, which is marketed under the tradenames MAVYRET® (U.S.) and MAVIRET® (ex-U.S.) (glecaprevir/pibrentasvir). Royalties from the Company's AbbVie collaboration and its existing financial resources provide funding to support the Company's wholly-owned research and development programs, which are primarily focused on the following disease targets: respiratory syncytial virus ("RSV"), hepatitis B virus ("HBV"), SARS-CoV-2, and human metapneumovirus ("hMPV").

The Company is subject to many of the risks common to companies in the biotechnology industry, including but not limited to, the uncertainties of research and development, competition from technological innovations of others, dependence on collaborative arrangements, protection of proprietary technology, dependence on key personnel and compliance with government regulation. Product candidates currently under development will require significant additional research and development efforts, including extensive preclinical and clinical testing and regulatory approvals, prior to commercialization. These efforts require significant amounts of capital, adequate personnel and infrastructure, and extensive compliance reporting capabilities.

COVID-19

In March 2020, the World Health Organization declared COVID-19 a global pandemic and countries worldwide implemented various measures to contain the spread of the virus. National, state and local governments in affected regions have implemented and may continue to implement safety precautions, including quarantines, border closures, increased border controls, travel restrictions, shelter-in-place orders and shutdowns, business closures, cancellations of public gatherings and other measures. The extent and severity of the impact on the Company's business and clinical trials will be determined largely by the extent to which there are disruptions in the supply chains for its research and product candidates, delays in the conduct of ongoing and future clinical trials, or reductions in the number of patients accessing AbbVie's HCV regimens, or any combination of those events. During the second half of fiscal 2020 and through 2021, AbbVie experienced a decline in HCV sales compared to prior years as a result of a decline in patients accessing AbbVie's HCV regimens due to the COVID-19 pandemic. This resulted in a decline in the Company's royalty revenue earned for the years ended September 30, 2021 and 2020.

The full extent to which the COVID-19 pandemic will directly or indirectly impact the Company's business, results of operations and financial condition will depend on future developments that are highly uncertain and cannot be accurately predicted, including new information that may emerge concerning COVID-19 and public health actions taken to contain it, as well as the cumulative economic impact of both of those factors.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements include those of the Company and its subsidiary, Enanta Pharmaceuticals Security Corporation, after elimination of all intercompany accounts and transactions. The accompanying consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP").

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period. Significant estimates and assumptions reflected in these consolidated financial statements include, but are not limited to, management's judgments with respect to its revenue arrangements; valuation of stock-based awards and the accrual of research and development expenses. Estimates are periodically reviewed in light of changes in circumstances, facts and experience. The future developments of the COVID-19 pandemic also may directly or indirectly impact the Company's business. The Company has made estimates of the impact of COVID-19 in the Company's consolidated financial statements as of September 30, 2021. Actual results could differ from the Company's estimates.

Cash Equivalents and Marketable Securities

The Company considers all short-term, highly liquid investments with original maturities of ninety days or less at acquisition date to be cash equivalents. Marketable securities with original maturities of greater than ninety days and remaining maturities of less than one year from the balance sheet date are classified as short-term marketable securities. Marketable securities with remaining maturities of greater than one year from the balance sheet date are classified as long-term marketable securities.

The Company classifies all of its marketable securities as available-for-sale. The Company continually evaluates the credit ratings of its investment portfolio and underlying securities. The Company invests in accordance with its investment policy and invests at the date of purchase in securities with a rating of A3/A- or higher according to Moody's or S&P or A- by Fitch. The Company reports available-for-sale investments at fair value as of each balance sheet date and records any unrealized gains or losses as a component of stockholders' equity. The cost of securities sold is determined on a specific identification basis, and realized gains and losses are included in other income (expense), net within the consolidated statements of operations. When the fair value is below the amortized cost of a marketable security, an estimate of expected credit losses is made. The credit-related impairment amount is recognized in the consolidated statements of operations. Credit losses are recognized through the use of an allowance for credit losses account in the consolidated balance sheet and subsequent improvements in expected credit losses are recognized as a reversal of an amount in the allowance account. If the Company has the intent to sell the security or it is more likely than not that the Company will be required to sell the security prior to recovery of its amortized cost basis, then the allowance for the credit loss is written-off and the excess of the amortized cost basis of the asset over its fair value is recorded in the consolidated statements of operations. There were no credit losses recorded during the years ended September 30, 2021, 2020, and 2019.

Restricted Cash

As of September 30, 2021 and 2020 the Company had an outstanding letter of credit collateralized by a money market account of $608 to the benefit of the landlord of one of the Company's existing building leases. This amount was classified as long-term restricted cash as of September 30, 2021 and 2020.

Concentration of Credit Risk and of Significant Customers and Suppliers

Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash, cash equivalents, marketable securities and accounts receivable. The Company has all cash and investment balances at one accredited financial institution, including cash in amounts that exceed federally insured limits. The Company does not believe that it is subject to unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

The Company has historically generated the majority of its revenue from its collaborative research and license agreements. As of September 30, 2021 and 2020, accounts receivable consisted of amounts due from the Company's principal collaborator (see Note 7).

The Company is completely dependent on third-party manufacturers for product supply for preclinical and clinical research activities. The Company relies and expects to continue to rely exclusively on several manufacturers to supply the Company with its drug supply requirements related to these activities. These research programs would be adversely affected by a significant interruption in the supply from these third-party manufacturers.

Fair Value Measurements

Certain assets and liabilities are carried at fair value under GAAP. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. A fair value hierarchy is based on three levels of inputs which are used to measure fair value, of which the first two levels are considered observable and the last is considered unobservable:

- Level 1—Quoted prices in active markets for identical assets or liabilities.
- Level 2—Observable inputs (other than Level 1 quoted prices) such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.
- Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

The Company's instruments that are carried at fair value are cash equivalents, marketable securities and the Series 1 nonconvertible preferred stock. The carrying values of accounts receivable, prepaid and other assets, accounts payable and accrued expenses approximate their fair value due to the short-term nature of these assets and liabilities.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation. Depreciation expense is recognized using the straight-line method over the following estimated useful lives:

Laboratory and office equipment	5 years
Leasehold improvements	Shorter of life of lease or estimated useful life
Purchased software	3 years
Computer equipment	3 years
Furniture	7 years

Expenditures for repairs and maintenance of assets are charged to expense as incurred. Costs of major additions and betterments are capitalized and depreciated on a straight-line basis over their useful lives. Upon retirement or sale, the cost and related accumulated depreciation of assets disposed are removed from the accounts and any resulting gain or loss is included in income from operations in the consolidated statements of operations.

Impairment of Long-Lived Assets

The Company reviews long-lived assets, primarily property and equipment, for impairment whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. Factors that the Company considers in deciding when to perform an impairment review include significant underperformance of the business in relation to expectations, significant negative industry or economic trends, and significant changes or planned changes in the use of the assets. If an impairment review is performed to evaluate a long-lived asset for recoverability, the Company compares forecasts of undiscounted cash flows expected to result from the use and eventual disposition of the long-lived asset to its carrying value. An impairment loss would be recognized when estimated undiscounted future cash flows expected to result from the use of an asset are less than its carrying amount. The impairment loss would be based on the excess of the carrying value of the impaired asset over its fair value, determined based on discounted cash flows. To date, the Company has not recorded any impairment losses on long-lived assets.

Revenue Recognition

The Company's revenue has been generated primarily through collaborative research and license agreements. The terms of these agreements contain multiple deliverables, which may include (i) licenses, (ii) research and development activities, and (iii) participation in joint research and development steering committees. The terms of these agreements may include nonrefundable upfront license fees, payments for research and development activities, payments based upon the achievement of certain milestones, and royalty payments based on product sales derived from the collaboration.

The Company recognizes revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods or services. The Company receives sales-based royalties for which the license is deemed to be the predominant item to which the royalties relate and thus the Company recognizes sales-based royalties as the underlying sales are earned.

Research and Development Costs

Included in research and development costs are wages, stock-based compensation and benefits of employees performing research and development, third-party license fees and other operational costs related to the Company's research and development activities, including facility-related expenses and external costs of outside contractors engaged to conduct both preclinical and clinical studies and manufacture quantities of product for preclinical and clinical studies. The Company expenses the cost of each contract as the work is performed.

Upfront payments and milestone payments made for the licensing of technology are expensed as research and development in the period in which they are incurred. Advance payments for goods or services to be received in the future for use in research and development activities are recorded as prepaid expenses. The prepaid amounts are expensed as the related goods are delivered or the services are performed.

Research and Development and Pharmaceutical Drug Manufacturing Accruals

The Company has entered into various contracts with third parties to perform research and development and pharmaceutical drug manufacturing. This includes contracts with contract research organizations ("CROs"), clinical manufacturing organizations ("CMOs"), testing laboratories, research hospitals and not for profit organizations and other entities to support our research and development activities. When billing terms under these contracts do not coincide with the timing of when the work is performed, the Company is required to make estimates of outstanding obligations as of period end to those third parties. The accrual estimates are based on a number of factors, including the Company's knowledge of the research and development programs and pharmaceutical drug manufacturing activities and associated timelines, invoicing to date, and the provisions in the contract. Significant judgments and estimates are made in determining the accrued balances at the end of any reporting period. Actual results could differ from our estimates.

Patent Costs

All patent-related costs incurred in connection with filing and prosecuting patent applications are recorded as general and administrative expenses as incurred.

Stock-Based Compensation

The Company measures all stock options and other stock-based awards granted to employees at fair value on the date of grant. The Company uses the Black-Scholes option-pricing model in the valuation of its stock options. The fair value of performance-based awards and restricted stock units is based on the fair value of the stock on the date of grant. The Company uses the Monte-Carlo model in order to calculate the fair value of the market-based awards. The fair value of options is recognized as stock-based compensation expense over the requisite service period, which is generally the vesting period of the respective award. The Company accounts for stock-based compensation expense related to forfeitures as the forfeitures occur. For awards with graded vesting, the straight-line method of expense recognition is applied to all awards with service-only based conditions. The Company records stock-based compensation expense related to performance-based awards when the performance-based targets are probable of being achieved. The Company classifies stock-based compensation expense in the consolidated statements of operations in the same manner in which the award recipient's payroll costs are classified.

Income Taxes

The Company accounts for income taxes using the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in the financial statements or in the Company's tax returns. Deferred taxes are determined based on the difference between the financial reporting and tax basis of assets and liabilities using enacted tax rates in effect in the years in which the differences are expected to reverse. Changes in deferred tax assets and liabilities are recorded in income tax expense.

The Company assesses the likelihood that its deferred tax assets will be recovered from future taxable income and, to the extent it believes based upon the weight of available evidence, that it is more likely than not that all or a portion of deferred tax assets will not be realized, a valuation allowance is established through a charge to income tax expense. The realization of deferred tax assets is dependent upon the Company's ability to generate future taxable income during the periods in which those temporary differences become deductible. Potential for recovery of deferred tax assets is evaluated by estimating the future taxable profits expected and considering prudent and feasible tax planning strategies.

Uncertain tax positions represent tax positions for which reserves have been established. The Company accounts for uncertainty in income taxes recognized in the consolidated financial statements by applying a two-step process to determine the amount to be recognized. First, the tax position must be evaluated to determine the likelihood that it will be sustained upon external examination by the taxing authorities. If the tax position is deemed more likely than not to be sustained, the tax position is then assessed to determine the amount of benefit to be recognized in the financial statements. The amount that may be recognized is the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement. Income tax expense includes the effects of any resulting tax reserves, or unrecognized tax benefits, that are considered appropriate as well as the related net interest and penalties.

Net Income (Loss) per Share

Basic net income (loss) per common share is computed by dividing the net income by the weighted average number of shares of common stock outstanding for the period. Diluted net income per common share is computed by dividing net income by the weighted average number of common shares outstanding for the period, including potential dilutive common shares assuming the dilutive effect of outstanding stock options and unvested restricted stock units. Market-based awards are included in diluted net income per common

share to the extent they would have vested if the period end date was the market criteria measurement date. In the event the Company reports a net loss for the period, the dilutive effect of options or awards is considered anti-dilutive and disclosed accordingly.

Segment Data

The Company manages its operations as a single segment for the purposes of assessing performance and making operating decisions. The Company is a biotechnology company focused on discovering and developing small molecule drugs for the treatment of viral infections and liver diseases. Revenue is generated exclusively from transactions occurring with partners located in the United States and all assets are held in the United States.

Comprehensive Income (Loss)

Comprehensive income (loss) includes net income (loss) as well as other changes in stockholders' equity that result from transactions and economic events other than those with stockholders. The Company's only element of other comprehensive income (loss) is unrealized gains and losses on available-for-sale marketable securities.

Going Concern

In August 2014, the Financial Accounting Standards Board (the "FASB") issued ASU 2014-15, *Presentation of Financial Statements - Going Concern (Subtopic 205-40)* ("ASU 2014-15"). The Company adopted this standard as of September 30, 2017. The standard requires the Company to assess its ability to continue as a going concern one year beyond the date of filing and, in certain circumstances, provide additional footnote disclosures. Based on a detailed cash forecast incorporating current research and development activities and related spending plans, the Company believes that its current cash, cash equivalents and short-term and long-term marketable securities on hand at September 30, 2021 is sufficient to fund operations for at least the next twelve months beyond the date of issuance of these consolidated financial statements. The amount of capital available will depend on the Company's management of its existing cash, cash equivalents and short-term and long-term marketable securities, as well as the level of future royalties the Company earns under its agreement with AbbVie. If the Company should require financing beyond these resources to fund its research and development efforts, it may not be able to obtain financing on acceptable terms, or at all.

Recently Issued Accounting Pronouncements

In June 2016, the FASB issued ASU No. 2016-13, Financial Instruments—Credit Losses (Topic 326) ("ASU 2016-13"), which introduces a new methodology for accounting for credit losses on financial instruments, including available-for-sale debt securities. The guidance establishes a new "expected loss model" that requires entities to estimate current expected credit losses on financial instruments by using all practical and relevant information. Any expected credit losses are to be reflected as allowances rather than reductions in the amortized cost of available-for-sale debt securities. The Company adopted ASU 2016-13 as of October 1, 2020. For available-for-sale debt securities with unrealized losses, the Company measures credit losses in a manner similar to previous U.S. GAAP, except that losses will be recognized as allowances instead of reductions in the amortized cost of the debt securities. The adoption of ASU 2016-13 did not have a material impact on the consolidated financial statements.

The Company adopted ASU No. 2016-02, *Leases (Topic 842)*, as of October 1, 2019, using the modified retrospective method under ASU No. 2018-11, *Leases (Topic 842): Targeted Improvements*. The transition method allows entities to apply the transition requirements at the effective date rather than at the beginning of the earliest comparative period presented. The Company's reporting for comparative periods is presented in accordance with ASC 840, Leases. Adoption of the new standard resulted in the recording of right of use ("ROU") assets and lease liabilities of $7,151 and $8,622, respectively. The adoption of the standard did not have a material impact on the Company's results of operations or cash flows. The Company elected to use the transition package of three practical expedients, which among other things, allowed the Company to carry forward the historical lease classification. The Company has elected, under Topic 842, the further practical expedient not to separate non-lease components from the lease components to which they relate and instead to combine them and account for them as a single lease component. The Company also elected the accounting policy election to keep leases with a term of twelve months or less off the balance sheet and to recognize payments for those leases on a straight-line basis over the lease term.

ROU assets represent the Company's right to use an underlying asset for the lease term, and lease liabilities represent the Company's obligation to make lease payments arising from the lease. At the inception of the arrangement, the Company determines if an arrangement is a lease based on an assessment of the terms and conditions of the contract. Operating lease ROU assets and lease liabilities are recognized at the commencement date, and thereafter, if modified, based on the present value of lease payments over the lease term. The lease term includes any renewal or early-termination options that the Company is reasonably assured to exercise. The present value of lease payments is determined by using the interest rate implicit in the lease, if that rate is readily determinable; otherwise, the Company uses its estimated secured incremental borrowing rate for that lease term. The underlying assets of the Company's leases as of the adoption date consisted of office and laboratory space.

In March 2017, the FASB issued ASU No. 2017-08, *Receivables—Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization on Purchased Callable Debt Securities* ("ASU 2017-08") which requires companies to amend the amortization period for premiums on debt securities with explicit call features to be the period through the earliest call date rather than through the contractual life of the debt instrument. This amendment aims to more closely align the recognition of interest income with the manner in which market participants price such instruments. The Company adopted the new standard on the effective date of October 1, 2019. The adoption of the standard did not have a material impact on the Company's financial position and results of operations.

In December 2019, the FASB issued ASU No. 2019-12, Simplifying the Accounting for Income Taxes (Topic 740), which removes certain exceptions to the general principles in Topic 740 – Income Taxes and improves consistent application of and simplifies GAAP for other areas of Topic 740 by clarifying and amending existing guidance. This ASU is effective for the Company beginning October 1, 2021 and interim periods within that year, with early adoption permitted. The Company does not expect the adoption of the standard to have a material impact on the Company's financial position or results of operations.

3. Fair Value of Financial Assets and Liabilities

The following tables present information about the Company's financial assets and liabilities that were subject to fair value measurement on a recurring basis as of September 30, 2021 and 2020 and indicate the fair value hierarchy of the valuation inputs utilized to determine such fair value:

	Fair Value Measurements at September 30, 2021 Using:			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Assets:				
Cash equivalents:				
Money market funds	$ 54,819	$ —	$ —	$ 54,819
Marketable securities:				
U.S. Treasury notes	83,038	—	—	83,038
Corporate bonds	—	124,703	—	124,703
Commercial paper	—	87,471	—	87,471
	$ 137,857	$ 212,174	$ —	$ 350,031
Liabilities:				
Series 1 nonconvertible preferred stock	—	—	1,506	1,506
	$ —	$ —	$ 1,506	$ 1,506

	Fair Value Measurements at September 30, 2020 Using:			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Assets:				
Cash equivalents:				
Money market funds	$ 81,502	$ —	$ —	$ 81,502
Marketable securities:				
U.S. Treasury notes	94,208	—	—	94,208
Commercial paper	—	93,909	—	93,909
Corporate bonds	—	144,035	—	144,035
	$ 175,710	$ 237,944	$ —	$ 413,654
Liabilities:				
Series 1 nonconvertible preferred stock	—	—	1,479	1,479
	$ —	$ —	$ 1,479	$ 1,479

Cash equivalents at September 30, 2021 and 2020 consist of money market funds which are readily convertible to cash and with less than 90 days until maturity.

During the years ended September 30, 2021, 2020, and 2019, there were no transfers between Level 1, Level 2 and Level 3.

The fair value of Level 2 instruments classified as marketable securities were determined through third-party pricing services. The pricing services use many observable market inputs to determine value, including reportable trades, benchmark yields, credit spreads, broker/dealer quotes, bids, offers, and current spot rates.

The outstanding shares of Series 1 nonconvertible preferred stock as of September 30, 2021 and 2020 were measured at fair value. These outstanding shares were financial instruments that might have required a transfer of assets because of the liquidation features in

the contract and were therefore recorded as liabilities and measured at fair value. The fair value of the outstanding shares were based on significant inputs not observable in the market, which represented a Level 3 measurement within the fair value hierarchy. The Company utilized a probability-weighted valuation model which takes into consideration various outcomes that may require the Company to transfer assets upon liquidation. Changes in the fair values of the Series 1 nonconvertible preferred stock are recognized in other income (expense), net in the consolidated statements of operations.

The recurring Level 3 fair value measurements of the Company's Series 1 nonconvertible preferred stock using probability-weighted discounted cash flow include the following significant unobservable inputs:

Unobservable Input	Range September 30, 2021	Range September 30, 2020
Probabilities of payout	0%-65%	0%-60%
Discount rate	4.25%	4.25%

The following table provides a rollforward of the aggregate fair value of the Company's outstanding Series 1 nonconvertible preferred stock for which fair value is determined by Level 3 inputs:

	Series 1 Nonconvertible Preferred Stock
	(in thousands)
Balance, September 30, 2018	$ 1,628
No change in fair value	—
Balance, September 30, 2019	1,628
Decrease in fair value	(149)
Balance, September 30, 2020	1,479
Increase in fair value	27
Balance, September 30, 2021	$ 1,506

4. Marketable Securities

As of September 30, 2021 and 2020, the fair value of available-for-sale marketable securities, by type of security, was as follows:

	September 30, 2021				
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Credit Losses	Fair Value
	(in thousands)				
Corporate bonds	$124,678	$ 93	$ (68)	$ —	$ 124,703
Commercial paper	87,471	—	—	—	87,471
U.S. Treasury notes	83,061	3	(26)	—	83,038
	$295,210	$ 96	$ (94)	$ —	$ 295,212

	September 30, 2020				
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Credit Losses	Fair Value
	(in thousands)				
Corporate bonds	$143,274	$ 775	$ (14)	$ —	$ 144,035
Commercial paper	93,909	—	—	—	93,909
U.S. Treasury notes	93,740	468	—	—	94,208
	$330,923	$ 1,243	$ (14)	$ —	$ 332,152

As of September 30, 2021 and 2020, marketable securities consisted of investments that mature within one year, with the exception of certain corporate bonds and U.S. Treasury notes, which have maturities between one and three years and an aggregate fair value of $108,416 and $32,634, respectively.

5. Property and Equipment, Net

Property and equipment, net consisted of the following as of September 30, 2021 and 2020:

	September 30,	
	2021	2020
	(in thousands)	
Laboratory and office equipment	$ 14,499	$ 14,036
Leasehold improvements	7,140	7,089
Purchased software	1,387	1,364
Furniture	1,294	1,276
Computer equipment	529	505
Construction in progress	20	—
	24,869	24,270
Less: Accumulated depreciation and amortization	(18,926)	(15,674)
	$ 5,943	$ 8,596

Depreciation and amortization expense for property and equipment, including assets acquired under capital leases, was $3,334, $3,644 and $3,258 for the years ended September 30, 2021, 2020, and 2019, respectively.

6. Accrued Expenses and Other Current Liabilities and Other Long-Term Liabilities

Accrued expenses and other current liabilities and other long-term liabilities consisted of the following as of September 30, 2021 and 2020:

	September 30,	
	2021	2020
Accrued expenses and other current liabilities:	(in thousands)	
Accrued research and development expenses	$ 6,062	$ 5,407
Accrued payroll and related expenses	6,094	4,777
Accrued pharmaceutical drug manufacturing	8,402	2,885
Accrued professional fees	700	478
Accrued other	1,171	612
	$ 22,429	$ 14,159
Other long-term liabilities:		
Uncertain tax positions	$ 558	$ 788
Asset retirement obligation	—	290
	$ 558	$ 1,078

7. Collaboration Agreements

AbbVie Collaboration

On November 27, 2006, the Company entered into a Collaborative Development and License Agreement (the "AbbVie Agreement") with Abbott Laboratories to identify, develop and commercialize HCV NS3 and NS3/4A protease inhibitor compounds, including paritaprevir and glecaprevir. The agreement was assigned by Abbott to AbbVie Inc. on January 1, 2013 in connection with Abbott's transfer of its research-based pharmaceuticals business to AbbVie.

Under the terms of the AbbVie Agreement, as amended, AbbVie paid the Company upfront license payments and full-time equivalent ("FTE") reimbursements to fund research activities. The Company is also eligible to receive milestone payments for the successful development by AbbVie of one or more HCV compounds, as well as annually tiered, per-product royalties on the portion of AbbVie's net sales of its HCV treatment regimens allocated to the protease inhibitor product.

The Company determined that the deliverables under the AbbVie Agreement included (i) the non-exclusive, royalty-free, worldwide research license and the exclusive, royalty-bearing development and commercialization license, (ii) the research services, and (iii) a

commitment to participate on a steering committee, all of which were to be delivered over a three-year period. The Company concluded that the license did not have standalone value as it was dependent, in part, upon the Company's continuing involvement in the HCV protease inhibitor research and its involvement in the joint steering committee. Additionally, the undelivered items, including the Company's participation in the joint steering committee, which was considered participatory due to its decision making responsibilities, and the research services, did not have vendor-specific objective evidence ("VSOE") or vendor objective evidence ("VOE") of fair value. Therefore, the license, the research services, and the joint steering committee participation were treated as a single unit of accounting. Accordingly, all amounts received were deferred, and revenue was recognized using the proportional performance model over the period during which the Company performed research services in connection with the AbbVie Agreement, as amended.

Subsequent to the research and evaluation period, which ended in June 2011, all decisions related to the development, commercialization and marketing have been made by AbbVie. The Company has the right to continue to attend the joint steering committee meetings to monitor the development and marketing plans; however, the Company has no decision-making rights. As such, the joint steering committee commitment became protective in nature as of June 16, 2011.

From commencement of the collaboration through September 30, 2021 the Company has received an upfront license payment, research funding, milestone payments, and preferred stock financing totaling $396,000 under the AbbVie agreement. Since the Company completed all its performance obligations under the AbbVie Agreement by the end of fiscal 2011, any milestone payments earned since then have been recognized as revenue when the associated milestone was achieved by AbbVie.

The Company is also receiving annually tiered royalties per Company protease product ranging from ten percent up to twenty percent, or on a blended basis from the low double digits up to the high teens, on the portion of AbbVie's calendar year net sales of each HCV regimen that is allocated to the protease inhibitor product in the regimen. Beginning with each January 1, the cumulative net sales of a given royalty-bearing protease inhibitor product start at zero for purposes of calculating the tiered royalties on a product-by-product basis. The following table details the royalty tiers associated with cumulative calendar year net sales allocated to each royalty-bearing product as provided in the AbbVie Agreement:

Calendar Year Net Sales (in thousands)	Royalty Tier (%)
up to $500,000	10%
from $500,000 up to $750,000	12%
from $750,000 up to $1,000,000	14%
from $1,000,000 up to $2,500,000	17%
greater than or equal to $2,500,000	20%

Royalties owed to the Company under the agreement can be reduced by AbbVie in certain circumstances, including (i) if AbbVie exercises its right to license or otherwise acquire rights to intellectual property controlled by a third party where a product could not be legally developed or commercialized in a country without the third-party intellectual property right, (ii) where a product developed under the collaboration agreement is sold in a country and not covered by a valid patent claim in such country, and (iii) where sales of a generic product are equal to at least a specified percentage of AbbVie's market share of its product in a country.

AbbVie's obligation to pay royalties on a product developed under the agreement expires on a country-by-country basis upon the later of (i) the date of expiration of the last of the licensed patents with a valid claim covering the product in the applicable country, or (ii) ten years after the first commercial sale of the product in the applicable country.

Subject to certain exceptions, a party's rights and obligations under the agreement continue until (i) such time as AbbVie is no longer developing a product candidate or (ii) if, as of the time AbbVie is no longer developing any product candidates, AbbVie is commercializing any other protease inhibitor product, such time as all royalty terms for all covered products have ended. Accordingly, the final expiration date of the agreement is currently indeterminable.

Either party may terminate the agreement for cause in the event of a material breach, subject to prior notice and the opportunity to cure, or in the event of the other party's bankruptcy. Additionally, AbbVie may terminate the agreement for any reason upon specified prior notice.

If the Company terminates the agreement for cause or AbbVie terminates without cause, any licenses and other rights granted to AbbVie will terminate and AbbVie will be deemed to have granted the Company (i) a non-exclusive, perpetual, fully-paid, worldwide, royalty-free license, with the right to sublicense, under AbbVie's intellectual property used in any product candidate, and (ii) an exclusive (even as to AbbVie), perpetual, fully-paid, worldwide, royalty-free license, with the right to sublicense, under AbbVie's interest in any joint intellectual property rights to develop product candidates resulting from covered compounds and to commercialize any products derived from such compounds. Upon the Company's request, AbbVie will also transfer to the Company all right, title and interest in any related product trademarks, regulatory filings and clinical trials.

If AbbVie terminates the agreement for the Company's uncured breach, the milestone and royalty payments payable by AbbVie may be reduced, the licenses granted to AbbVie will remain in place, the Company will be deemed to have granted AbbVie an exclusive license under the Company's interest in joint intellectual property, AbbVie will continue to have the right to commercialize any covered products, and all rights and licenses granted to the Company by AbbVie will terminate.

8. Stockholders' Equity

The Company is authorized to issue 100,000 shares of common stock at a par value of $0.01 per share. Each share of common stock entitles the holder to one vote on all matters submitted to a vote of the Company's stockholders. Common stockholders are entitled to receive such dividends as may be declared by the board of directors, if any.

The Company also is authorized to issue 5,000 shares of preferred stock at a par value of $0.01 per share, of which 2,000 shares are designated as Series 1 Nonconvertible preferred stock and 3,000 shares are undesignated and unissued.

9. Series 1 Nonconvertible Preferred Stock and Warrants

The Company's Certificate of Incorporation authorizes the issuance of up to 2,000 shares of Series 1 nonconvertible preferred stock at a par value of $0.01 per share. Holders of Series 1 nonconvertible preferred stock are not entitled to receive dividends. In the event of any liquidation, deemed liquidation, dissolution or winding up of the Company, the Series 1 nonconvertible preferred stockholders are entitled to receive in preference to all other stockholders, an amount equal to $1.00 per share, adjusted for any stock dividends, stock splits or reclassifications. Series 1 nonconvertible preferred stockholders will not be entitled to vote unless required by the Company pursuant to the laws of the State of Delaware. The Company may redeem the Series 1 nonconvertible preferred stock with the approval of the holders of a majority of the outstanding shares of Series 1 nonconvertible preferred stock at a redemption price of $1.00 per share. The Company must redeem the stock within 60 days of such election. Shares that are redeemed will be retired or canceled and not reissued by the Company. As these shares qualify as a derivative, they are classified as a liability on the Company's consolidated balance sheet.

In October and November 2010, a total of 2,000 warrants to purchase Series 1 nonconvertible preferred stock were issued. The warrants had an expiration date of October 4, 2017 and any warrants exercised by that date were converted into Series 1 nonconvertible preferred stock. A total of 1,930 shares of Series 1 nonconvertible preferred stock were outstanding as of September 30, 2021 and 2020. For the years ended September 30, 2021, 2020, and 2019, the remeasurement of the Series 1 nonconvertible preferred stock resulted in income (expense) of $(27), $149, and $0, respectively, which was recorded in other income (expense), net in the consolidated statements of operations. The total fair value of the Series 1 nonconvertible preferred stock was $1,506 and $1,479 as of September 30, 2021 and 2020, respectively.

10. Stock-Based Awards

The Company's 2019 Equity Incentive Plan (the "2019 Plan") permits the Company to sell or issue awards of common stock or restricted common stock or to grant awards of incentive stock options or nonqualified stock options for the purchase of common stock, restricted stock units, performance units, stock appreciation rights or other cash incentive awards, to employees, members of the board of directors and consultants of the Company. The number of shares of common stock that may be issued under the 2019 Plan is subject to increase by the number of shares forfeited under any options forfeited and not exercised under the 2019 Plan or any predecessor plans such as the 2012 Equity Incentive Plan or the 1995 Equity Incentive Plan. As of September 30, 2021, 1,093 shares remained available for future awards under the 2019 Plan.

The 2019 Plan replaces and is the successor to the 2012 Equity Incentive Plan (the "2012 Plan") and the 1995 Equity Incentive Plan (the "1995 Plan"). The 2012 and 1995 Plans provided for the Company to sell or issue awards of common stock or restricted common stock, or to grant awards of incentive stock options or nonqualified stock options for the purchase of common stock, to employees, members of the board of directors and consultants of the Company. Sales, issuances or grants of shares entitle the holder to purchase common stock from the Company, for a specified exercise price, during a period specified by the applicable equity award agreement. Upon the closing of the Company's initial public offering, all remaining shares reserved for issuance under the 1995 Plan were transferred to the 2012 Plan and no further awards were made under the 1995 Plan. Upon the approval of the 2019 Plan by the Company's shareholders in February 2019, all remaining shares reserved for issuance under the 2012 Plan were transferred to the 2019 Plan and no further awards have been made under the 2012 Plan.

Under the Company's Employee Stock Purchase Plan ("ESPP") a total of 186 shares of common stock are reserved for issuance. As of September 30, 2021, the Company had not commenced any offering under the ESPP and no ESPP shares have been issued.

The Company applies the fair value recognition provisions for all stock-based awards granted or modified. In the case of service-based awards, the compensation cost is recorded over the requisite service period of the award on the straight-line method based on the grant-date fair value. The requisite service period for service-based option awards is generally four years. Options granted under the 2019 Plan to employees generally vest over four years and to non-employee directors over one year, and expire after ten years.

Stock Option Valuation

The fair value of each stock option award is determined on the date of grant using the Black-Scholes option-pricing model. The volatility has been determined using the Company's traded stock price following our March 2013 IPO to estimate expected volatility. The expected term of the Company's options has been determined utilizing the "simplified" method for awards that qualify as "plain-vanilla" options. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. The expected dividend yield is zero on the fact that the Company has never paid cash dividends and does not expect to pay any cash dividends in the foreseeable future. As required under our equity plans, the exercise price for awards granted is not to be less than the fair value of common shares as estimated by the Company as of the date of grant. The relevant data used to determine the value of the stock option awards are as follows, presented on a weighted average basis:

	Years Ended September 30,		
	2021	2020	2019
Risk-free interest rate	0.61%	1.41%	2.76%
Expected term (in years)	6.05	6.02	6.05
Expected volatility	52%	53%	55%
Expected dividends	0%	0%	0%
Weighted average grant date fair value	$ 21.76	$ 30.47	$ 44.66

The following table summarizes stock option activity, including aggregate intrinsic value for the year ended September 30, 2021:

	Shares Issuable Under Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term in years	Aggregate Intrinsic Value
	(in thousands)			(in thousands)
Outstanding as of September 30, 2020	3,262	$ 49.82	6.5	$ 21,860
Granted	901	45.01		
Exercised	(129)	27.99		
Forfeited	(182)	67.01		
Outstanding as of September 30, 2021	3,852	$ 48.61	6.4	$ 49,173
Options vested and expected to vest as of September 30, 2021	3,852	$ 48.61	6.4	$ 49,173
Options exercisable as of September 30, 2021	2,520	$ 45.91	5.2	$ 39,356

The aggregate intrinsic value of options is calculated as the difference between the exercise price of the options and the fair value of the Company's common stock. The following tables summarize additional exercise and grant date information:

	Years Ended September 30,		
	2021	2020	2019
		(in thousands)	
Aggregate intrinsic value of stock options exercised	$ 2,704	$ 7,850	$ 13,855
Proceeds to Company from stock options exercised	$ 3,614	$ 10,481	$ 6,848

Market and Performance-Based Stock Unit Awards

The Company awards both performance share units, or PSUs, and relative total stockholder return units, or rTSRUs, to its executive officers.

The PSUs vest and result in issuance, or settlement, of common shares for each recipient, based upon the recipient's continued employment with the Company through the settlement date of the award and the Company's achievement of specified research and development milestones. The requisite service period of the PSUs is generally 2 years. The fair value of PSUs is based on the fair

value of the stock on the date of grant which is determined to be the closing price of our common stock. The fair value of PSUs is recorded in the financial statements when it is probable that the specified research and development milestone is achieved.

The rTSRUs vest and result in the issuance of common stock based upon the recipient's continuing employment with the Company through the settlement date of the award and the relative ranking of the total stockholder return, or TSR, of the Company's common stock in relation to the TSR of the component companies in the NASDAQ Biotech Index over two specified periods that are two years apart, based on a comparison of average closing stock prices in specified periods noted in the award agreement. The number of market-based rTSRUs awarded represents the target number of shares of common stock that may be earned; however, the actual number of shares that may be earned ranges from 0% to 150% of the target number, depending on the award agreement and the year of the award. The Company used a Monte Carlo model to estimate the grant-date fair value of the rTSRUs. Assumptions and estimates utilized in the calculation of the fair value of the rTSRUs include the risk-free interest rate, dividend yield, expected volatility based on the historical volatility of publicly traded peer companies and the remaining performance period of the award. The table below sets forth the weighted average grant date fair value assumptions used to value the rTSRUs:

	Years Ended September 30,		
	2021	2020	2019
Risk-free interest rate	0.13%	1.62%	2.65%
Dividend yield	0%	0%	0%
Expected volatility	74%	68%	62%
Remaining performance period (years)	1.97	2.03	2.03

The following table summarizes PSU and rTSRU activity (at target) for the year ended September 30, 2021:

	PSUs		rTSRUs	
	Shares	Weighted Average Grant Date Fair Value per Share	Shares	Weighted Average Grant Date Fair Value per Share
	(in thousands, except per share data)			
Unvested at September 30, 2020	46	$ 65.23	46	$ 46.46
Granted	84	44.58	84	26.55
Vested	—	—	—	—
Cancelled	(19)	67.13	(19)	47.42
Unvested at September 30, 2021	111	$ 49.31	111	$ 31.26

A total of 80% of target PSUs and 200% of target rTSRUs granted in January 2017 vested during the year ended September 30, 2019, resulting in the issuance of an aggregate of 125 common shares, net of share withholding for income taxes. A total of 15% of target PSUs and 90% of target rTSRUs granted in March 2018 vested during the year ended September 30, 2020, resulting in the issuance of 23 common shares, net of share withholding for income taxes. The total fair value of PSUs and rTSRUs vested during the years ended September 30, 2021, 2020, and 2019 were $0, $1,227 and $11,074, respectively.

Restricted Stock Units

In November 2016, the Company awarded restricted stock units to its employees, which vest as to 50% of the units on the third anniversary of the award and 50% on the fourth anniversary of the award, provided the employee remains employed with the Company at the time of vesting. The fair value of these awards was determined based on the fair value of the stock on the date of grant which is determined to be the closing price of the common stock on November 15, 2016 and is recognized as stock-based compensation expense over the requisite service period. The following table summarizes the restricted stock unit activity for the year to date period ending September 30, 2021:

	Restricted Stock Units	Weighted Average Grant Date Fair Value per Share
	(in thousands, except per share data)	
Unvested at September 30, 2020	45	$ 30.00
Granted	123	43.57
Vested	(45)	30.00
Cancelled	(6)	41.40
Unvested at September 30, 2021	117	$ 43.57

The total fair value of restricted stock units vested during the years ended September 30, 2021, 2020, and 2019 were $1,897, $3,149 and $0, respectively.

Stock-Based Compensation Expense

The Company recorded the following stock-based compensation expense for the years ended September 30, 2021, 2020, and 2019:

	Years Ended September 30,		
	2021	2020	2019
		(in thousands)	
Research and development	$ 10,075	$ 10,096	$ 8,833
General and administrative	10,916	9,479	10,393
	$ 20,991	$ 19,575	$ 19,226

	Years Ended September 30,		
	2021	2020	2019
		(in thousands)	
Stock options	$ 18,004	$ 17,459	$ 15,854
rTSRUs	1,537	1,216	1,568
PSUs	235	259	1,278
Restricted stock units	1,215	641	526
	$ 20,991	$ 19,575	$ 19,226

As of September 30, 2021, the Company had an aggregate of $42,222 of unrecognized stock-based compensation cost, which is expected to be recognized over a weighted average period of 2.3 years.

11. Net Income (Loss) Per Share

Basic and diluted net income (loss) per common share was calculated as follows for the years ended September 30, 2021, 2020, and 2019:

	Years Ended September 30,		
	2021	2020	2019
	(in thousands, except per share data)		
Basic net income (loss) per share:			
Numerator:			
Net income (loss)	$ (78,996)	$ (36,168)	$ 46,383
Denominator:			
Weighted average common shares outstanding — basic	20,171	19,940	19,584
Net income (loss) per share common share — basic	$ (3.92)	$ (1.81)	$ 2.37
Diluted net income (loss) per share:			
Numerator:			
Net income (loss)	$ (78,996)	$ (36,168)	$ 46,383
Denominator:			
Weighted average common shares outstanding — basic	20,171	19,940	19,584
Dilutive effect of common stock equivalents	—	—	1,384
Weighted average common shares outstanding — diluted	20,171	19,940	20,968
Net income (loss) per share common share — diluted	$ (3.92)	$ (1.81)	$ 2.21
Anti-dilutive common stock equivalents excluded from above	4,297	3,502	843

The impact of certain common stock equivalents were excluded from the computation of diluted net income per common share for the years ended September 30, 2021, 2020, and 2019, because those awards had an anti-dilutive impact due to the assumed proceeds per share using the treasury stock method being greater than the average fair value of the Company's common shares for those periods. In addition, for periods in which the Company reported a net loss no dilution was reported.

As of September 30, 2019, the Company excluded unvested performance stock unit awards from the calculation of diluted net income per common share as these awards contain performance conditions that would not have been achieved as of the end of each reporting period had the measurement period ended as of that date.

12. Leases

The Company has two real estate leases for properties located in Watertown, Massachusetts. The first lease, for office and laboratory space at 500 Arsenal Street, was effective in fiscal 2011 and expires in September 2022 with an option to extend the lease term for an additional five years. The second lease, for office space located at 400 Talcott Avenue, was effective September 2018 and expires in August 2024 with two options to extend the lease term for an additional three years each. The options to extend the lease terms were not included in the right-of-use assets and lease liabilities as they were not reasonably certain of being exercised. The lease payments for the office and laboratory space include fixed lease payments that escalate over the terms of the leases. Additionally, the Company's office and laboratory space leases require the Company to pay for certain operating expenses based on actual costs incurred and therefore as the amounts are variable in nature are expensed in the period incurred and included in variable lease costs. The leases do not include any restrictions or covenants that had to be accounted for under the lease guidance.

In October 2019, the Company entered into an agreement to lease units of equipment over eighteen-month lease periods commencing upon shipment of each unit. The lease agreement contains an option to terminate the lease early, however this early-termination option was not included in the right-of-use asset and lease liability as it was not reasonably certain of being exercised. The equipment lease requires the Company to pay for certain consumable and peripheral equipment supplies based on actual costs incurred and therefore, as these costs are variable in nature, they are expensed in the period incurred and included in variable lease costs.

The components of lease expense for the Company's real estate and equipment leases were as follows:

	Years Ended September 30,	
	2021	2020
	(in thousands)	
Operating lease cost	$ 5,861	$ 3,776
Short-term lease cost	—	—
Variable lease cost	4,057	2,338
	$ 9,918	$ 6,114

	Years Ended September 30,	
	2021	2020
	(in thousands)	
Cash paid for amounts included in the measurement of operating lease liabilities	$ 6,364	$ 4,126
Operating lease liabilities arising from obtaining right-of-use assets	$ 3,320	$ 3,053

	September 30,	
	2021	2020
Weighted-average remaining lease term - operating leases (in years)	1.43	2.20
Weighted-average discount rate - operating leases	6.08%	6.50%

As the Company's leases do not provide an implicit rate, the Company utilized its incremental borrowing rate based on information available at the lease commencement date, which represents an internally developed rate that would be incurred to borrow, on a collateralized basis, over a similar term, an amount equal to the lease payments in a similar economic environment.

Future annual minimum lease payments under the Company's real estate and equipment operating leases as of September 30, 2021 were as follows:

Years ended September 30,	(in thousands)
2022	4,391
2023	675
2024	519
2025	—
2026	—
Total future minimum lease payments	5,585
Less: Imputed interest	(256)
Total operating lease liabilities	$ 5,329

Included in the balance sheet:	2021	2020
	(in thousands)	
Current operating lease liabilities	$ 4,203	$ 4,261
Operating lease liabilities, net of current portion	1,126	3,838
Total operating lease liabilities	$ 5,329	$ 8,099

In connection with one of the real estate leases, the Company has a total outstanding letter of credit in the amount of $608 as of September 30, 2021 and 2020 collateralized by a money market account. As of September 30, 2021 and 2020, the Company classified the $608 related to the money market account as long-term restricted cash.

13. Commitments and Contingencies

Litigation and Contingencies Related to Use of Intellectual Property

From time to time, the Company may become subject to legal proceedings, claims and litigation arising in the ordinary course of business. The Company currently is not a party to any threatened or pending litigation. However, third parties might allege that the Company or its collaborators are infringing their patent rights or that the Company is otherwise violating their intellectual property rights. Such third parties may resort to litigation against the Company or its collaborators, which the Company has agreed to indemnify. With respect to some of these patents, the Company expects that it will be required to obtain licenses and could be required to pay license fees or royalties, or both. These licenses may not be available on acceptable terms, or at all. A costly license, or inability to obtain a necessary license, would have a material adverse effect on the Company's financial condition, results of operations or cash flows. The Company accrues contingent liabilities when it is probable that future expenditures will be made and such expenditures can be reasonably estimated.

Indemnification Agreements

In the ordinary course of business, the Company may provide indemnifications of varying scope and terms to customers, vendors, lessors, business partners, and other parties with respect to certain matters including, but not limited to, losses arising out of breach of such agreements or from services to be provided to the Company, or from intellectual property infringement claims made by third

parties. In addition, the Company has entered into indemnification agreements with members of its board of directors and its executive officers that will require the Company, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors or officers. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is, in many cases, unlimited. To date, the Company has not incurred any material costs as a result of such indemnifications. In addition, the Company maintains officers and directors insurance coverage. The Company does not believe that the outcome of any claims under indemnification arrangements will have a material effect on its financial position, results of operations or cash flows, and has not accrued any liabilities related to such obligations in its financial statements as of September 30, 2021 and 2020.

14. Income Taxes

Income before income taxes for all periods presented is from domestic operations, which are the Company's only operations. During the years ended September 30, 2021, 2020, and 2019, the Company recorded income tax benefit (expense) as follows:

	Years Ended September 30,		
	2021	2020	2019
		(in thousands)	
Current income tax benefit (expense):			
Federal	$ 28,721	$ 8,491	$ (1,841)
State	205	941	(372)
Deferred income tax benefit (expense):			
Federal	(343)	(8,916)	2,431
State	—	(1,665)	608
Income tax (expense) benefit	$ 28,583	$ (1,149)	$ 826

A reconciliation of the U.S. federal statutory income tax rate to the Company's effective tax rate is as follows:

	Years Ended September 30,		
	2021	2020	2019
Federal statutory income tax rate	(21.0%)	(21.0%)	21.0%
State taxes, net of federal benefit	(2.3)	(2.8)	1.8
Change in valuation allowance	9.9	52.1	—
Federal research and development tax credit	(5.3)	(13.3)	(12.8)
Share-based compensation	2.4	2.8	(6.7)
Change in deferred tax rate	(9.5)	(10.2)	—
Foreign-derived intangible income	—	—	(3.2)
Other	(0.8)	(4.3)	(1.9)
Effective income tax rate	(26.6%)	3.3%	(1.8%)

The negative federal statutory income tax rate during the years ended September 30, 2021 and 2020 reflects an income tax benefit due to the Company's ability to carryback the pre-tax loss for the year under the Coronavirus Aid, Relief and Economic Security Act ("CARES Act"). The Company recorded an income tax receivable of $37,255 and $13,041 as of September 30, 2021 and 2020 which primarily consists of the federal net operating loss carryback generated during the years ended September 30, 2021 and 2020.

Changes in the valuation allowance for deferred tax assets during the years ended September 30, 2021, 2020, and 2019 are as follows:

	Years Ended September 30,		
	2021	2020	2019
		(in thousands)	
Valuation allowance, beginning of year	$ (18,259)	$ —	$ —
Increase recorded to valuation allowance	(11,039)	—	—
Initial recording of valuation allowance	—	(18,259)	—
Valuation allowance, end of year	$ (29,298)	$ (18,259)	$ —

Net deferred tax assets as of September 30, 2021 and 2020 consisted of the following:

	September 30,	
	2021	2020
	(in thousands)	
Deferred tax assets:		
Share-based compensation	$ 11,843	$ 11,071
Tax credit carryforwards	13,170	6,574
Operating lease liability	1,232	2,468
Accrued compensation	1,284	1,598
Net operating loss carryforward	3,095	861
Accrued expenses	378	245
Other temporary differences	366	444
Total deferred tax assets	31,368	23,261
Valuation allowance	(29,298)	(18,259)
Net deferred tax assets	2,070	5,002
Deferred tax liabilities:		
Right of use asset	(1,110)	(2,221)
Depreciation	(684)	(1,650)
Prepaid expenses	(275)	(364)
Unrealized loss	(1)	(422)
Total deferred tax liabilities	(2,070)	(4,657)
Net deferred income tax assets (liabilities)	$ —	$ 345

The net deferred tax asset is presented as a long-term asset on the consolidated balance sheets.

As of September 30, 2021, the Company had a federal and state research and development tax credit carryforward of $11,251 and $2,058, respectively, for tax return purposes, a majority of which begin to expire in 2039. In addition, the Company had state net operating losses of $3,095 as of September 30, 2021 which begin to expire in 2040.

As of September 30, 2021, the Company has $29,298 in net deferred tax assets, prior to consideration of a valuation allowance. These deferred tax assets include $11,843 related to stock compensation awards that would create a tax benefit in the future against future taxable income and federal research and development tax credit carryforwards totaling $13,170. The Company considers it more likely that it will not have sufficient taxable income in the future that will allow it to realize all of its existing deferred tax assets. This is due to the fact the Company continues to progress its wholly-owned research and development programs and its declining royalty revenues from its Collaboration Agreement with AbbVie. As a result, the Company continued to record a valuation allowance of $29,298 as of September 30, 2021 against its deferred tax assets to reduce a portion of the Company's deferred tax assets for which the Company does not believe it is more likely than not these will be realized.

The Company files tax returns as prescribed by the tax laws of the jurisdictions in which it operates. In the normal course of business, the Company is subject to examination by federal and state jurisdictions, where applicable. The Company's tax years in the U.S. are still open under statute from 2017 to the present. Earlier years may be examined to the extent that tax credit or net operating loss carryforwards are used in future periods. The Company has not received notice of examination by any other jurisdictions for any other tax year open under statute.

In response to the COVID-19 pandemic, the CARES Act was signed into law in March 2020. The CARES Act lifts certain deduction limitations originally imposed by the Tax Cuts and Jobs Act of 2017 (the "Tax Act"). Under the CARES Act, the Company is permitted to carryback net operating losses for up to five years for losses generated in fiscal 2018 through fiscal 2021. Net operating loss carrybacks were previously prohibited under the Tax Act. The CARES Act also eliminates the 80% of taxable income limitations by allowing corporate entities to fully utilize net operating loss carryforwards to offset taxable income in fiscal years 2018, 2019 or 2020. In addition, the CARES Act makes qualified improvement property eligible for 15-year cost-recovery and 100% bonus depreciation. The enactment of the CARES Act resulted in a $28,721 and $8,581 income tax benefit related to a federal net operating loss carryback at the previously enacted 35% rate in the Company's consolidated financial statements during the years ended September 30, 2021 and 2020, respectively.

Uncertain tax positions represent tax positions for which reserves have been established. The Company's policy is to record interest and penalties related to uncertain tax positions as part of income tax expense. Total interest related to uncertain tax positions recorded

as a liability on the Company's consolidated balance sheets were $105 and $103 as of September 30, 2021 and 2020, respectively. A reconciliation of the beginning and ending amount of uncertain tax positions is summarized as follows:

	September 30,	
	2021	2020
	(in thousands)	
Beginning Balance	$ 844	$ 1,650
Additions based on tax positions for the current period	10	11
Reductions for tax positions due to lapse of statute of limitations	(134)	(719)
Reductions for tax positions of prior periods	(98)	(98)
Ending Balance	$ 622	$ 844

The Company does not expect that its uncertain tax position will materially change within the next twelve months.

15. 401(k) Plan

The Company has a 401(k) plan. This plan covers substantially all employees who meet minimum age and service requirements. During the years ended September 30, 2021, 2020, and 2019, the Company recognized $1,353, $1,190, and $1,068 respectively, of expense related to its contributions to this plan.

16. Subsequent Events

On November 19, 2021, the Company exercised its option to extend the lease term of its existing office and laboratory space at 500 Arsenal Street for an additional 5 years through September 1, 2027. The updated minimum lease payments related to the 500 Arsenal Street lease as a result of the extension are as follows:

Years ended September 30,	(in thousands)
2022	2,487
2023	3,502
2024	3,607
2025	3,715
2026	3,827
Thereafter	3,604
Total future minimum lease payments	$ 20,742

MANAGEMENT TEAM

Jay R. Luly, Ph.D.
President, Director and Chief Executive Officer

Nathalie Adda, M.D.
Senior Vice President and Chief Medical Officer

Nathaniel S. Gardiner, J.D.
Senior Vice President and General Counsel

Tara L. Kieffer, Ph.D.
Senior Vice President, New Product Strategy and Development

Brendan Luu
Senior Vice President, Business Development

Paul J. Mellett
Senior Vice President, Finance and Administration and Chief Financial Officer

Yat Sun Or, Ph.D.
Senior Vice President, Research and Development and Chief Scientific Officer

BOARD OF DIRECTORS

Bruce L. A. Carter, Ph.D.
Non-Executive Chairman of the Board, Enanta Pharmaceuticals, Inc.
Former President and Chief Executive Officer, ZymoGenetics, Inc.

Mark G. Foletta
Former Chief Financial Officer, Amylin Pharmaceuticals, Inc. and other companies

Yujiro S. Hata
Founder and Chief Executive Officer, IDEAYA Biosciences, Inc.

Jay R. Luly, Ph.D.
President and Chief Executive Officer, Enanta Pharmaceuticals, Inc.

Kristine Peterson
Former Chief Executive Officer, Valeritas, Inc.

Lesley Russell, MBChB, MRCP
Former Chief Medical Officer, Cephalon, Inc. and other companies

Terry C. Vance
Private consultant and former biotechnology venture capital investor

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Investor Inquiries
Investor Inquiries (including requests for a copy of Enanta's Annual Report on Form 10-K, available free of charge) should be directed to:

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The 2021 Annual Report on Form 10-K and other investor information are available in the *Investors* section of Enanta's website at www.enanta.com.

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