# UNITED STATES
# SECURITIES AND EXCHANGE COMMISSION
**WASHINGTON, DC 20549**

# FORM 10-Q

**(Mark One)**

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
**For the quarterly period ended June 30, 2020**

**OR**

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

**For the transition period from _____to _____**

**Commission File Number: 001-38470**

# Unity Biotechnology, Inc.
**(Exact Name of Registrant as Specified in its Charter)**

| **Delaware** | **26-4726035** |
|---|---|
| **(State or other jurisdiction of incorporation or organization)** | **(I.R.S. Employer Identification No.)** |
| **285 East Grand Ave. South San Francisco, CA** | **94080** |
| **(Address of principal executive offices)** | **(Zip Code)** |

**Registrant's telephone number, including area code: (650) 416-1192**

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 $0.0001 | UBX | The Nasdaq Global Select Market |

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 is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of July 27, 2020, the registrant had 52,040,018 shares of common stock outstanding.

**UNITY BIOTECHNOLOGY, INC.**
**QUARTERLY REPORT ON FORM 10-Q**
**Table of Contents**

## PART I. FINANCIAL INFORMATION



## PART II. OTHER INFORMATION

## Item 1. Condensed Financial Statements

**Unity Biotechnology, Inc.**
**Condensed Balance Sheets**
**(In thousands, except for share amounts and par value)**

| | June 30, 2020 (Unaudited) | December 31, 2019 |
|---|---|---|
| Assets | | |
| Current assets: | | |
| Cash and cash equivalents | $ 39,592 | $ 37,473 |
| Short-term marketable securities | 72,176 | 84,508 |
| Strategic investment | 7,768 | 5,507 |
| Prepaid expenses and other current assets | 4,001 | 1,999 |
| Total current assets | 123,537 | 129,487 |
| Property and equipment, net | 14,226 | 16,636 |
| Operating lease right of use asset | 24,891 | — |
| Long-term marketable securities | — | 3,025 |
| Restricted cash | 1,446 | 1,446 |
| Other long-term assets | 598 | 627 |
| Total assets | $ 164,698 | $ 151,221 |
| Liabilities and Stockholders' Equity | | |
| Current liabilities: | | |
| Accounts payable | $ 3,952 | $ 5,185 |
| Accrued compensation | 3,651 | 5,905 |
| Accrued and other current liabilities | 6,250 | 4,995 |
| Contingent consideration liability | 1,816 | 1,131 |
| Total current liabilities | 15,669 | 17,216 |
| Operating lease liability, net of current portion | 36,770 | — |
| Deferred rent, net of current portion | — | 13,298 |
| Total liabilities | 52,439 | 30,514 |
| Commitments and contingencies (Note 6) | | |
| Stockholders' equity: | | |
| Convertible preferred stock, $0.0001 par value; 10,000,000 shares authorized; no shares issued and outstanding | — | — |
| Common stock, $0.0001 par value; 300,000,000 shares authorized as of June 30, 2020 and December 31, 2019; 51,729,511 and 47,227,065 shares issued and outstanding as of June 30, 2020 and December 31, 2019, respectively | 5 | 5 |
| Additional paid-in capital | 404,754 | 366,695 |
| Related party promissory notes for purchase of common stock | (210) | (210) |
| Employee promissory notes for purchase of common stock | (362) | (418) |
| Accumulated other comprehensive income | 232 | 90 |
| Accumulated deficit | (292,160) | (245,455) |
| Total stockholders' equity | 112,259 | 120,707 |
| Total liabilities and stockholders' equity | $ 164,698 | $ 151,221 |

See accompanying notes to the condensed financial statements.

**Unity Biotechnology, Inc.**
**Condensed Statements of Operations and Comprehensive Loss**
**(In thousands, except share and per share amounts)**
**(Unaudited)**

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | 2020 | 2019 | 2020 | 2019 |
| Operating expenses: | | | | |
| Research and development | $ 16,123 | $ 18,468 | $ 35,388 | $ 34,973 |
| General and administrative | 6,320 | 4,970 | 12,273 | 9,447 |
| Change in fair value of contingent consideration | 906 | 1,032 | 685 | (213) |
| Impairment of long-lived assets | — | — | 2,159 | — |
| Total operating expenses | 23,349 | 24,470 | 50,505 | 44,207 |
| Loss from operations | (23,349) | (24,470) | (50,505) | (44,207) |
| Interest income | 340 | 900 | 867 | 1,906 |
| Other income (expense), net | 4,342 | (103) | 2,933 | (139) |
| Net loss | (18,667) | (23,673) | (46,705) | (42,440) |
| Other comprehensive loss | | | | |
| Unrealized gain (loss) on marketable debt securities | (141) | 94 | 142 | 208 |
| Comprehensive loss | $ (18,808) | $ (23,579) | $ (46,563) | $ (42,232) |
| Net loss per share, basic and diluted | $ (0.38) | $ (0.56) | $ (0.96) | $ (1.00) |
| Weighted-average number of shares used in computing net loss per share, basic and diluted | 49,659,153 | 42,442,886 | 48,606,768 | 42,311,040 |

See accompanying notes to the condensed financial statements.

**Unity Biotechnology, Inc.**
**Condensed Statements of Stockholders' Equity**
**(In thousands, except share amounts)**
**(Unaudited)**

**For the Six Months Ended June 30, 2020**

| | Common Stock | | Additional Paid-In | Related Party Promissory Notes for Purchase of | Employee Promissory Notes for Purchase of | Accumulated Other Comprehensive | Accumulated | Total Stockholders' |
|---|---|---|---|---|---|---|---|---|
| | Shares | Amount | Capital | Common Stock | Common Stock | Gain (Loss) | Deficit | Equity |
| **Balances at December 31, 2019** | **47,227,065** | **$ 5** | **$ 366,695** | **$ (210)** | **$ (418)** | **$ 90** | **$ (245,455)** | **$ 120,707** |
| Issuance of common stock, net of issuance costs, under at-the-market ("ATM") equity offering program | 1,513,840 | — | 8,763 | — | — | — | — | 8,763 |
| Issuance of common stock upon exercise of stock options | 73,049 | — | 249 | — | — | — | — | 249 |
| Vesting of early exercised stock options | — | — | 40 | — | — | — | — | 40 |
| Stock-based compensation | — | — | 3,225 | — | — | — | — | 3,225 |
| Common stock issued for services | 43,550 | — | 100 | — | — | — | — | 100 |
| Change in unrealized gain on available-for-sale marketable debt securities | — | — | — | — | — | 283 | — | 283 |
| Net loss | — | — | — | — | — | — | (28,038) | (28,038) |
| **Balances at March 31, 2020** | **48,857,504** | **$ 5** | **$ 379,072** | **$ (210)** | **$ (418)** | **$ 373** | **$ (273,493)** | **$ 105,329** |
| Issuance of common stock, net of issuance costs, under ATM equity offering program | 2,594,030 | — | 20,731 | — | — | — | — | 20,731 |
| Issuance of common stock upon exercise of stock options | 105,142 | — | 355 | — | — | — | — | 355 |
| Issuance of common stock from restricted stock units | 103,020 | — | — | — | — | — | — | — |
| Vesting of early exercised stock options | — | — | 132 | — | — | — | — | 132 |
| Stock-based compensation | — | — | 4,079 | — | — | — | — | 4,079 |
| Issuance of common stock under employee stock purchase plan ("2018 ESPP") | 69,815 | — | 385 | — | — | — | — | 385 |
| Repayment of promissory note from employee from purchase of common stock | — | — | — | — | 56 | — | — | 56 |
| Change in unrealized loss on available-for-sale marketable debt securities | — | — | — | — | — | (141) | — | (141) |
| Net loss | — | — | — | — | — | — | (18,667) | (18,667) |
| **Balances at June 30, 2020** | **51,729,511** | **$ 5** | **$ 404,754** | **$ (210)** | **$ (362)** | **$ 232** | **$ (292,160)** | **$ 112,259** |

**For the Six Months Ended June 30, 2019**

| | Common Stock | | Additional Paid-In | Related Party Promissory Notes for Purchase of | Employee Promissory Notes for Purchase of | Accumulated Other Comprehensive | Accumulated | Total Stockholders' |
|---|---|---|---|---|---|---|---|---|
| | Shares | Amount | Capital | Common Stock | Common Stock | Gain (Loss) | Deficit | Equity |
| **Balances at December 31, 2018** | **42,414,294** | **$ 4** | **$ 324,663** | **$ (201)** | **$ (400)** | **$ (95)** | **$ (163,278)** | **$ 160,693** |
| Issuance of common stock upon exercise of stock options | 340,731 | — | 300 | — | — | — | — | 300 |
| Vesting of early exercised stock options | — | — | 207 | — | — | — | — | 207 |
| Stock-based compensation | — | — | 1,997 | — | — | — | — | 1,997 |
| Common stock issued to third parties | 133,334 | — | 2,059 | — | — | — | — | 2,059 |
| Change in unrealized gain on available-for-sale marketable debt securities, net of tax | — | — | — | — | — | 114 | — | 114 |
| Net loss | — | — | — | — | — | — | (18,767) | (18,767) |
| **Balances at March 31, 2019** | **42,888,359** | **$ 4** | **$ 329,226** | **$ (201)** | **$ (400)** | **$ 19** | **$ (182,045)** | **$ 146,603** |
| Issuance of common stock upon exercise of stock options | 147,832 | — | 494 | — | — | — | — | 494 |
| Vesting of early exercised stock options | — | — | 218 | — | — | — | — | 218 |
| Stock-based compensation | — | — | 1,944 | — | — | — | — | 1,944 |
| Repurchased shares | (3,793) | — | — | — | — | — | — | — |
| Issuance of common stock under 2018 ESPP | 51,201 | — | 405 | — | — | — | — | 405 |
| Common stock issued to third party for a license | 120,000 | — | 965 | — | — | — | — | 965 |
| Change in unrealized gain on available-for-sale marketable debt securities, net of tax | — | — | — | — | — | 94 | — | 94 |
| Net loss | — | — | — | — | — | — | (23,673) | (23,673) |
| **Balances at June 30, 2019** | **43,203,599** | **$ 4** | **$ 333,252** | **$ (201)** | **$ (400)** | **$ 113** | **$ (205,718)** | **$ 127,050** |

See accompanying notes to the condensed financial statements.

**Unity Biotechnology, Inc.**
**Condensed Statements of Cash Flows**
**(In thousands)**
**(Unaudited)**

| | Six Months Ended June 30, | |
|---|---|---|
| | 2020 | 2019 |
| **Operating activities** | | |
| Net loss | $ (46,705) | $ (42,440) |
| **Adjustments to reconcile net loss to net cash used in operating activities:** | | |
| Depreciation and amortization | 1,814 | 1,280 |
| Net accretion and amortization of premium and discounts on marketable securities | (54) | (766) |
| Stock-based compensation | 7,421 | 3,941 |
| Common stock issued to third party for a license | — | 965 |
| Non-cash rent expense | (106) | — |
| Impairment of long-lived assets | 2,159 | — |
| Change in fair value of strategic investment | (3,060) | — |
| Accretion of tenant improvement allowance | — | (470) |
| Change in fair value of contingent consideration | 685 | (213) |
| Changes in operating assets and liabilities: | | |
| Prepaid expenses and other current assets | (2,002) | (766) |
| Other long-term assets | 29 | (17) |
| Accounts payable | (1,262) | 391 |
| Accrued compensation | (2,271) | (1,050) |
| Accrued and other current liabilities | (1,005) | (1,031) |
| Deferred rent, net of current portion | — | 279 |
| Net cash used in operating activities | (44,357) | (39,897) |
| **Investing activities** | | |
| Purchase of marketable securities | (49,792) | (50,699) |
| Maturities of marketable securities | 65,345 | 98,480 |
| Realized gain on sale of strategic investments | 799 | — |
| Purchase of property and equipment | (377) | (437) |
| Net cash provided by investing activities | 15,975 | 47,344 |
| **Financing activities** | | |
| Proceeds from issuance of common stock under ATM Offering Program, net of issuance costs | 29,494 | — |
| Proceeds from issuance of common stock under equity incentive plans, net of repurchases | 604 | 794 |
| Proceeds from issuance of common stock under 2018 ESPP | 385 | 405 |
| Proceeds from repayment of recourse notes | 56 | — |
| Payments made on capital lease obligations | (38) | (36) |
| Net cash provided by financing activities | 30,501 | 1,163 |
| Net increase in cash, cash equivalents and restricted cash | 2,119 | 8,610 |
| Cash, cash equivalents and restricted cash at beginning of the period | 38,919 | 15,949 |
| Cash, cash equivalents and restricted cash at end of the period | $ 41,038 | $ 24,559 |
| **Supplemental Disclosures of Non-Cash Investing and Financing Activities** | | |
| Property and equipment included in accounts payable | $ 30 | $ 47 |
| Lessor funded lease incentives included in tenant improvement receivable | $ — | $ 10,650 |
| Issuance of shares in settlement of share-based liability | $ 100 | $ — |

See accompanying notes to the condensed financial statements.

## 1. Organization

### Description of Business

Unity Biotechnology, Inc. (the "Company") is a biotechnology company engaged in the research and development of therapeutics to extend human healthspan. The Company devotes substantially all of its time and efforts to performing research and development, raising capital and recruiting personnel. The Company's headquarters are located in South San Francisco, California. The Company was incorporated in the State of Delaware in 2009 and operates in one segment.

### Need for Additional Capital

The Company has incurred operating losses and has an accumulated deficit as a result of ongoing efforts to develop drug product candidates, including conducting preclinical and clinical trials and providing general and administrative support for these operations. The Company had an accumulated deficit of $292.2 million and $245.5 million as of June 30, 2020 and December 31, 2019, respectively. The Company had net losses of $46.7 million and $42.4 million for the six months ended June 30, 2020 and 2019, respectively, and net cash used in operating activities of $44.4 million and $39.9 million for the six months ended June 30, 2020 and 2019, respectively. To date, none of the Company's drug candidates have been approved for sale, and therefore, the Company has not generated any revenue from contracts with customers and does not expect positive cash flows from operations in the foreseeable future. The Company has financed its operations primarily through private placements of preferred stock and promissory notes, public equity issuances and more recently from its ATM Offering Program (as defined below) and will continue to be dependent upon equity and/or debt financing until the Company is able to generate positive cash flows from its operations. See Note 10, "Subsequent Events".

The Company had cash, cash equivalents and marketable securities of $111.8 million as of June 30, 2020. The Company has evaluated and concluded there are no conditions or events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern for a period of one year following the date that these condensed financial statements are issued. Management expects operating losses to continue for the foreseeable future. As a result, the Company will need to raise additional capital. If sufficient funds on acceptable terms are not available when needed, the Company could be required to significantly reduce its operating expenses and delay, reduce the scope of, or eliminate one or more of its development programs. Failure to manage discretionary spending or raise additional financing, as needed, may adversely impact the Company's ability to achieve its intended business objectives.

## 2. Summary of Significant Accounting Policies

### Basis of Presentation

These condensed financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP") and the rules and regulations of the United States Securities and Exchange Commission ("SEC") for interim reporting.

Certain information and footnote disclosures normally included in annual financial statements prepared in accordance with GAAP have been condensed or omitted. Accordingly, the unaudited condensed financial statements should be read in conjunction with the audited financial statements and the related notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2019 filed with the SEC.

**Unaudited Condensed Financial Statements**

The accompanying financial information for the three and six months ended June 30, 2020 and 2019 are unaudited. The unaudited condensed financial statements have been prepared on the same basis as the annual audited financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary to present fairly the Company's financial position as of June 30, 2020 and its results of operations for the three and six months ended June 30, 2020 and 2019 and cash flows for the six months ended June 30, 2020 and 2019. The results for interim periods are not necessarily indicative of the results expected for the full fiscal year or any other period(s).

**Use of Estimates**

The condensed financial statements have been prepared in accordance with GAAP, which requires management to make estimates and assumptions that affect the amounts and disclosures reported in the condensed financial statements and accompanying notes. The Company bases its estimates on historical experience and market-specific or other relevant assumptions that it believes are reasonable under the circumstances. The amounts of assets and liabilities reported in the Company's condensed balance sheets and the amount of expenses and income reported for each of the periods presented are affected by estimates and assumptions, which are used for, but are not limited to, determining the fair value of assets and liabilities, contingent consideration liability and stock-based compensation. Actual results could differ from such estimates or assumptions.

**Cash, Cash Equivalents and Restricted Cash**

The Company considers all highly liquid investments with original maturities of 90 days or less from the date of purchase to be cash equivalents. Cash equivalents primarily include money market funds that invest in U.S. Treasury obligations which are stated at fair value.

The Company has issued letters of credit under lease agreements which have been collateralized. This cash is classified as noncurrent restricted cash on the balance sheet based on the term of the underlying lease.

The following table provides a reconciliation of cash, cash equivalents, and restricted cash within the balance sheets that sum to the total of the same amounts shown in the condensed statements of cash flows (in thousands).

| | June 30, 2020 | December 31, 2019 |
|---|---|---|
| Cash and cash equivalents | $ 39,592 | $ 37,473 |
| Restricted cash | 1,446 | 1,446 |
| Total cash, cash equivalents and restricted cash | $ 41,038 | $ 38,919 |

**Marketable Securities**

The Company generally invests its excess cash in investment grade, short to intermediate-term, fixed income securities. Such investments are considered available-for-sale debt securities, and reported at fair value with unrealized gains and losses included as a component of stockholders' equity. Marketable securities with original maturities of greater than 90 days from the date of purchase but less than one year from the balance sheet date that are available to be converted into cash to fund current operations are classified as short-term, while marketable securities with maturities in one year or beyond one year from the balance sheet date are classified as long-term. The amortized cost of debt securities is adjusted for amortization of premiums and accretion of discounts to maturity, which is included in interest income on the statements of operations and comprehensive loss. Realized gains and losses and declines in value judged to be other-than-temporary, if any, on marketable securities are included in interest income (expense), net. The cost of securities sold is determined using the specific identification method.

The Company periodically evaluates whether declines in fair values of its marketable securities below their book value are other-than-temporary. This evaluation consists of several qualitative and quantitative factors regarding the severity and duration of the unrealized loss as well as the Company's ability and intent to hold the marketable

security until a forecasted recovery occurs. Additionally, the Company assesses whether it has plans to sell the security or it is more likely than not it will be required to sell any marketable securities before recovery of its amortized cost basis. Factors considered include quoted market prices, recent financial results and operating trends, implied values from any recent transactions or offers of investee securities, credit quality of debt instrument issuers, other publicly available information that may affect the value of the marketable security, duration and severity of the decline in value, and management's strategy and intentions for holding the marketable security. To date, the Company has not recorded any impairment charges on its marketable securities related to other-than-temporary declines in market value.

**Strategic Investments**

The Company has previously made investments in strategic partners and may do so again in the future. The Company does not intend to have a controlling interest or significant influence when it makes these strategic investments. Investments in equity securities of strategic partners with readily determinable fair values are measured using quoted market prices, with changes recorded through other income (expense), net in the statement of operations and comprehensive loss. The Company currently holds a non-controlling equity investment in the common stock of Ascentage Pharma Group International ("Ascentage International"), an affiliate of a Hong-Kong based clinical-stage biopharmaceutical company called Ascentage Pharma Group Corp. Limited ("Ascentage Pharma"), which was acquired in connection with certain commercial agreements with Ascentage Pharma (see Note 5, "License Agreements"). In October 2019, Ascentage International completed an initial public offering of shares of its common stock on the Hong Kong Stock Exchange.

**Concentrations of Risk**

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash, cash equivalents, restricted cash and marketable securities. Substantially all of the Company's cash and cash equivalents and restricted cash is deposited in accounts with financial institutions that management believes are of high credit quality. Such deposits have and will continue to exceed federally insured limits. The Company maintains its cash with accredited financial institutions and accordingly, such funds are subject to minimal credit risk. The Company has not experienced any losses on its cash deposits.

The Company's investment policy limits investments in marketable securities to certain types of securities issued by the U.S. government, its agencies and institutions with investment-grade credit ratings and places restrictions on maturities and concentration by type and issuer. The Company is exposed to credit risk in the event of a default by the financial institutions holding its cash, cash equivalents, restricted cash and marketable securities and issuers of marketable securities to the extent recorded on the balance sheets. As of June 30, 2020, the Company had no off-balance sheet concentrations of credit risk.

The Company is also exposed to market risk in its strategic investments. As of June 30, 2020, the Company held an investment in common stock which is publicly traded in Hong Kong.

The Company depends on third-party suppliers for key raw materials used in its manufacturing processes and is subject to certain risks related to the loss of these third-party suppliers or their inability to supply the Company with adequate raw materials.

In March 2020 the World Health Organization declared the global novel coronavirus ("COVID-19") outbreak a pandemic. To date, the Company's operations have not been significantly impacted by the COVID-19 pandemic. However, the Company cannot at this time predict the specific extent, duration, or full impact that the COVID-19 pandemic will have on its financial condition and results of operations, including ongoing and planned clinical studies. The impact of the COVID-19 pandemic on the financial performance of the Company will depend on future developments, including the duration and spread of the COVID-19 pandemic and related governmental advisories and restrictions. These developments and the impact of COVID-19 on the financial markets and the overall economy are highly uncertain. If the financial markets and/or the overall economy are impacted for an extended period, the Company's business, financial condition, results of operations and prospects may be adversely affected.

**Research and Development Expenses and Accruals**

Costs related to research, design and development of drug candidates are charged to research and development expense as incurred. Research and development costs include, but are not limited to, payroll and personnel expenses for personnel contributing to research and development activities, laboratory supplies, outside services, licenses acquired to be used in research and development, manufacturing of clinical material, pre-clinical testing and consultants and allocated overhead, including rent, equipment, depreciation and utilities. Research and development costs are expensed as incurred unless there is an alternative future use in other research and development projects. Payments made prior to the receipt of goods or services to be used in research and development are deferred and recognized as expense in the period in which the related goods are received or services are rendered. Such payments are evaluated for current or long-term classification based on when they will be realized.

As part of the process of preparing its condensed financial statements, the Company is required to estimate expenses resulting from its obligations under contracts with vendors and consultants and clinical site agreements in connection with conducting clinical trials. The financial terms of these contracts are subject to negotiations which vary from contract to contract and may result in payment flows that do not match the periods over which materials or services are provided under such contracts. The Company's objective is to reflect the appropriate expenses in its condensed financial statements by matching those expenses with the period in which services and efforts are expended. The Company accounts for these expenses according to the progress of the production of clinical trial materials or based on progression of the clinical trial, as measured by patient progression and the timing of various aspects of the trial. The Company determines accrual estimates by taking into account discussion with applicable personnel and outside service providers as to the progress or state of consummation of goods and services, or the services completed. During the course of a clinical trial, the Company adjusts the rate of expense recognition if actual results differ from its estimates. The Company makes estimates of accrued expenses as of each balance sheet date in its condensed financial statements based on the facts and circumstances known at that time. The Company's clinical trial accrual is dependent in part upon the timely and accurate reporting of contract research organizations, contract manufacturers and other third-party vendors. Although the Company does not expect its estimates to be materially different from amounts actually incurred, the Company's understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and it may result in reporting changes in estimates in any particular period. Adjustments to prior period estimates have not been material for the six months ended June 30, 2020 and 2019.

**Contingent Consideration Liability**

The Company has entered into and may continue to enter into, license agreements to access and utilize certain technology. In each case, the Company evaluates whether the license agreement results in the acquisition of an asset or a business. To date, all of the Company's license agreements have been considered acquisitions of assets and none have been considered acquisitions of a business. For license agreements that are considered to be acquisitions of assets, the upfront payments for such license, as well as any future milestone payments made before product approval, are immediately recognized as research and development expense when due, provided there is no alternative future use of the rights in other research and development projects. Some of the Company's license agreements also include contingent consideration in the form of an obligation to issue additional shares of the Company's common stock based on the achievement of certain milestones. The Company assesses on a continuous basis whether (i) such contingent consideration meets the definition of a derivative, and (ii) whether it can be classified within stockholders' equity. Until such time when equity classification criteria are met or the milestones expire, the contingent consideration is classified as a liability. The derivative related to this contingent consideration is measured at fair value as of each balance sheet date with the related change in fair value being reflected in operating expenses. Upon a reassessment event that results in the contingent consideration no longer meeting the definition of a derivative and/or meeting equity classification criteria, the final change in fair value of the instrument is recorded within operating expenses and the liability is reclassified into stockholders' equity.

**Leases**

Prior to January 1, 2020, the Company accounted for its leases of office space and laboratory facilities under non-cancelable operating lease agreements and recognized related rent expense on a straight-line basis over the term of the lease. Incentives granted under the Company's facilities lease, including allowances to fund leasehold improvements and rent holidays, were recognized as reductions to rental expense on a straight-line basis over the term of the lease. Lessor funded leasehold improvement incentives not yet received were recorded in prepaid

expenses and other current assets on the condensed balance sheets. The Company did not assume renewals in its determination of the lease term unless they were deemed to be reasonably assured at the inception of the lease and began recognizing rent expense on the date that it obtained the legal right to use and control the leased space. Deferred rent consisted of the difference between cash payments and the rent expense recognized. The Company recognized a liability for costs that would continue to be incurred under a lease contract for its remaining term without economic benefit at its fair value when the entity ceased using the right conveyed by the contract, which was when the space was completely vacated. The Company also entered into capital lease agreements for certain equipment with a lease term of three years. The current portion of capital lease obligations was included in accrued and other current liabilities and the noncurrent capital lease obligations was included in other noncurrent liabilities on the condensed balance sheets.

Subsequent to January 1, 2020, the Company determines whether the arrangement is or contains a lease at the inception of the arrangement and if so, whether such a lease is classified as a financing lease or an operating lease. Operating leases are included in operating lease right-of-use assets, ("ROU assets"), operating lease liabilities, net of current portion, and accrued and other current liabilities on the Company's condensed balance sheets. The Company has elected not to recognize on the condensed balance sheets leases with terms of one year or less. Operating lease ROU assets represent the Company's right to use an underlying asset for the lease term and are considered long-lived assets for purposes of identifying, recognizing and measuring impairment. Operating lease liabilities represent the Company's obligation to make lease payments arising from the lease. Operating lease ROU assets and operating lease liabilities are recognized based on the present value of lease payments over the expected lease term. As the Company's leases do not provide an implicit rate, the Company uses its incremental borrowing rate, which is the rate incurred to borrow on a collateralized basis over a similar term an amount equal to the lease payments in a similar economic environment, in determining the present value of lease payments. The operating lease ROU asset also includes any lease payments made or incentives received and impairment charges if the Company determines the ROU asset is impaired and excludes lease incentives. The Company's lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise such options to extend or terminate the lease. Lease expense for lease payments is recognized on a straight-line basis over the lease term.

The Company has elected to not separate lease and non-lease components for its leased assets and accounts for all lease and non-lease components of its agreements as a single lease component. The lease components resulting in a ROU asset have been recorded on the condensed balance sheets and are amortized as lease expense on a straight-line basis over the lease term.

The Company does not have any material financing leases.

**Impairment of Long-Lived Assets**

The Company evaluates long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be fully recoverable. If indicators of impairment exist and the undiscounted future cash flows that the assets are expected to generate are less than the carrying value of the assets, the Company reduces the carrying amount of the assets through an impairment charge, to their estimated fair value based on a discounted cash flow approach or, when available and appropriate, to comparable market values. During the first quarter of 2020, the Company evaluated indicators of impairment for the ROU asset and related leasehold improvements considering the current economic environment, its impact on subleasing activity and the exit of its headquarters previously located in Brisbane, California. The Company concluded the carrying value of these assets were not fully recoverable and recorded an impairment charge of $2.2 million (see Note 6, "Commitments and Contingencies") during the six months ended June 30, 2020.

Determining estimated discounted cash flows for purposes of an impairment analysis requires the Company to make estimates and assumptions regarding the amount and timing of sublease income. There are often risks and uncertainties associated with the intent to sublease offices and laboratory space. Consequently, the eventual realized sublease revenues may vary from estimates as of the impairment testing date and adjustments may occur in future periods. Furthermore, the Company's sublease assumptions could be further impacted by the COVID-19 outbreak.

**Income Taxes**

On March 18, 2020, the Families First Coronavirus Response Act ("FFCR Act"), and on March 27, 2020, the Coronavirus Aid, Relief, and Economic Security Act ("CARES Act") were each enacted in response to the COVID-

19 pandemic. The FFCR Act and the CARES Act contain numerous tax-related provisions relating to refundable payroll tax credits, deferment of employer side social security payments, net operating loss carryback periods, alternative minimum tax credit refunds, modifications to the net interest deduction limitations and technical corrections to tax depreciation methods for qualified improvement property.

On June 29, 2020 California State Assembly Bill 85 (the "Trailer Bill") was enacted which suspends the use of California net operating loss ("NOL") deductions and certain tax credits, including research and development tax credits, for the 2020, 2021, and 2022 tax years.

The FFCR Act, CARES Act and Trailer Bill did not have a material impact on the Company's condensed financial statements as of June 30, 2020; however, the Company continues to examine the impacts the FFCR Act, CARES Act and Trailer Bill may have on its business, results of operations, financial condition and liquidity.

**Recently Adopted Accounting Pronouncements**

In December 2019, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes*, which removes certain exceptions to the general principles in Topic 740 related to the approach for intraperiod tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. The new guidance also simplifies aspects of the accounting for franchise taxes and enacted changes in tax laws or rates and clarifies the accounting for transactions that result in a step-up in the tax basis of goodwill. This ASU is effective for the Company for all interim and annual periods beginning January 1, 2022, with early adoption permitted. The Company early adopted ASU 2019-12 beginning January 1, 2020 on a prospective basis. The adoption of this standard did not have a material impact on its condensed financial statements and related disclosures. The only aspect of ASU 2019-12 that is currently applicable to the Company is the removal of the exception related to intraperiod tax allocation. The Company began applying the general methodology regarding the intraperiod allocation of tax expense in 2020. After the adoption of ASU 2019-12, in periods where the Company has a loss from continuing operations, the amount of taxes attributable to continuing operations will be determined without regard to the tax effect of other items, including changes in unrealized gains related to marketable securities.

In November 2018, the FASB issued ASU No. 2018-18, *Collaborative Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606* (ASU 2018-18), which clarifies that certain transactions between collaborative arrangement participants should be accounted for as revenue under the guidance for contracts with customers (Topic 606) when the collaborative arrangement participant is a customer in the context of a unit of account. The standard is effective for interim and annual periods beginning after December 15, 2020, with early adoption permitted, including adoption in any interim period for public business entities for periods in which financial statements have not been issued. The Company adopted this standard on January 1, 2020. The adoption of this ASU did not have a material impact on the Company's condensed financial statements.

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement*. This ASU eliminates, modifies and adds disclosure requirements for fair value measurements. The amendments in this ASU are effective for fiscal years, and for interim periods within those fiscal years, beginning after December 15, 2019, with early adoption permitted. The Company adopted this standard on January 1, 2020. The adoption of this ASU did not have a material impact on its condensed financial statements but has resulted in enhanced disclosures related to the recurring Level 3 fair value measurements.

In June 2018, the FASB issued ASU No. 2018-07, *Compensation – Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting*. The amendments in this ASU expand the scope of Topic 718 to include share-based payment transactions for acquiring goods and services from nonemployees. This new guidance is effective for the Company in fiscal years beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020. Early adoption is permitted. The Company adopted this standard on January 1, 2020. The adoption of this ASU did not have a material impact on its condensed financial statements.

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*, and related amendments which supersedes the guidance in former ASC 840, Leases. The new standard, as amended by subsequent ASUs on the

Topic, requires lessees to apply a dual approach, classifying leases as either finance or operating leases based on the principle of whether or not the lease is effectively a financed purchase by the lessee. This classification will determine whether lease expense is recognized based on an effective interest method or on a straight-line basis over the term of the lease. A lessee is also required to record a right-of-use asset and a lease liability for all leases with a term of greater than 12 months regardless of their classification. Leases with a term of 12 months or less will be accounted for similar to existing guidance for operating leases today. On November 15, 2019, the FASB issued ASU 2019-10 to delay the effective date of this standard, making it effective for the Company for annual reporting periods beginning after December 15, 2020, and interim periods within annual periods beginning after December 15, 2021, with early adoption permitted.

The Company adopted this standard on January 1, 2020 using the modified retrospective approach with a cumulative effect adjustment to accumulated deficit at the beginning of the period of adoption, if any. The Company elected the package of practical expedients permitted under the transition guidance within Topic 842, which allowed the Company to carry forward the historical lease classification, retain the initial direct costs for any leases that existed prior to the adoption of the standard and not reassess whether any contracts entered into prior to the adoption are leases. The Company also elected to account for lease and non-lease components in its lease agreements as a single lease component in determining lease assets and liabilities. In addition, the Company elected not to recognize the right-of-use assets and liabilities for leases with lease terms of one year or less. The Company did not elect the practical expedient allowing the use-of-hindsight, which would require the Company to reassess the lease term of its leases based on all facts and circumstances through the effective date and did not elect the practical expedient pertaining to land easements as this is not applicable to the current contract portfolio.

Upon adoption of Topic 842, the Company recorded $42.4 million of operating lease liabilities and $27.2 million of right-of-use assets after reclassification of deferred rent of $15.3 million, as of January 1, 2020. The adoption did not have a material impact on the Company’s condensed statements of operations and comprehensive loss or condensed statements of cash flows (see Note 6, “Commitments and Contingencies” for additional information).

**Recently Issued Accounting Pronouncements Not Yet Adopted**

In August 2018, the FASB issued ASU No. 2018-15, *Intangibles (Topic 350): Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract*, which aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. This new standard also requires customers to expense the capitalized implementation costs of a hosting arrangement that is a service contract over the term of the hosting arrangement. This standard is effective for the Company for annual reporting periods beginning after December 15, 2020, and interim periods within annual periods beginning after December 15, 2021. This new standard can be applied either retrospectively or prospectively to all implementation costs incurred after the date of adoption. The Company is currently evaluating the impact of adoption on its condensed financial statements.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments-Credit Losses (Topic 326)*, *Measurement of Credit Losses on Financial Instruments*, as clarified in subsequent amendments. ASU 2016-13 changes the impairment model for certain financial instruments. The new model is a forward-looking expected loss model and will apply to financial assets subject to credit losses and measured at amortized cost and certain off-balance sheet credit exposures. This includes loans, held-to-maturity debt securities, loan commitments, financial guarantees and net investments in leases, as well as trade receivables. For available-for-sale debt securities with unrealized losses, credit losses will be measured in a manner similar to today, except that the losses will be recognized as allowances rather than reductions in the amortized cost of the securities. In October 2019, the FASB voted to delay the effective date of this standard. Topic 326 will be effective for the Company for fiscal years beginning after December 15, 2022. Early adoption is permitted. The Company is currently assessing the effect that this ASU will have on its condensed financial position, results of operations, and disclosures.

**3. Fair Value Measurements**

The Company determines the fair value of financial and non-financial assets and liabilities based on the assumptions that market participants would use in pricing the asset or liability in an orderly transaction between market participants at the measurement date. The identification of market participant assumptions provides a basis for

determining what inputs are to be used for pricing each asset or liability. A fair value hierarchy has been established which gives precedence to fair value measurements calculated using observable inputs over those using unobservable inputs. This hierarchy prioritized the inputs into three broad levels as follows:

- Level 1: Quoted prices in active markets for identical instruments
- Level 2: Other significant observable inputs (including quoted prices in active markets for similar instruments)
- Level 3: Significant unobservable inputs (including assumptions in determining the fair value of certain investments)

The carrying amounts of financial instruments such as cash and cash equivalents, restricted cash, prepaid expenses and other current assets, accounts payable, accrued compensation, accrued and other current liabilities approximate the related fair values due to the short maturities of these instruments.

The Company's financial assets and liabilities subject to fair value measurements on a recurring basis and the level of inputs used in such measurements were as follows (in thousands):

| | June 30, 2020 | | | |
|---|---|---|---|---|
| | Total | Level 1 | Level 2 | Level 3 |
| Assets: | | | | |
| Cash equivalents: | | | | |
| Money market funds | $ 21,280 | $ 21,280 | $ — | $ — |
| U.S. and foreign commercial paper | 4,000 | — | 4,000 | — |
| Total cash equivalents | 25,280 | 21,280 | 4,000 | — |
| Short-term marketable securities: | | | | |
| U.S. and foreign commercial paper | 5,748 | — | 5,748 | — |
| U.S. and foreign corporate debt securities | 10,381 | — | 10,381 | — |
| U.S. government debt securities | 36,202 | — | 36,202 | — |
| U.S. treasuries | 19,845 | — | 19,845 | — |
| Total short-term marketable securities | 72,176 | — | 72,176 | — |
| Strategic investment | | | | |
| Foreign equity securities | 7,768 | 7,768 | — | — |
| Total strategic investment | 7,768 | 7,768 | — | — |
| Total assets subject to fair value measurements on a recurring basis | $ 105,224 | $ 29,048 | $ 76,176 | $ — |
| Liabilities: | | | | |
| Contingent consideration liability | $ 1,816 | $ — | $ — | $ 1,816 |
| Total liabilities subject to fair value measurements on a recurring basis | $ 1,816 | $ — | $ — | $ 1,816 |

| | December 31, 2019 | | | |
|---|---|---|---|---|
| | Total | Level 1 | Level 2 | Level 3 |
| Assets: | | | | |
| Cash equivalents: | | | | |
| Money market funds | $ 29,377 | $ 29,377 | $ — | $ — |
| U.S. and foreign commercial paper | 4,999 | — | 4,999 | — |
| U.S government debt securities | 2,550 | — | 2,550 | — |
| Total cash equivalents | 36,926 | 29,377 | 7,549 | — |
| Short-term marketable securities: | | | | |
| U.S. treasuries | 15,063 | — | 15,063 | — |
| U.S. and foreign commercial paper | 11,972 | — | 11,972 | — |
| U.S. and foreign corporate debt securities | 8,755 | — | 8,755 | — |
| U.S. government debt securities | 48,718 | — | 48,718 | — |
| Total short-term marketable securities | 84,508 | — | 84,508 | — |
| Strategic investment | | | | |
| Foreign equity securities | 5,507 | 5,507 | — | — |
| Total strategic investment | 5,507 | 5,507 | — | — |
| Long-term marketable securities | | | | |
| U.S. treasuries | 3,025 | — | 3,025 | — |
| Total long-term marketable securities | 3,025 | — | 3,025 | — |
| Total assets subject to fair value measurements on a recurring basis | $ 129,966 | $ 34,884 | $ 95,082 | $ — |
| Liabilities: | | | | |
| Contingent consideration liability | $ 1,131 | $ — | $ — | $ 1,131 |
| Total liabilities subject to fair value measurements on a recurring basis | $ 1,131 | $ — | $ — | $ 1,131 |

The Company estimates the fair value of its money market funds, U.S. and foreign commercial paper, U.S. and foreign corporate debt securities, asset-backed securities, U.S. treasuries, U.S. government debt securities and foreign equity securities by taking into consideration valuations obtained from third-party pricing services. The pricing services utilize industry standard valuation models, including both income and market-based approaches, for which all significant inputs are observable, either directly or indirectly, to estimate fair value. These inputs include reported trades of and broker/dealer quotes on the same or similar securities, issuer credit spreads; benchmark securities; prepayment/default projections based on historical data; and other observable inputs.

The Company has recorded a contingent consideration liability related to three agreements (the “Commercial Agreements”) with Ascentage Pharma Group Corp. Limited, a clinical-stage biopharmaceutical company based in Hong Kong China (“Ascentage Pharma”) (see Note 5, “License Agreements”). As of June 30, 2020, these Commercial Agreements included contingent consideration of up to an aggregate of 533,336 additional shares of common stock to be issued in specified portions to Ascentage Pharma and an academic institution from which Ascentage Pharma had previously in-licensed the underlying technology based on achievement of certain specified preclinical and clinical development and sales milestone events for two or more licensed compounds. The fair value of the contingent consideration liability includes inputs not observable in the market and thus represents a Level 3 measurement. The probability of achieving the defined milestone events under the Commercial Agreements is estimated on a quarterly basis by the Company’s management using a probability-weighted valuation approach model which utilizes current stock price and reflects the probability and timing of future issuances of shares. The probability and timing of future issuances of shares is based on current scenarios and plans to research, develop, and seek to obtain marketing approval for two or more licensed compounds under the Commercial Agreements, with individual probabilities for each defined milestone event ranging from 90% to 100%, and with a cumulative probability of 90%. Total contingent consideration may change significantly as preclinical and clinical development related to the compounds covered by the Commercial Agreements progresses and additional data is obtained,

impacting the Company's assumptions regarding clinical programs and probabilities of and timing for successful achievement of the related milestone events. For example, significant increases in the estimated probability of achieving a milestone would result in a significantly higher fair value measurement while significant decreases in the estimated probability of achieving a milestone would result in a significantly lower fair value measurement. The potential outstanding contingent consideration value results in shares to be issued ranging from zero, if none of the milestones are achieved, to a maximum of $5.6 million (using the Company's stock price as of June 30, 2020). As of June 30, 2020, and December 31, 2019, none of the commercial milestones had been achieved and no royalties were due from the sales of licensed products.

The following table provides a reconciliation of the Company's financial liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) at June 30, 2020 and 2019 (in thousands):

| | Amount |
|---|---|
| Balance at December 31, 2019 | $ 1,131 |
| Additions | — |
| Settlements | — |
| Change in fair value | 685 |
| Balance at June 30, 2020 | $ 1,816 |

| | Amount |
|---|---|
| Balance at December 31, 2018 | $ 2,483 |
| Additions | — |
| Settlements | — |
| Change in fair value | (213) |
| Balance at June 30, 2019 | $ 2,270 |

There were no transfers into and out of Level 3 of the fair value hierarchy during the six months ended June 30, 2020 and 2019.

The Company holds an equity investment in Ascentage International, an affiliate of Ascentage Pharma. The equity interest represents an insignificant level of ownership in the investee and has been recorded within strategic investment on the Company's condensed balance sheets (see Note 5, "License Agreements"). In October 2019, Ascentage International completed an initial public offering of common stock on the Hong Kong Stock Exchange. Following the initial public offering, the Company's underlying investment changed to be an equity security with a readily determinable fair value which is measured at fair value on a recurring basis based on quoted stock prices available on the Hong Kong Stock Exchange, which are considered observable inputs (Level 1). The fair value of the common stock was $7.8 million and $5.5 million as of June 30, 2020 and December 31, 2019, respectively, and is included in strategic investment on the Company's condensed balance sheets. The change in fair value of this investment was $2.3 million and zero for the six months ended June 30, 2020 and 2019, respectively, and was recorded in other income (expense), net on the statements of operations and comprehensive loss.

See Note 4, "Marketable Securities," for further information regarding the carrying value of the Company's financial instruments.

**4. Marketable Securities**

Marketable securities, which are classified as available-for-sale, consisted of the following as of June 30, 2020 (in thousands):

| | Amortized Cost Basis | Unrealized Gains | Unrealized Losses | Fair Value |
|---|---|---|---|---|
| Cash equivalents: | | | | |
| Money market funds | $ 21,280 | $ — | $ — | $ 21,280 |
| U.S. and foreign commercial paper | 4,000 | — | — | 4,000 |
| Total cash equivalents | 25,280 | — | — | 25,280 |
| Short-term marketable securities: | | | | |
| U.S. and foreign commercial paper | 5,738 | 10 | — | 5,748 |
| U.S. and foreign corporate debt securities | 10,338 | 43 | — | 10,381 |
| U.S. government debt securities | 36,088 | 116 | (2) | 36,202 |
| U.S. treasuries | 19,780 | 65 | — | 19,845 |
| Total short-term marketable securities | 71,944 | 234 | (2) | 72,176 |
| Total | $ 97,224 | $ 234 | $ (2) | $ 97,456 |

Marketable securities, which are classified as available-for-sale, consisted of the following as of December 31, 2019 (in thousands):

| | Amortized Cost Basis | Unrealized Gains | Unrealized Losses | Fair Value |
|---|---|---|---|---|
| Cash equivalents: | | | | |
| Money market funds | $ 29,377 | $ — | $ — | $ 29,377 |
| U.S. and foreign commercial paper | 4,999 | — | — | 4,999 |
| U.S. government debt securities | 2,550 | — | — | 2,550 |
| Total cash equivalents | 36,926 | — | — | 36,926 |
| Short-term marketable securities: | | | | |
| U.S. and foreign commercial paper | 11,965 | 7 | — | 11,972 |
| U.S. and foreign corporate debt securities | 8,748 | 8 | (1) | 8,755 |
| U.S. government debt securities | 48,647 | 71 | — | 48,718 |
| U.S. treasuries | 15,057 | 6 | — | 15,063 |
| Total short-term marketable securities | 84,417 | 92 | (1) | 84,508 |
| Long-term marketable securities | | | | |
| U.S. treasuries | 3,025 | — | — | 3,025 |
| Total long-term marketable securities | 3,025 | — | — | 3,025 |
| Total | $ 124,368 | $ 92 | $ (1) | $ 124,459 |

At June 30, 2020, the remaining contractual maturities of available-for-sale securities were less than one year. There have been no significant realized gains or losses on available-for-sale securities for the periods presented. Available-for-sale debt securities that were in a continuous loss position but were not deemed to be other than temporarily impaired were immaterial at both June 30, 2020 and December 31, 2019. The Company does not intend to and does not believe it is more likely than not that it will be required to sell these debt securities before their maturities.

See Note 3, “Fair Value Measurements,” for further information regarding the fair value of the Company’s financial instruments.

**5. License Agreements**

***License and Compound Library and Option Agreement***

The Company is a party to three agreements with Ascentage Pharma: (a) a compound library and option agreement executed in February 2016 granting the Company the right to identify and take licenses to research, develop, and seek and obtain marketing approval for library compounds for the treatment of indications outside of oncology, (b) an initial license agreement executed in February 2016 granting the Company rights to an initial licensed compound, and (c) a second license agreement executed in January 2019 granting the Company rights to a second licensed compound (this second license agreement, the "Bcl License Agreement" and collectively with the other two agreements, the "Commercial Agreements").

The Commercial Agreements referenced above include cash payments of up to $70.3 million as well as the equity payments of up to an aggregate of (a) 933,337 shares of common stock in the event there is only one licensed product, and (b) 1,333,338 shares of common stock in the event there are two or more licensed products, in each case to be issued based on the Company's achievement of certain preclinical and clinical development and sales milestone events. The Company is required to make 80% of all equity payments to Ascentage Pharma and the remaining 20% to an academic institution from whom Ascentage Pharma had previously licensed the technology. The milestones include the advancement of additional compounds into Investigational New Drug application ("IND") enabling studies, the filing of an IND, the commencement of clinical studies, Food and Drug Administration ("FDA") and/or European Medicines Agency approval, and a net sales threshold. The Bcl License Agreement also includes tiered royalties in the low-single digits based on sales of licensed products. As of June 30, 2020, the Company had issued 640,002 shares of common stock to Ascentage Pharma and 160,000 shares of common stock to an academic institution from whom Ascentage Pharma had previously licensed the technology.

In December 2018, the Company elected to advance a second compound into formal preclinical development, which gave rise to an obligation under the compound library and option agreement to issue an additional 133,334 shares of common stock to Ascentage Pharma and the academic institution. These shares were issued to Ascentage Pharma in January 2019 and the academic institution in March 2019.

In June 2020, the Company entered into a third amendment to the Bcl License Agreement. Under the terms of the original Bcl License Agreement, Ascentage Pharma granted the Company exclusive development and commercialization rights and non-exclusive manufacturing rights to an Ascentage Bcl inhibitor compound known as UBX1967 as well as the right to continue its preclinical development efforts with another Ascentage-controlled Bcl inhibitor compound, known as UBX1325, a small molecule inhibitor of the anti-apoptotic Bcl-2 family member, Bcl-xL, that served as a back-up to UBX1967. Under the terms of the third amendment to the Bcl License Agreement, the status of UBX1967 and UBX1325 were switched such that UBX1325 became the licensed compound and UBX1967 became the back-up compound under the Bcl License Agreement.

On July 1, 2020, the Company announced that it had completed IND-enabling studies for UBX1325. The Company plans to initiate a Phase 1 clinical study for UBX1325 in the second half of 2020. Upon filing an IND for the Phase 1 clinical study for UBX1325, the Company will become obligated to issue 133,333 shares of common stock to Ascentage Pharma and the academic institution. Upon commencement of a Phase 1 study, the Company will also be obligated to make a milestone payment of $1.0 million, which the Company may elect to pay in cash or shares of common stock and may also become obligated to issue an additional 133,333 shares of its common stock to these parties.

In connection with the additional shares of common stock that the Company may be obligated to issue under the Commercial Agreements upon achievement of the specified milestones events, the Company recorded a contingent consideration liability of $1.8 million at June 30, 2020 and $1.1 million at December 31, 2019. The $1.8 million contingent consideration liability was recorded as a current liability based on the latest estimates for milestone achievements. To date, no royalties were due from the sales of licensed products.

In April 2016, in connection with the Commercial Agreements, the Company purchased an interest in an affiliate of Ascentage Pharma for an aggregate purchase price of $0.5 million. In May 2018, this interest was exchanged for an interest in a newly formed affiliate of Ascentage Pharma called Ascentage International as part of a reorganization

of those entities. The Company also invested an additional $0.5 million in Ascentage International in May 2018 which was recorded within other long-term assets on the Company's balance sheet as of December 31, 2018.

In October 2019, Ascentage International completed an initial public offering of shares of its common stock on the Hong Kong Stock Exchange at HK$34.20 (approximately USD $4.36) per share. In connection with Ascentage International's initial public offering, the Company's interest converted into shares of common stock of Ascentage International. The Company determined that its investment in Ascentage International met the definition of an equity security with a readily determinable fair value which is measured at fair value on a recurring basis based on quoted stock price available on the Hong Kong Stock Exchange. The Company was subject to a lock-up agreement with Ascentage International that precluded the Company from selling shares prior to April 28, 2020.

The Company agreed to provide funding to Ascentage Pharma for research and development work performed at a cost of up to $2.0 million through February 2020. The research and development expense under the research services agreement was not material for the six months ended June 30, 2020 and 2019.

***Other License Agreements with Research Institutions***

In May 2019, the Company entered into a license agreement with The Regents of the University of California on behalf of its San Francisco campus (collectively, "UCSF") which provides the Company the rights to certain patents and related know-how to make, use, sell, offer for sale and import certain products and practice certain methods for use in the development of human therapeutics, which excludes the provision of services to third parties for consideration of any kind. The license to the Company is subject to UCSF's reserved rights under the licensed intellectual property for educational and non-commercial research purposes and a requirement to substantially manufacture any licensed products in the United States. The Company is obligated to use diligent efforts to develop and obtain regulatory approval for at least one product commercialized pursuant to the agreement, and must meet certain regulatory and development milestones. In June 2019, as part of this license agreement, the Company issued 120,000 shares of its common stock to UCSF. In addition, the Company is obligated to pay an annual license maintenance fee and may be obligated to make milestone payments or issue up to an additional 34,000 shares of its common stock upon the occurrence of specified development events, up to aggregate milestone payments of $13.6 million for each product licensed under the agreement, and upon commercialization, to make royalty payments in the low single digit percentages (subject to a specified minimum annual royalty) based on sales of products commercialized pursuant to the agreement. None of these events had occurred and no milestone payments or royalty payments had been recognized as of June 30, 2020. The upfront issuance of 120,000 shares of the Company's common stock was valued at $1.0 million and recorded as additional paid-in capital upon issuance in June 2019.

The Company has also entered into license agreements with various other research institutions which have provided the Company with rights to patents, and in certain cases, research "know-how" and proprietary research tools to research, develop and commercialize drug candidates. In addition to upfront consideration paid to these various research institutions in either cash or shares of the Company's common stock, the Company may be obligated to pay milestone payments in cash or the issuance of the Company's common stock upon achievement of certain specified clinical development and/or sales events. The contingent consideration liability considered to be a derivative associated with the potential issuance of common stock related to these license agreements was not significant at June 30, 2020 or December 31, 2019. To date, none of these events has occurred and no contingent consideration, milestone or royalty payments have been recognized.

**6. Commitments and Contingencies**

***Leases***

In February 2019, the Company entered into a lease agreement for new office and laboratory space in South San Francisco, California. The term of the lease agreement commenced in May 2019. The lease has an initial term from occupancy of approximately ten years ending on December 31, 2029 with an option to extend the term for an additional eight years at then-market rental rates. The total base rent payment escalates annually based on a fixed percentage beginning from the 13th month of the lease agreement. The Company will also be responsible for the operating expenses and real estate taxes allocated to the building and common areas. Pursuant to the lease

agreement, the landlord provided the Company with a tenant improvement allowance of $10.7 million, which was included in deferred rent and leasehold improvements on the balance sheet at December 31, 2019. In connection with the execution of the lease agreement, the Company delivered a letter of credit of approximately $0.9 million to the landlord.

In May 2016, the Company executed a non-cancellable lease agreement for office and laboratory space in Brisbane, California which commenced in May 2016 and continues through October 2022. The lease agreement includes an escalation clause for increased rent and a renewal provision allowing the Company to extend this lease for an additional four years by giving the landlord written notice of the election to exercise the option at least fifteen months prior to the original expiration of the lease term. The lease provides for monthly base rent amounts escalating over the term of the lease and the lessor provided the Company a $3.9 million tenant improvement allowance to complete the laboratory and office renovation which was recorded as deferred rent liability and leasehold improvements within property and equipment, net. In May 2017, the Company entered into an amendment to expand the leased space and received a three-month rent holiday for the expanded space.

The Company's operating leases include various covenants, indemnities, defaults, termination rights, security deposits and other provisions customary for lease transactions of this nature.

The following table summarizes the components of lease expense, which are included in operating expenses in the Company's condensed statements of operations and comprehensive loss (in thousands):

| | Three Months Ended June 30, 2020 | Six Months Ended June 30, 2020 |
|---|---|---|
| Operating lease cost | $ 1,144 | $ 2,444 |
| Variable lease cost | 363 | 641 |
| Impairment of operating lease right-of-use asset | — | 1,157 |
| Total lease cost | $ 1,507 | $ 4,242 |

Variable lease payments include amounts relating to common area maintenance, real estate taxes and insurance and are recognized in the condensed statements of operations and comprehensive loss as incurred. Rent expense for the six months ended June 30, 2019 was $1.5 million.

The following table summarizes supplemental information related to leases (in thousands):

| | Six Months Ended June 30, 2020 |
|---|---|
| Cash paid for amounts included in the measurement of lease liabilities | |
| Operating cash flows from operating leases | $ 2,557 |
| Weighted-average remaining lease term (years) | |
| Operating leases | 8.8 |
| Weighted-average discount rate (percentage) | |
| Operating leases | 5.8% |

The following table summarizes the maturities of lease liabilities as of June 30, 2020 (in thousands):

| | Amount |
|---|---|
| 2020 (remaining 6 months) | $ 3,241 |
| 2021 | 6,653 |
| 2022 | 6,283 |
| 2023 | 4,810 |
| 2024 | 4,964 |
| Thereafter | 27,302 |
| Total future minimum lease payments | 53,253 |
| Less: Amount representing interest | (12,171) |
| Present value of future minimum lease payments | 41,082 |
| Less: Current portion of operating lease liability | (4,312) |
| Noncurrent portion of operating lease liability | $ 36,770 |

The cumulative effect on the Company's condensed balance sheets at January 1, 2020 from the adoption of Topic 842 was as follows (in thousands):

| | December 31, 2019 | Topic 842 Adjustments | January 1, 2020 |
|---|---|---|---|
| Operating lease right-of-use assets | $ — | $ 27,174 | $ 27,174 |
| Accrued and other current liabilities | 4,995 | (1,970) | 3,025 |
| Operating lease liabilities, current portion | — | 3,455 | 3,455 |
| Deferred rent, net of current portion | 13,298 | (13,298) | — |
| Operating lease liabilities, net of current portion | — | 38,988 | 38,988 |

In February 2020, the Company completed its move into the new office and laboratory space in South San Francisco, exited its previous offices and laboratory space in Brisbane, California, and began to actively market this space for sublease. Concurrent with this move and in consideration of real estate market conditions, in particular due to the COVID-19 pandemic in March 2020, the Company identified indicators of impairment in the related asset group, which included the leased ROU asset and related leasehold improvements associated with the lease. The Company subsequently evaluated and compared the net book value of the asset group to the estimated undiscounted future cash flows over the remaining term of the lease and concluded that an impairment had occurred. The discounted estimated future cash flows include estimates of sublease rentals through the end of the lease term, which ends on October 31, 2022, utilizing a discount rate of 3.5% based on the Company's estimated incremental borrowing rate. The estimated discounted cash flows were compared to the net book value of the ROU asset and leasehold improvements resulting in an impairment loss of $2.2 million. This impairment loss was allocated proportionally to the right-of-use asset of $1.2 million and leasehold improvements of $1.0 million and recorded in operating expense in the condensed statements of operations and comprehensive loss for the six months ended June 30, 2020. After recording the impairment, the remaining balance of the ROU asset and leasehold improvements was $1.8 million and $1.6 million, respectively. The Company continues to actively market this space for sublease. Additional impairments could be realized if the Company's sublease assumptions are further impacted by real estate market conditions, including potentially as a result of the COVID-19 pandemic.

***Indemnification***

The Company indemnifies each of its officers and directors for certain events or occurrences, subject to certain limits, while the officer or director is or was serving at the Company's request in such capacity, as permitted under Delaware law and in accordance with the Company's amended and restated certificate of incorporation and bylaws. The term of the indemnification period lasts as long as an officer or director may be subject to any proceeding arising out of acts or omissions of such officer or director in such capacity.

The maximum amount of potential future indemnification is unlimited; however, the Company currently holds director and officer liability insurance. This insurance allows the transfer of risk associated with the Company's exposure and may enable the Company to recover a portion of any future amounts paid. The Company believes that the fair value of these indemnification obligations is minimal. Accordingly, the Company has not recognized any liabilities relating to these obligations for any period presented.

**7. Equity Financing**

In June 2019, the Company filed a Registration Statement on Form S-3 (the "Shelf Registration Statement"), covering the offering of up to $250.0 million of common stock, preferred stock, debt securities, warrants and units. The Shelf Registration Statement included a prospectus covering the offering, issuance and sale of up to $75.0 million of the Company's common stock from time to time through an "at-the-market" offering under the Securities Act of 1933, as amended (the "ATM Offering Program"). The SEC declared the Shelf Registration Statement effective on June 6, 2019.

On June 3, 2019, the Company also entered into a sales agreement (the "June 2019 Sales Agreement") with Cowen and Company, LLC ("Cowen") to sell shares of the Company's common stock, from time to time, with aggregate gross sales proceeds of up to $75.0 million, through the ATM Offering Program under which Cowen acts as its sales agent. Cowen is entitled to compensation for its services equal to up to 3.0% of the gross proceeds of any shares of common stock sold through Cowen under the June 2019 Sales Agreement. In addition, the Company has agreed to reimburse a portion of Cowen's expenses in connection with the offering up to a maximum of $0.1 million. During the six months ended June 30, 2020, the Company issued and sold 4,107,870 shares of its common stock through its ATM Offering Program and received net proceeds of approximately $29.5 million, after deducting commissions and other offering expenses of $1.0 million.

**8. Stock-Based Compensation**

***Stock Options and Restricted Stock Units Activity***

A summary of the Company's stock option activity under the 2013 Equity Incentive Plan, 2018 Incentive Award Plan, and 2020 Employment Inducement Incentive Plan for the six months ended June 30, 2020 is as follows:

| | Number of Shares | Weighted-Average Exercise Price |
|---|---|---|
| Balances at December 31, 2019 | 6,906,898 | $ 7.62 |
| Granted | 3,272,256 | $ 6.33 |
| Exercised | (123,191) | $ 3.40 |
| Canceled | (587,441) | $ 9.43 |
| Balances at June 30, 2020 | 9,468,522 | $ 7.11 |

A summary of the Company's restricted stock units ("RSUs") and performance stock units ("PSUs") activity for the six months ended June 30, 2020 is as follows**:**

| | Number of Shares | Weighted-Average Grant Date Fair Value |
|---|---|---|
| Unvested at December 31, 2019 | 325,887 | $ 9.00 |
| Granted | 661,314 | $ 5.67 |
| Vested | (103,020) | $ 9.00 |
| Canceled | (43,539) | $ 9.00 |
| Unvested at June 30, 2020 | 840,642 | $ 6.38 |

For stock options granted to employees with service-based vesting, the fair value of stock options granted to employees was estimated on the date of grant using the Black-Scholes option pricing model and utilizing assumptions that were determined as follows:

*Expected Term*—The expected term represents the period that the options granted are expected to be outstanding and is determined using the simplified method (based on the mid-point between the vesting date and the end of the contractual term) as the Company has concluded that its stock option exercise history does not provide a reasonable basis upon which to estimate expected term.

*Expected Volatility*—Due to limited historical data, the Company estimates stock price volatility based on a combined weighted-average of the Company's historical average volatility and that of a selected peer group of comparable publicly traded companies within the biotechnology and pharmaceutical industry that were deemed to be representative of future stock price trends over the expected life of the award.

*Risk-Free Interest Rate*—The Company based the risk-free interest rate over the expected term of the options based on the constant maturity rate of U.S. Treasury securities with similar maturities as of the date of the grant.

*Expected Dividends*—The Company has never paid any dividends and does not plan to pay dividends in the foreseeable future. Therefore, the expected dividend yield is zero.

In March 2020, the board of directors granted the Company's newly hired Chief Executive Officer stock-based awards covering an aggregate of 1.1 million shares of common stock, including options to purchase an aggregate of 800,000 shares of common stock, 120,000 RSUs, 150,000 PSUs and 30,000 shares of common stock. The stock-based awards were granted pursuant to the 2020 Employment Inducement Incentive Plan, which was approved by the board of directors in March 2020 to provide for grants to newly hired employees as a material inducement for them to commence employment with the Company.

The 30,000 shares of common stock were fully vested on the date of grant and thus, the related compensation expense of $0.2 million was recognized on the grant date. The stock options and RSUs will vest subject to continued service through the applicable vesting date.

The PSUs vest as to 50,000 PSUs upon the attainment of (a) a volume-weighted average per share closing trading price of the Company's common stock of at least $36.875 over a trailing 30-day period or (b) a change in control transaction in which the price per share to the holders of the Company's common stock is at least $36.875 and as to 100,000 PSUs (x) at such time as the Company's market capitalization reaches at least $2.5 billion, as measured based on the volume weighted-average closing trading price over a trailing 30 day period or (y) a change in control transaction in which the consideration paid to the Company's stockholders is equal to at least $2.5 billion, as determined by the board of directors.

For the PSU awards, the Company used the Monte-Carlo option pricing model to determine the fair value of awards at the date of grant. The Monte-Carlo option pricing model uses similar input assumptions as the Black-Scholes model; however, it further incorporates into the fair-value determination the possibility that the market condition may not be satisfied. Compensation costs related to awards with a market-based condition are recognized regardless of whether the market condition is ultimately satisfied. Compensation cost is not reversed if the achievement of the market condition does not occur. The total grant date fair value of the PSU awards was determined to be $0.7 million and will be recognized as compensation expense over the weighted-average derived service period of approximately 4.3 years.

During the six months ended June 30, 2020 the Company issued 13,550 shares in settlement of stock-based compensation awards accounted for as liability awards.

***Stock Based Compensation Expense***

The following table sets forth the total stock-based compensation expense for all options granted to employees and nonemployees, including shares sold through the issuance of non-recourse promissory notes which are considered to

be options for accounting purposes, and costs associated with the Company's 2018 Employee Stock Purchase Plan ("2018 ESPP") included in the Company's condensed statements of operations and comprehensive loss (in thousands):

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | 2020 | 2019 | 2020 | 2019 |
| Research and development | $ 1,937 | $ 931 | $ 3,472 | $ 1,926 |
| General and administrative | 2,167 | 1,013 | 3,949 | 2,015 |
| Total | $ 4,104 | $ 1,944 | $ 7,421 | $ 3,941 |

Stock based compensation for the six months ended June 30, 2020 includes $0.1 million of expense related to awards accounted for as liability awards.

**9. Net Loss per Common Share**

Basic net loss per share is calculated by dividing net loss by the weighted-average number of shares outstanding for the period. Diluted net loss per share is calculated by dividing net loss by the weighted-average number of shares of common stock and potential dilutive common stock equivalents outstanding during the period if the effect is dilutive.

The calculation of diluted earnings (loss) per share also requires that, to the extent contingencies are satisfied during the period and the presumed issuance of additional shares as contingent consideration is dilutive to earnings (loss) per share for the period, adjustments to net income or net loss used in the calculation are required to remove the change in fair value of the contingent consideration liability for the period. Likewise, adjustments to the denominator are required to reflect the related dilutive shares. In all periods presented, the Company's outstanding stock options, RSUs (including PSUs), early exercised common stock subject to future vesting, restricted stock accounted for as options, shares subject to the 2018 ESPP and presumed issuance of additional shares as contingent consideration were excluded from the calculation of diluted net loss per share because their effects were antidilutive.

A reconciliation of the numerators and denominators used in computing net loss from continuing operations per share is as follows (in thousands, except share and per share amounts):

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | 2020 | 2019 | 2020 | 2019 |
| Numerator: | | | | |
| Net loss | $ (18,667) | $ (23,673) | $ (46,705) | $ (42,440) |
| Denominator: | | | | |
| Weighted-average number of shares outstanding—basic and diluted | 49,659,153 | 42,442,886 | 48,606,768 | 42,311,040 |
| Net loss per share—basic and diluted | $ (0.38) | $ (0.56) | $ (0.96) | $ (1.00) |

Since the Company was in a net loss position for all periods presented, basic net loss per common share is the same as diluted net loss per common share as the inclusion of all potential common shares outstanding would have been anti-dilutive. Potentially dilutive securities that were not included in the diluted per share calculations because they would be anti-dilutive were as follows:

| | June 30, | |
|---|---|---|
| | 2020 | 2019 |
| Options to purchase common stock | 9,468,522 | 7,051,590 |
| Early exercised common stock subject to future vesting | 80,285 | 478,288 |
| RSUs | 840,642 | — |
| Shares subject to 2018 ESPP | 68,188 | 52,047 |
| Total | 10,457,637 | 7,581,925 |

Up to 640,218 shares may be contingently issued, if certain performance conditions are met under the Company's in-licensing agreements. See Note 5, "License Agreements," to our condensed financial statements for additional information.

**10. Subsequent Events**

On July 30, 2020, the Company notified Ascentage International of its intention to terminate its license agreement for its compound APG1252 due to the Company's decision to prioritize the progression of other compounds from Ascentage International's library of Bcl-2 inhibitors, such as UBX1325 and UBX1967. Pursuant to its terms, the APG1252 license agreement and all amendments thereto will terminate ninety days from the date of such notice.

On July 31, 2020, the Company entered into a sales agreement (the "July 2020 Sales Agreement") with Cowen and Company, LLC ("Cowen") to sell shares of the Company's common stock, from time to time, with aggregate gross sales proceeds of up to $50.0 million, through an at-the-market equity offering program under which Cowen will act as its sales agent. The issuance and sale of shares of common stock by the Company pursuant to the July 2020 Sales Agreement are deemed an "at-the-market" offering under the Securities Act of 1933, as amended (the "Securities Act"). Cowen is entitled to compensation for its services equal to up to 3.0% of the gross proceeds of any shares of common stock sold through Cowen under the July 2020 Sales Agreement. In addition, the Company has agreed to reimburse a portion of the expenses of Cowen in connection with the offering up to a maximum of $0.1 million.

During July 2020, the Company issued and sold 882,106 shares of its common stock through its ATM Offering Program and received net proceeds of approximately $7.7 million, after deducting commissions of $0.2 million.

## Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

*You should read the following management's discussion and analysis of our financial condition and results of operations in conjunction with our unaudited condensed financial statements and notes thereto included in Part I, Item 1 of this Quarterly Report on Form 10-Q and with our audited financial statements and notes thereto for the year ended December 31, 2019.*

### Overview

We are a biotechnology company engaged in researching and developing therapeutics to extend healthspan by slowing, halting or reversing diseases of aging. Our initial focus is on creating senolytic medicines to selectively eliminate senescent cells and thereby treat age-related diseases, such as musculoskeletal, ophthalmologic and pulmonary diseases.

In June 2019, we reported top-line results from our Phase 1 clinical study of UBX0101, our lead product candidate, in patients with moderate-to-severe osteoarthritis, or OA, of the knee. The study demonstrated that UBX0101 was well-tolerated. Dose-dependent improvement in several clinical measures, including pain and function, as well as modulation of multiple senescence-associated secretory phenotype, or SASP, factors and disease-related biomarkers, was observed after a single dose of UBX0101.

In the fourth quarter of 2019, we initiated a Phase 2 study of UBX0101 in patients with painful, moderate-to-severe OA of the knee. As of mid-February 2020, this study was fully enrolled and we continue to expect top-line results for the 12-week endpoints in the third quarter of 2020 and for the 24-week endpoints by the end of 2020. The study is randomized, double-blind, and placebo-controlled and will evaluate three doses (0.5 mg, 2.0 mg and 4.0 mg) of UBX0101 administered via a single intra-articular injection. The primary measure is an assessment of pain at 12 weeks using the WOMAC-A instrument. Secondary measures will include safety and tolerability, pain (by NRS) and function (by WOMAC-C) at 12 weeks, as well as these same measures at 24 weeks.

In the first quarter of 2020, we initiated a Phase 1b study of UBX0101 in patients with painful, moderate-to-severe OA of the knee to evaluate the safety, tolerability and initial effectiveness of both a higher dose and repeat doses. As of the end of March 2020, this study was fully enrolled and we continue to expect to announce top-line results for the 12- and 24-week endpoints in the second half of 2020. This Phase 1b study is randomized, double-blind, and placebo-controlled and will evaluate an 8.0 mg dose of UBX0101 administered via a single intra-articular injection as well as two 4.0 mg doses of UBX0101 administered via intra-articular injection one month apart. The primary measures will be safety and tolerability. Secondary measures will include pain (using the WOMAC-A and NRS instruments) and function (by WOMAC-C) at 12 weeks, as well as similar measures at 24 weeks.

On July 1, 2020, we announced the completion of Investigational New Drug application, or IND, enabling non-clinical toxicology studies with UBX1325, an investigational senolytic, small molecule inhibitor of the anti-apoptotic Bcl-2 family member, Bcl-xL. We plan to initiate a Phase 1 clinical study for UBX1325 and, assuming clinical sites are able to recruit and retain investigators and study staff and screen and enroll patients during the ongoing COVID-19 pandemic, to initiate a Phase 1 study in the second half of 2020 and obtain initial results from the study in 2021. The overall clinical program is directed at multiple age-related diseases of the eye, such as diabetic macular edema, diabetic retinopathy and age-related macular degeneration. However, the impact of the COVID-19 pandemic on the timing of study initiations, enrollment and completions is hard to assess due the rapidly evolving nature of the situation and it is possible that the study initiation, enrollment and completion may be delayed.

Since the commencement of our operations, we have invested a significant portion of our efforts and financial resources in research and development activities, and we have incurred net losses each year since inception. Our net losses were $46.7 million and $42.4 million for the six months ended June 30, 2020 and 2019, respectively. We do not have any products approved for sale, and we have never generated any revenue from contracts with customers. As of June 30, 2020, we had an accumulated deficit of $292.2 million, and we do not

expect positive cash flows from operations in the foreseeable future. We expect to continue to incur net operating losses for at least the next several years as we continue our research and development efforts, advance our drug candidates through preclinical and clinical development, seek regulatory approval, prepare for and, if approved, proceed to commercialization.

We have historically funded our operations primarily from the issuance and sale of convertible preferred stock and convertible promissory notes, as well as public equity issuances. On June 3, 2019, we entered into a sales agreement or, the June 2019 Sales Agreement, with Cowen and Company, LLC, or, Cowen, to sell shares of our common stock, from time to time, with aggregate gross sales proceeds of up to $75.0 million through an at-the-market equity offering program under which Cowen acts as sales agent, or the ATM Offering Program. During the six months ended June 30, 2020, we issued and sold 4,107,870 shares of our common stock through our ATM Offering Program and received net proceeds of approximately $29.5 million, after deducting commissions and other offering expenses of $1.0 million. On July 31, 2020, we entered into a second sales agreement, or the July 2020 Sales Agreement, with Cowen to sell an additional $50.0 million of our shares of common stock through an additional at-the-market equity offering program in which it acts as sales agent.

We do not expect to generate revenue from any drug candidates that we develop until we obtain regulatory approval for one or more of such drug candidates and commercialize our products or enter into collaborative agreements with third parties. Substantially all of our net losses have resulted from costs incurred in connection with our research and development programs and from general and administrative costs associated with our operations. As a result, we will need to raise additional capital. Adequate funding may not be available to us on acceptable terms, or at all, particularly in light of the current COVID-19 pandemic and associated economic uncertainty and potential for local and/or global economic recession. If sufficient funds on acceptable terms are not available when needed, we could be required to significantly reduce our operating expenses and delay, reduce the scope of, or eliminate one or more of our development programs.

We rely on third parties in the conduct of our preclinical studies and clinical trials and for manufacturing and supply of our drug candidates. We have no internal manufacturing capabilities, and we will continue to rely on third parties, many of whom are single-source suppliers, for our preclinical and clinical trial materials, as well as the commercial supply of our products. In addition, we do not yet have a marketing or sales organization or commercial infrastructure. Accordingly, we will incur significant expenses to develop a marketing and sales organization and commercial infrastructure in advance of generating any product sales.

***COVID-19 Update***

The COVID-19 pandemic has placed strains on the providers of healthcare services, including the healthcare institutions and Institutional Review Boards under whose auspices we conduct our clinical trials. These strains have resulted in the prohibition of the initiation of new clinical trials, slowing or halting enrollment in existing trials and restrictions placed upon on-site monitoring activities of clinical trials. In response to the COVID-19 pandemic, we amended the clinical study protocols for our ongoing Phase 2 and Phase 1b UBX0101 clinical studies to enable remote data collection for clinical sites that are limited in their ability to conduct study visits in person, for either site or patient safety reasons. We also instituted remote data source verification procedures to limit the extent that on-site monitoring was required. While we are still able to collect data for the primary endpoint and most of the secondary endpoints for both studies, other assessments that require an on-site visit may be missed for some or all patients including laboratory evaluations, physical exams, or imaging.

Although one of the manufacturers in our supply chain for UBX0101 experienced a two-week shutdown in April 2020 due to a COVID-19 related incident and there have been some delays in shipments due to a reduction in overall flights, neither of these factors have impacted our supply of UBX0101. There have been no other disruptions in our supply chain of drug manufacturers necessary to conduct our clinical trials and given our drug inventories, we have sufficient drug supply for our ongoing Phase 2 and Phase 1b clinical studies as well as our planned Phase 1 study in ophthalmologic disease.

Several of the contract research organizations (CROs) that provide preclinical services to us are based in China and India and experienced temporary shutdowns in February and March due to government mandates. In each case we were able to reassign the balance of activities to other CROs and the shutdowns did not impact our

preclinical timelines. CROs based in the United States that provide preclinical services are experiencing heavy demand which may impact their ability to start new studies and could lead to delays in the commencement of our preclinical studies. Several of our U.S.-based academic research partners have also experienced shutdowns which has slowed progress on several early stage projects, none of which impacted preclinical timelines.

In late February 2020, we created an internal, cross-functional COVID-19 Response Team to closely monitor the evolving situation and manage our response. In alignment with public health guidance designed to slow the spread of COVID-19, beginning in mid-March 2020, we implemented a reduced onsite staffing model and transitioned to a remote work plan for all employees other than those providing essential services, such as our laboratory staff. For our onsite employees, we have implemented heightened health and safety measures designed to comply with applicable federal, state and local guidelines in response to the COVID-19 pandemic. We are further supporting all of our employees by leveraging virtual meeting technology and encouraging employees to follow local health authority guidance. We may need to undertake additional actions that could impact our operations if required by applicable laws or regulations or if we determine to be in the best interests of our employees.

**Components of Our Results of Operations**

***Research and Development Expenses***

Research and development expenses consist primarily of costs incurred for the development of our drug candidates, which include:

- personnel-related expenses, including salaries, benefits and stock-based compensation for personnel contributing to research and development activities;
- laboratory expenses including supplies and services;
- clinical trial expenses;
- expenses incurred under agreements with third-party contract manufacturing organizations, contract research organizations, research and development service providers, academic research institutions, and consultants;
- expenses related to license and sponsored research agreements; and
- facilities and other allocated expenses, including expenses for rent and facilities maintenance, and depreciation and amortization.

We expect our research and development expenses to increase as we advance our drug candidates into and through preclinical and clinical trials and pursue regulatory approval of our drug candidates. The process of conducting the clinical trials required to obtain regulatory approval is costly and time-consuming. Clinical trials generally become larger and more costly to conduct as they advance into later stages and we are required to make estimates for expense accruals related to clinical trial expenses. The actual probability of success for our drug candidates may be affected by a variety of factors including: the safety and efficacy of our drug candidates, early clinical data, investment in our clinical program, the ability of collaborators, if any, to successfully develop any drug candidates we license to them, competition, manufacturing capability and commercial viability. We may never succeed in achieving regulatory approval for any of our drug candidates. Program costs that are direct external expenses are tracked on a program-by-program basis once they enter clinical studies. As a result of the uncertainties discussed above, we are unable to determine the duration and completion costs of our research and development projects or when and to what extent we will generate revenue from the commercialization and sale of our drug candidates.

***General and Administrative Expenses***

Our general and administrative expenses consist primarily of personnel costs, allocated facilities costs and other expenses for outside professional services, including legal, audit and accounting services, and depreciation and amortization expense related to property and equipment. Personnel costs consist of salaries, benefits, insurance and stock-based compensation. We expect to continue to incur additional expenses associated with operating as a public company, including expenses related to compliance with the rules and regulations of the Securities and Exchange Commission and standards applicable to companies listed on a national securities exchange, additional insurance expenses, investor relations activities and other administrative and professional services. We also expect to continue to increase the size of our administrative headcount to support the growth of our business and operate as a public company.

***Fair Value of Contingent Consideration***

Certain of our license agreements include contingent consideration in the form of additional issuances of our common stock based on the achievement of certain milestones. For asset acquisitions, we assess whether such contingent consideration obligation meets the definition of a derivative and/or can be equity classified, until such time that the contingency or equity classification criteria is met or expires. As of June 30, 2020, we have recorded a liability related to contingent consideration as the net settlement criteria of the definition of a derivative had been met and equity classification criteria had not been met. The derivative related to this contingent consideration is measured at fair value as of each balance sheet date with the related change in fair value being reflected in operating results. Gains or losses on contingent consideration expense is driven by changes in the estimated fair value of the liability, which is determined using a probability-weighted valuation approach model that reflects the probability and timing of future issuances of our common shares.

***Interest Income***

Interest income is primarily related to interest earned on our marketable securities for the six months ended June 30, 2020 and 2019.

***Other Income (Expense), Net***

We hold an equity investment in an entity called Ascentage Pharma Group International, or Ascentage International, an affiliate of a Hong Kong-based clinical-stage biopharmaceutical company called Ascentage Pharma Group Corp. Limited. In October 2019, Ascentage International completed an initial public offering of shares of its common stock on the Hong Kong Stock Exchange. Following the initial public offering, the underlying nature of our investment in Ascentage International changed and met the definition of an investment in an equity security with a readily determinable fair value to be measured at fair value on a recurring basis, based on quoted stock price available on the Hong Kong Stock Exchange. Other income (expense), net, includes changes in fair value and recognized gains or losses upon sale of the investment in this equity security.

**Results of Operations**

***Comparison of the Three and Six Months Ended June 30, 2020 and 2019***

The following table sets forth the significant components of our results of operations (in thousands):

| | Three Months Ended June 30, | | | Six Months Ended June 30, | | |
|---|---|---|---|---|---|---|
| | 2020 | 2019 | Change | 2020 | 2019 | Change |
| Summary of Operations Data: | | | | | | |
| Operating expenses: | | | | | | |
| Research and development | $ 16,123 | $ 18,468 | $ (2,345) | $ 35,388 | $ 34,973 | $ 415 |
| General and administrative | 6,320 | 4,970 | 1,350 | 12,273 | 9,447 | 2,826 |
| Change in fair value of contingent consideration | 906 | 1,032 | (126) | 685 | (213) | 898 |
| Impairment of long-lived assets | — | — | — | 2,159 | — | 2,159 |
| Total operating expenses | 23,349 | 24,470 | (1,121) | 50,505 | 44,207 | 6,298 |
| Loss from operations | (23,349) | (24,470) | 1,121 | (50,505) | (44,207) | (6,298) |
| Interest income | 340 | 900 | (560) | 867 | 1,906 | (1,039) |
| Other income (expense), net | 4,342 | (103) | 4,445 | 2,933 | (139) | 3,072 |
| Net loss | $ (18,667) | $ (23,673) | $ 5,006 | $ (46,705) | $ (42,440) | $ (4,265) |

***Research and Development***

Research and development expenses decreased by $2.3 million, to $16.1 million for the three months ended June 30, 2020 from $18.5 million for the three months ended June 30, 2019. The decrease was primarily due to a decrease of $5.3 million in pre-clinical and manufacturing expenses partially offset by a $1.8 million increase in clinical study related costs, driven by progression of UBX0101 to clinical stage, and increases of $1.2 million in personnel-related costs, of which $1.0 million was related to non-cash stock-based compensation expense.

Research and development expenses increased by $0.4 million, to $35.4 million for the six months ended June 30, 2020 from $35.0 million for the six months ended June 30, 2019. The increase was primarily due to increases of $5.5 million in clinical study costs, driven by increased development costs associated with UBX0101, $1.7 million in personnel-related costs, of which $1.5 million was related to non-cash stock-based compensation expense, and $2.2 million in facilities-related costs, partially offset by decreases of $7.5 million in pre-clinical activities and $1.3 million in laboratory supplies.

***General and Administrative***

General and administrative expenses increased by $1.4 million, to $6.3 million for the three months ended June 30, 2020 from $5.0 million for the three months ended June 30, 2019. The increase was primarily due to increases of $1.2 million in non-cash stock-based compensation expense, and $0.2 million in facilities-related costs.

General and administrative expenses increased by $2.8 million, to $12.3 million for the six months ended June 30, 2020 from $9.4 million for the six months ended June 30, 2019. The increase was primarily due to increases of $2.1 million in personnel-related expenses, of which $1.9 million was related to non-cash stock-based compensation, $0.4 million in facilities-related costs, and $0.3 million in insurance expense.

***Change in Fair Value of Contingent Consideration***

Change in fair value of contingent consideration was $0.9 million for the three months ended June 30, 2020, and $0.7 million for the six months ended June 30, 2020. The change in the fair value of contingent consideration was primarily due to changes in assumptions, including probabilities and our stock price.

***Impairment of Long-Lived Assets***

Impairment charges for the six months ended June 30, 2020 consisted of impairment of long-lived assets. On February 1, 2020, we evaluated the right-of-use asset and related leasehold improvements upon exit of our former headquarters located in Brisbane, California, and recorded an impairment charge of $2.2 million.

***Interest Income***

Our interest income was $0.3 million for the three months ended June 30, 2020 as compared to $0.9 million for the three months ended June 30, 2019. Interest income is earned from our funds invested in cash equivalents and marketable securities. The change for the three months ended June 30, 2020 is primarily attributable to the changes in balances of cash equivalents and marketable securities.

Our interest income was $0.9 million for the six months ended June 30, 2020 as compared to $1.9 million for the six months ended June 30, 2019. The change for the six months ended June 30, 2020 is primarily attributable to the changes in balances of cash equivalents and marketable securities.

***Other Income (Expense), Net***

Other income (expense), net, of $4.3 million and $2.9 million for the three and six months ended June 30, 2020, respectively, was primarily due to the increase in the fair value of our strategic investment.

**Liquidity, Capital Resources and Capital Requirements**

***Sources of Liquidity***

We have incurred net losses each year since inception. We do not have any products approved for sale and have never generated any revenue from product sales. Historically, we have incurred operating losses as a result of ongoing efforts to develop our drug candidates, including conducting ongoing research and development, preclinical studies and providing general and administrative support for these operations. As of June 30, 2020, we had an accumulated deficit of $292.2 million, and we do not expect positive cash flows from operations in the foreseeable future. We expect our operating losses and net cash used in operating activities will increase over at least the next several years as we continue our research and development activities, advance our drug candidates through preclinical and clinical testing and move into later and more costly stages of drug development, hire personnel and prepare for regulatory submissions and the commercialization of our drug candidates.

We have historically financed our operations primarily through private placements of preferred stock and promissory notes, public equity issuances and more recently through our ATM Offering Program, and will continue to be dependent upon equity and/or debt financing until we are able to generate positive cash flows from our operations.

In June 2019, we filed a Registration Statement on Form S-3 (the “Shelf Registration Statement”), covering the offering of up to $250.0 million of common stock, preferred stock, debt securities, warrants and units. The Shelf Registration Statement included a prospectus covering the offering, issuance and sale of up to $75.0 million of our common stock from time to time through the ATM Offering Program. The SEC declared the Shelf Registration Statement effective in June 2019. In June 2019, we also entered into a sales agreement with Cowen, pursuant to which we may sell from time to time, at our option, up to $75.0 million of our common stock through the ATM Offering Program under which Cowen acts as sales agent. During the six months ended June 30, 2020, we issued and sold 4,107,870 shares of our common stock through our ATM Offering Program and received net proceeds of approximately $29.5 million, after deducting commissions and other offering expenses of $1.0 million. As of June 30, 2020, common stock valued at $17.0 million remained available to be sold under our ATM Offering Program. On July 31, 2020, we entered into a second sales agreement with Cowen to sell an additional $50.0 million of our shares of common stock through an additional at-the-market equity offering program in which it acts as sales agent.

***Future Funding Requirements***

To date we have not generated any revenue from contracts with customers and have received a contribution from a third-party organization for certain research and development activities to support their philanthropic mission. We expect to continue to incur significant losses for the foreseeable future, and we expect the losses to increase as we continue the development of, and seek regulatory approvals for, our drug candidates, and begin to commercialize any approved products. We are subject to all of the risks typically related to the development of new drug candidates, and we may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. Moreover, since becoming a public company, we continue to incur additional ongoing costs associated with operating as a public company. We anticipate that we will need substantial additional funding in connection with our continuing operations.

Until we can generate a sufficient amount of revenue from the commercialization of our drug candidates or from collaborative agreements with third parties, if ever, we expect to finance our future cash needs through various means. Additional capital may be raised through the sale of our equity securities, incurring debt, entering into licensing or collaboration agreements with partners, receiving research contributions, grants or other sources of financing to fund our operations. There can be no assurance that sufficient funds will be available to us on attractive terms or at all, particularly in light of the current COVID-19 pandemic and associated economic uncertainty and potential for local and/or global economic recession. If we are unable to obtain additional funding from these or other sources, it may be necessary to significantly reduce our rate of spending through reductions in staff and delaying, scaling back, or stopping certain research and development programs. Insufficient liquidity may also require us to relinquish rights to drug candidates at an earlier stage of development or on less favorable terms than we would otherwise choose.

Since our inception, we have incurred significant losses and negative cash flows from operations. We have an accumulated deficit of $292.2 million through June 30, 2020. We expect to incur substantial additional losses in the future as we conduct and expand our research and development activities. We believe that our existing cash, cash equivalents and marketable securities will be sufficient to enable us to fund our projected operations through at least the next 12 months. Based on our current operating plans, we expect our existing capital resources will fund our planned operating expenses into the second half of 2021, including through clinical data readouts from the Phase 2 clinical study of UBX0101 we initiated in the fourth quarter of 2019 and, the higher dose and repeat dose Phase 1b study of UBX0101 we initiated in the first quarter of 2020, as well as initial data from Phase 1 clinical study of UBX1325 in age-related eye disease.

We have based our projections of operating capital requirements on assumptions that may prove to be incorrect and we may use all our available capital resources sooner than we expect. Because of the numerous risks and uncertainties associated with research, development and commercialization of biotechnology products, we are unable to estimate the exact amount of our operating capital requirements. Our future funding requirements will depend on many factors, including, but not limited to:

- the scope, progress, results and costs of researching and developing UBX0101, UBX1325, UBX1967, or any other drug candidates, and conducting preclinical studies and clinical studies, including our ongoing Phase 2 clinical study of UBX0101, which we initiated in the fourth quarter of 2019, the Phase 1b clinical study of UBX0101, which we initiated in the first quarter of 2020, and our planned initial clinical studies in our ophthalmology program;

- the timing of, and the costs involved in, obtaining regulatory approvals for our lead drug candidates or any future drug candidates;

- potential delays in or cost increases associated with our ongoing or planned preclinical studies or clinical trials as a result of the COVID-19 pandemic;

- the number and characteristics of any additional drug candidates we develop or acquire;

- the timing and amount of any milestone payments we are required to make pursuant to our license agreements;

- the cost of manufacturing our lead drug candidates or any future drug candidates and any products we successfully commercialize;
- the cost of building a sales force in anticipation of product commercialization;
- the cost of commercialization activities if our lead drug candidates or any future drug candidates are approved for sale, including marketing, sales and distribution costs;
- our ability to establish and maintain strategic collaborations, licensing or other arrangements and the financial terms of any such agreements, including the timing and amount of any future milestone, royalty or other payments due under any such agreement;
- any product liability or other lawsuits related to our products;
- the expenses needed to attract, hire and retain skilled personnel;
- the costs associated with being a public company;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing our intellectual property portfolio; and
- the timing, receipt and amount of sales of any future approved or cleared products, if any.

**Cash Flows**

The following table sets forth a summary of the primary sources and uses of cash, cash equivalents and restricted cash for each of the periods presented below (in thousands):

| | Six Months Ended June 30, | |
|---|---|---|
| | 2020 | 2019 |
| Cash used in operating activities | $ (44,358) | $ (39,897) |
| Cash provided by investing activities | 15,975 | 47,344 |
| Cash provided by financing activities | 30,502 | 1,163 |
| Net increase in cash, cash equivalents and restricted cash | $ 2,119 | $ 8,610 |

***Operating Activities***

Cash used in operating activities of $44.4 million for the six months ended June 30, 2020 consisted primarily of a net loss of $46.7 million, adjusted for net non-cash charges of $8.8 million and changes in net operating assets and liabilities of $6.5 million. Our non-cash charges consisted primarily of $7.4 million in stock-based compensation, $2.2 million in impairment charges pertaining to leasehold improvements and right of use assets in the Company's former offices, $1.8 million in depreciation and amortization, and $0.7 million change in fair value of contingent consideration liability associated with our license agreements, all partially offset by $3.1 million change in fair value of our strategic investment. The net change in our operating assets and liabilities consisted primarily of a decrease of $2.3 million in accrued compensation, $1.3 million in accounts payable, $1.0 million in accrued liabilities and other current liabilities, and an increase of $2.0 million in prepaid expenses and other current assets.

Cash used in operating activities of $39.9 million for the six months ended June 30, 2019 consisted primarily of a net loss of $42.4 million adjusted for net non-cash charges of $4.7 million and partially offset by a decrease of $2.2 million in net operating assets and liabilities. Our non-cash charges consisted primarily of $3.9 million in stock-based compensation, $1.3 million in depreciation and amortization, and $1.0 million in common stock granted to a third party, offset by $0.8 million in amortization of premium and discounts on marketable securities, $0.5 million in accretion of our tenant improvement allowance, and $0.2 million change in fair value of

contingent consideration liability associated with our two license agreements and our compound library and option agreement. The net change in our operating assets and liabilities consisted primarily of decreases of $1.0 million in accrued compensation and $1.0 million in accrued liabilities and other current liabilities, and an increase of $0.8 million in prepaid expenses and other current assets, offset by increases of $0.4 million in accounts payable and $0.3 million in deferred rent, net of current portion.

***Investing Activities***

Cash provided by investing activities of $16.0 million for the six months ended June 30, 2020 was related to maturities of marketable securities of $65.3 million and $0.8 million from the sales of our strategic investment, which were offset by purchases of marketable securities of $49.8 million and property and equipment of $0.4 million.

Cash provided by investing activities of $47.3 million for the six months ended June 30, 2019 was related to maturities of marketable securities of $98.5 million which were partially offset by purchases of marketable securities of $50.7 million and purchases of property and equipment of $0.4 million.

***Financing Activities***

Cash provided by financing activities of $30.5 million for the six months ended June 30, 2020 was primarily related to $29.5 million in proceeds from the sale of common stock through our ATM Offering Program, net of issuance costs, $0.6 million proceeds from issuance of common stock upon exercise of stock options, net of repurchases, and $0.4 million proceeds from issuance of common stock under the 2018 ESPP.

Cash provided by financing activities of $1.2 million for the six months ended June 30, 2019 was primarily related to $0.8 million in proceeds from issuance of common stock upon exercise of stock options, net of repurchases, and $0.4 million in proceeds from issuance of common stock under the 2018 ESPP.

**Contractual Obligations and Other Commitments**

Our contractual obligations and commitments relate primarily to our operating leases and non-cancelable purchase obligations under agreements with various research and development organizations and suppliers in the ordinary course of business. In February 2019, we entered into a lease agreement for new office and laboratory space in South San Francisco, California. See Note 6, “Commitments and Contingencies,” to our condensed financial statements for further information.

We are party to various license agreements pursuant to which we have in-licensed rights to various technologies, including patents, research “know-how” and proprietary research tools, for the discovery, research, development and commercialization of drug candidates to treat age-related diseases. The license agreements obligate us to make certain milestone payments related to specified clinical development and sales milestone events, as well as tiered royalties in the low-single digits based on sales of licensed products. See Note 5, “License Agreements,” to our condensed financial statements for additional information.

On July 30, 2020, we notified Ascentage International of our intention to terminate our license agreement for its compound APG1252 due to our decision to prioritize the progression of other compounds from Ascentage International’s library of Bcl-2 inhibitors, such as UBX1325 and UBX1967. Pursuant to its terms, the APG1252 license agreement and all amendments thereto will terminate ninety days from the date of such notice.

**Indemnification**

In the normal course of business, we enter into contracts and agreements that contain a variety of representations and warranties and provide for general indemnifications. Our exposure under these agreements is unknown because it involves claims that may be made against us in the future but have not yet been made. To date, we have not paid any claims or been required to defend any action related to our indemnification obligations. However, we may record charges in the future as a result of these indemnification obligations.

In accordance with our certificate of incorporation and bylaws, we have potential indemnification obligations to our officers and directors for specified events or occurrences, subject to some limits, while they are serving at our request in such capacities. There have been no claims to date, and we have director and officer insurance that may enable us to recover a portion of any amounts paid for future potential claims.

**Off-Balance Sheet Arrangements**

We have not entered into any off-balance sheet arrangements.

**Critical Accounting Polices and Estimates**

There have been no material changes to our critical accounting policies and estimates during the six months ended June 30, 2020 as compared to those disclosed in our Annual Report on Form 10-K for the year ended December 31, 2019, other than as provided in Note 2 to our condensed financial statements, “Summary of Significant Accounting Policies.”

**Recent Accounting Pronouncements**

See Note 2 to our condensed financial statements, “Summary of Significant Accounting Policies,” for information.

**JOBS Act Accounting Election**

We are an emerging growth company, as defined in the JOBS Act. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We have irrevocably elected to avail ourselves of this exemption from new or revised accounting standards and, therefore, will not be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies. We also rely on other exemptions provided by the JOBS Act, including, without limitation, providing an auditor’s attestation report on our system of internal controls over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act. We will remain an emerging growth company until the earlier of (1) the last day of the year following the fifth anniversary of the consummation of our IPO, (2) the last day of the year in which we have total annual gross revenue of at least $1.07 billion, (3) the last day of the year in which we are deemed to be a “large accelerated filer” as defined in Rule 12b-2 under the Exchange Act, which would occur if the market value of our common stock held by non-affiliates exceeded $700.0 million as of the last business day of the second fiscal quarter of such year or (4) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period. Even after we no longer qualify as an emerging growth company, we may still qualify as a “smaller reporting company” which may allow us to take advantage of many of the same exemptions from disclosure requirements including not being required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act.

**Item 3. Quantitative and Qualitative Disclosures About Market Risk**

We are exposed to market risks in the ordinary course of our business. These risks primarily relate to interest rate sensitivities, which are affected by changes in interest rates, including interest rate changes resulting from the effects of the COVID-19 pandemic. We had cash, cash equivalents and marketable securities of $111.8 million as of June 30, 2020, which consist of bank deposits, money market funds, and marketable securities. The primary objective of our investment activities is to preserve capital to fund our operations. We also seek to maximize income from our investments without assuming significant risk. Because our investments are primarily short-term in duration, we believe that our exposure to interest rate risk is not significant, and a 1% movement in market interest rates would not have a significant impact on the total value of our portfolio. We had no debt outstanding as of June 30, 2020.

There have been no material changes to our market risks from those disclosed in our Annual Report on Form 10-K for the year ended December 31, 2019.

**Item 4. Controls and Procedures**

**Evaluation of Disclosure Controls and Procedures**

Our management, with the participation of our chief executive and financial officers, evaluated the effectiveness of our disclosures controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, as of June 30, 2020. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of June 30, 2020, our chief executive officer and chief financial officer concluded that, as of such date, our disclosure controls and procedures were effective at a reasonable assurance level.

**Changes in Internal Control over Financial Reporting**

Management determined that, as of June 30, 2020, there were no changes in our internal control over financial reporting that occurred during the fiscal quarter then ended that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

## PART II. OTHER INFORMATION

### Item 1. Legal Proceedings

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

### Item 1A. Risk Factors

This Quarterly Report on Form 10-Q contains forward-looking information based on our current expectations. Because our business is subject to many risks and our actual results may differ materially from any forward-looking statements made by or on behalf of us, this section includes a discussion of important factors that could affect our business, operating results, financial condition and the trading price of our common stock. Many of the following risks and uncertainties are, and will be, exacerbated by the COVID-19 pandemic and any worsening of the global business and economic environment as a result. This discussion should be read in conjunction with our condensed financial statements as of June 30, 2020 and our financial statements as of December 31, 2019 contained in our Annual Report on Form 10-K for the year ended December 31, 2019 and the notes accompanying those financial statements.

**Risks Related to Our Limited Operating History, Financial Condition, and Capital Requirements**

***We are a clinical-stage biopharmaceutical company with a limited operating history and no products approved for commercial sale. We have incurred significant losses since our inception, and we anticipate that we will continue to incur losses for the foreseeable future, which, together with our limited operating history, make it difficult to assess our future viability.***

We are a clinical-stage biopharmaceutical company with a limited operating history. Biopharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. We have not yet sought approval for commercial sale of any products and therefore have no products approved for commercial sale and have not generated any revenue from contracts with customers and have incurred losses in each year since our inception in March 2009. We have only a limited operating history upon which you can evaluate our business and prospects. In addition, we have limited experience and have not yet demonstrated an ability to successfully overcome many of the risks and uncertainties frequently encountered by companies in new and rapidly evolving fields, particularly in the biopharmaceutical industry. We completed a Phase 1 clinical study of UBX0101, a senolytic small molecule inhibitor of the MDM2/p53 protein-protein interaction, in patients with osteoarthritis, or OA, of the knee and announced initial results in the second quarter of 2019. We initiated a Phase 2 clinical study in OA of the knee in the fourth quarter of 2019 and we expect top-line results for the 12-week endpoints in the third quarter of 2020 and for the 24-week endpoints by the end of 2020. We also initiated a Phase 1b study to evaluate the safety, tolerability and initial effectiveness of both a higher dose and repeat doses of UBX0101 in the first quarter of 2020. We continue to expect top-line results for the 12- and 24-week endpoints from the Phase 1b study in the second half of 2020.

We have had significant operating losses since our inception. Our net loss for the six months ended June 30, 2020 and 2019 was approximately $46.7 million and $42.4 million, respectively. As of June 30, 2020, we had an accumulated deficit of $292.2 million. Substantially all of our losses have resulted from expenses incurred in connection with our research and development programs and from general and administrative costs associated with our operations. We expect to continue to incur losses for the foreseeable future, and we anticipate these losses will increase as we continue to develop our drug candidates, conduct clinical studies and pursue research and development activities. Even if we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods. Our prior losses, combined with expected future losses, have had and will continue to have an adverse effect on our stockholders' equity and working capital.

***We will require substantial additional financing to achieve our goals, and a failure to obtain this capital when needed on acceptable terms, or at all, could force us to delay, limit, reduce or terminate our product development, other operations or commercialization efforts.***

Since our inception, we have invested a significant portion of our efforts and financial resources in research and development activities. Preclinical studies and clinical studies for our drug candidates and additional research and development activities to discover and develop new drug candidates will require substantial funds to complete. As of June 30, 2020, we had capital resources consisting of cash, cash equivalents, and marketable securities of $111.8 million. We believe that we will continue to expend substantial resources for the foreseeable future in connection with the preclinical and clinical development of our lead drug candidates, UBX0101, UBX1325 and UBX1967, and the discovery and/or development of any other drug candidates we may choose to pursue. These expenditures will include costs associated with conducting preclinical studies and clinical studies, obtaining regulatory approvals, and manufacturing and supply, as well as marketing and selling any products approved for sale. In addition, other unanticipated costs may arise. Because the outcome of any preclinical study or clinical study is highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development and commercialization of our lead drug candidates or any future drug candidates.

We believe that our existing cash, cash equivalents and marketable securities will be sufficient to enable us to fund our projected operations through at least the next 12 months. However, our operating plans may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings or other sources, such as strategic collaborations. Such financing may result in dilution to stockholders, the imposition of burdensome debt covenants and repayment obligations, or other restrictions that may affect our business. Adequate funding may not be available to us on acceptable terms, or at all, particularly in light of the current COVID-19 pandemic and associated economic uncertainty and potential for local and/or global economic recession. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans.

Our future capital requirements depend on many factors, including:

- the scope, progress, results and costs of researching and developing UBX0101, UBX1325, UBX1967, or any other drug candidates, and conducting preclinical studies and clinical studies, including our ongoing Phase 2 clinical study of UBX0101, which we initiated in the fourth quarter of 2019, the Phase 1b clinical study of UBX0101, which we initiated in the first quarter of 2020, and our planned initial clinical studies in our ophthalmology program;
- the timing of, and the costs involved in, obtaining regulatory approvals for our lead drug candidates or any future drug candidates;
- potential delays in or an increase in costs associated with our ongoing or planned preclinical studies or clinical trials as a result of the COVID-19 pandemic;
- the number and characteristics of any additional drug candidates we develop or acquire;
- the timing and amount of any milestone payments we are required to make pursuant to our license agreements;

- the cost of manufacturing our lead drug candidates or any future drug candidates and any products we successfully commercialize;
- the cost of building a sales force in anticipation of product commercialization;
- the cost of commercialization activities if our lead drug candidates or any future drug candidates are approved for sale, including marketing, sales and distribution costs;
- our ability to maintain existing, and establish new, strategic collaborations, licensing or other arrangements and the financial terms of any such agreements, including the timing and amount of any future milestone, royalty or other payments due under any such agreement;
- any product liability or other lawsuits related to our products;
- the expenses needed to attract, hire and retain skilled personnel;
- the costs associated with being a public company;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing our intellectual property portfolio; and
- the timing, receipt and amount of sales of any future approved products, if any.

Additional funds may not be available when we need them, on terms that are acceptable to us, or at all. 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 studies or other development activities for our lead drug candidates or any future drug candidate;
- delay, limit, reduce or terminate our research and development activities; or
- delay, limit, reduce or terminate our efforts to establish manufacturing and sales and marketing capabilities or other activities that may be necessary to commercialize our lead drug candidates or any future drug candidate, or reduce our flexibility in developing or maintaining our sales and marketing strategy.

We also could choose or be required to seek funds through arrangements with collaborators or others that may require us to relinquish rights to some of our technologies or drug candidates that we would otherwise pursue on our own. We do not expect to realize revenue from sales of products or royalties from licensed products in the foreseeable future, if at all, and unless and until our drug candidates are clinically tested, approved for commercialization and successfully marketed. To date, we have primarily financed our operations through the sale of debt and equity securities. We will be required to seek additional funding in the future and currently intend to do so through collaborations, public or private equity offerings or debt financings, credit or loan facilities or a combination of one or more of these funding sources. Our ability to raise additional funds will depend on financial, economic and other factors, many of which are beyond our control. For example, financial markets have been negatively impacted by the COVID-19 pandemic and associated economic uncertainty, and such impact may be exacerbated as the COVID-19 pandemic evolves or by other unforeseen events or public health emergencies. Additional funds may not be available to us on acceptable terms or at all. If we raise additional funds by issuing equity securities, our stockholders will suffer dilution and the terms of any financing may adversely affect the rights of our stockholders. In addition, as a condition to providing additional funds to us, future investors may demand, and may be granted, rights superior to those of existing stockholders. Debt financing, if available, is likely to involve restrictive covenants limiting our flexibility in conducting future business activities, and, in the event of insolvency, debt holders would be repaid before holders of our equity securities received any distribution of our corporate assets.

***Due to the significant resources required for the development of our drug candidates, we must prioritize development of certain drug candidates and/or certain disease indications. We may expend our limited resources***

***on candidates or indications that do not yield a successful product and fail to capitalize on drug candidates or indications that may be more profitable or for which there is a greater likelihood of success.***

We plan to continue to develop a pipeline of drug candidates to treat age-related diseases and extend human healthspan. Our clinical development strategy is initially focused on the development of senolytic medicines designed to be administered locally into diseased tissue and we are currently advancing programs in musculoskeletal, ophthalmologic, and pulmonary disorders. We are also in the early stages of developing senolytic medicines that could be administered systemically to treat additional age-related diseases, such as neurodegenerative disease, kidney disease and liver disease. In addition to our efforts to eliminate senescent cells, we are also advancing other programs with the potential to extend human healthspan, including the administration of the administration of α-Klotho hormone.

We seek to maintain a process of prioritization and resource allocation among our programs to maintain a balance between aggressively advancing lead programs in identified indications and exploring additional indications and/or mechanisms related to diseases of aging. However, due to the significant resources required for the development of our drug candidates, we must focus on specific diseases and disease pathways and decide which drug candidates to

pursue and the amount of resources to allocate to each. In response to the COVID-19 pandemic, we implemented a reduced onsite staffing model in mid-March 2020, and as the COVID-19 pandemic evolves we may be required to take additional actions that impact the prioritization of programs as required by applicable laws or regulations, or which we determine to be in the best interest of our employees.

Our near-term objective is to demonstrate in our clinical studies that local treatment with senolytic molecules can alter the course of an age-related disease. To accomplish this goal, we completed a Phase 1 clinical study of UBX0101 in patients with OA of the knee in the second quarter of 2019 and we initiated a Phase 2 clinical study of UBX0101 in OA in the fourth quarter of 2019. In addition, we initiated a Phase 1b clinical study of UBX0101 in OA in the first quarter of 2020. We expect to receive top-line results for the 12-week endpoints in the third quarter of 2020 and for the 24-week endpoints by the end of 2020. In response to the COVID-19 pandemic, we amended the clinical study protocols for these studies to enable remote data collection for clinical sites that are limited in their ability to conduct study visits in person, for either site or patient safety reasons. While we are still able to collect data for the primary endpoint and most of the secondary endpoints for both studies, other assessments that require an on-site visit may be missed for some or all patients including laboratory evaluations, physical exams, and imaging.

To advance our ophthalmology program, we completed Investigational New Drug application, or IND-enabling non-clinical toxicology studies with UBX1325, a senolytic, small molecule inhibitor of the anti-apoptotic Bcl-2 family member, Bcl-xL in the third quarter of 2020. We plan to initiate a Phase 1 clinical study for UBX1325 and, assuming clinical sites are able to recruit investigators and study staff, and enroll patients, we expect to receive initial results from the Phase 1 clinical study in 2021. However, the impact of the COVID-19 pandemic on the timing of study initiations, enrollment and completions is hard to assess due the rapidly evolving nature of the situation and it is possible that the study initiation, enrollment and completion may be delayed.

Our decisions concerning the allocation of research, development, collaboration, management and financial resources toward particular drug candidates or therapeutic areas may not lead to the development of any viable commercial product and may divert resources away from better opportunities. Similarly, our potential decisions to delay, terminate or collaborate with third parties in respect of certain programs may subsequently also prove to be suboptimal and could cause us to miss valuable opportunities. If we make incorrect determinations regarding the viability or market potential of any of our programs or drug candidates or misread trends in the biopharmaceutical industry, particularly those segments focused on aging and healthspan, our business, financial condition and results of operations could be materially adversely affected. As a result, we may fail to capitalize on viable commercial products or profitable market opportunities, be required to forego or delay pursuit of opportunities with other drug candidates or other diseases and disease pathways that may later prove to have greater commercial potential than those we choose to pursue, or relinquish valuable rights to such drug candidates through collaboration, licensing or other royalty arrangements in cases where it may have been more advantageous for us to invest additional resources to retain development and commercialization rights.

***Interim, "top-line" and preliminary data from our clinical trials that we announce or publish from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data.***

From time to time, we may publicly disclose top-line or preliminary data from our clinical trials, which is based on a preliminary analysis of then-available data, and the results and related findings and conclusions are subject to change following a more comprehensive review of the data related to the particular study or trial. We also make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. Potential disruptions caused by the COVID-19 pandemic could exacerbate these challenges. As a result, the top-line or preliminary results that we report may differ from future results of the same studies, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Top-line or preliminary data also remain subject to audit and verification procedures that may result in the final data being materially different from the top-line or preliminary data we previously published. As a result, top-line and preliminary data should be viewed with caution until the final data are available.

From time to time, we may also disclose interim data from our preclinical studies and clinical trials. Interim data from clinical trials that we may conduct are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. Adverse differences between interim data and final data could significantly harm our business prospects. Further, disclosure of interim data by us or by our competitors could result in volatility in the price of our common stock.

Further, others, including regulatory agencies, may not accept or agree with our assumptions, estimates, calculations, conclusions or analyses or may interpret or weigh the importance of data differently, which could impact the value of the particular program, the approvability or commercialization of the particular product candidate or product, our ability to make certain claims about our products, and our company in general. In addition, the information we choose to publicly disclose regarding a particular study or clinical trial is based on what is typically extensive information, and you or others may not agree with what we determine is material or otherwise appropriate information to include in our disclosure.

If the interim, top-line or preliminary data that we report differ from actual results, or if others, including regulatory authorities, disagree with the conclusions reached, our ability to obtain approval for, and commercialize, our product candidates may be harmed, which could harm our business, operating results, prospects or financial condition.

***Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations.***

Our quarterly and annual operating results may fluctuate significantly, making it difficult for us to predict our future operating results. These fluctuations may occur due to a variety of factors, many of which are outside of our control and may be difficult to predict, including:

- the timing, cost and level of investment in research, development and, if approved, commercialization activities relating to our drug candidates, which may change from time to time;
- the timing and status of enrollment for our clinical studies;
- the cost of manufacturing our drug candidates, as well as building out our supply chain, which may vary depending on the quantity of production and the terms of our agreements with manufacturers;
- expenditures we may incur to acquire, develop or commercialize additional drug candidates and technologies;
- timing and amount of any milestone, royalty or other payments due under any collaboration or license agreement;
- future accounting pronouncements or changes in our accounting policies;

- the timing and success or failure of preclinical studies and clinical studies for our drug candidates or competing drug candidates, or any other change in the competitive landscape of our industry, including consolidation among our competitors or partners;

- the timing of receipt of approvals for our drug candidates from regulatory authorities in the United States, or U.S., and internationally;

- coverage and reimbursement policies with respect to our drug candidates, if approved, and potential future drugs that compete with our products;

- the level of demand for our products, if approved, which may vary significantly over time; and

- potential disruption caused by the COVID-19 pandemic or other unforeseen events and public health emergencies.

The cumulative effects of these factors could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance.

This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our revenue or operating results fall below the expectations of analysts or investors or below any forecasts we may provide to the market, or if the forecasts we provide to the market are below the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met any previously publicly stated revenue or earnings guidance we may provide.

**Risks Related to Our Business**

***Our core therapeutic approach to extending human healthspan is based on our understanding of cellular senescence. Utilizing senolytic molecules to treat age-related diseases is a novel therapeutic approach, which exposes us to unforeseen risks and makes it difficult to predict the time and cost of drug development and potential for regulatory approval.***

We are developing a pipeline of drug candidates to treat age-related diseases and extend human healthspan. Our foundational science and lead drug candidates are based on senescence biology. We believe that we can develop drug candidates capable of eliminating or causing the elimination of accumulated senescent cells and their associated Senescence Associated Secretory Phenotype, or SASP, when administered locally. We are also in the early stages of developing senolytic medicines that could be administered systemically to treat additional other age-related diseases such as kidney disease, liver disease, and neurodegenerative disease. In our development efforts we intend to explore senolytic medicines that use multiple modalities. However, our approach to treating age-related diseases is novel and the scientific research that forms the basis of our efforts to develop senolytic medicines is ongoing. We have only recently begun testing our senolytic molecules in humans and the majority of our current data is limited to pre-clinical animal models and *in vitro* cell lines, the results of which may not translate into humans. We currently have no conclusive evidence in humans, that the accumulation of senescent cells and resulting exposure to SASP factors is the underlying cause of tissue damage and dysfunction associated with many age-related diseases.

The indications we are currently pursuing, including OA, of the knee, and several age-related eye diseases, we believe to be heterogeneous and multifactorial diseases driven by multiple factors, including those that could potentially be SASP factors. While evidence suggests that, in each case, individual SASP factors contribute to the disease, it is our belief that modulation of multiple factors is likely needed to achieve a meaningful clinical benefit and we do not yet know which of the SASP factors might be most important in each disease or whether we can measure them. For example, our Phase 1 OA study was designed to measure up to 24 SASP factors and disease biomarkers we believe to be relevant to OA in humans. Of these 24 SASP factors and disease biomarkers, a subset of 19 in the Phase 1 OA study met criteria we established to enable meaningful measurement and analysis. Of these 19 SASP factors and disease biomarkers, ten increased or decreased in a manner we believe consistent with a

mechanism involving disease modulation, one was not consistent with such a mechanism, and changes in the remaining eight were not reliably different from the placebo arm. As such, there can be no assurances that even if we are able to develop senolytic medicines capable of eliminating or causing the elimination of senescent cells and thereby modulating their associated SASP factors, that such medicines would safely and effectively treat age-related diseases.

Further, while cellular senescence is a natural occurring biological process, the administration of senolytic medicines to eliminate or cause the elimination of accumulated senescent cells and modulating their associated SASP in humans has not been widely tested and may potentially harm healthy tissue or result in unforeseen safety events. We may also ultimately discover that our senolytic molecules do not possess certain properties required for therapeutic effectiveness, or that even if found to be effective in one type of tissue, that such molecules will be effective in other tissues. In addition, given the novel nature of this therapeutic approach, designing preclinical and clinical studies to demonstrate the effect of senolytic medicines is complex and exposes us to unforeseen risks. For example, certain of our attempts to replicate early *in vivo* findings in different animal models have proven to be challenging, for example with respect to our efforts to mimic diseases which develop over a long period of time in humans, like OA as well as certain eye and lung diseases. In addition, the scientific evidence to support the feasibility of developing systemic senolytic medicines is both preliminary and limited. We may spend substantial funds attempting to develop these drug candidates and never succeed in doing so.

No regulatory authority has granted approval for a senolytic medicine. As such, we believe the U.S. Food and Drug Administration, or the FDA, has limited experience with senescence, which may increase the complexity, uncertainty and length of the clinical development and regulatory approval process for our drug candidates. We may never receive approval to market and commercialize any drug candidate. Even if we obtain regulatory approval, the approval may be for targets, disease indications or patient populations that are not as broad as we intended or desired or may require labeling that includes significant use or distribution restrictions or safety warnings. We may be required to perform additional or unanticipated clinical studies to obtain approval or be subject to post-marketing testing requirements to maintain marketing authorization. If our senolytic molecules prove to be ineffective, unsafe or commercially unviable, our entire senolytic platform and pipeline would have little, if any, value, which would have a material and adverse effect on our business, financial condition, results of operations and prospects.

***Our business is dependent on the successful development, regulatory approval, and commercialization of our drug candidates, all of which are in early stages of development and none of which have been tested in a human subject.***

We have no products approved for sale and all of our drug candidates are in early stages of development. We completed a Phase 1 clinical study of our first lead drug candidate, UBX0101, in the second quarter of 2019 and we initiated a Phase 2 clinical study of UBX0101 in the fourth quarter of 2019 and a Phase 1b clinical study of both a higher dose and repeat doses in the first quarter of 2020. To advance our ophthalmology program, we completed IND-enabling studies for our lead drug candidate, UBX1325 in the third quarter of 2020. We plan to initiate a Phase 1 clinical study for UBX1325 and, assuming clinical sites are able to recruit investigators and study staff, and enroll patients, we also expect to initiate a Phase 1 study for this program in the second half of 2020 pursuant to which we intend to explore multiple age-related eye diseases. However, the impact of the COVID-19 pandemic timing of study initiations, enrollment and completions is hard to assess due the rapidly evolving nature of the situation and it is possible that the study initiation, enrollment and completion may be delayed.

UBX0101 is the only drug candidate that we have administered to humans, and as such, we face significant translational risk with our drug candidates. We may also be required by the FDA or similar foreign regulatory agencies to conduct additional preclinical studies beyond those planned to support the commencement of clinical trials. For example, in preclinical studies, we observed that UBX1967 showed sustained exposure in ocular tissues of interest after intravitreal injection. After engaging the FDA regarding the design of IND-enabling studies for UBX1967, we determined that the duration of such preclinical studies would be longer than originally anticipated due to the extended exposure profile, which led us to decide to continue to preclinical studies of UBX1325 in parallel and delayed the commencement of our initial Phase 1 study for age-related eye diseases. In the second quarter of 2020, we decided to commence our initial Phase 1 clinical study in ophthalmology disease with UBX1325 in part because of its shorter exposure time.

The success of our business, including our ability to finance our company and generate any revenue in the future, will primarily depend on the successful development, regulatory approval and commercialization of drug candidates from our senolytic medicine pipeline. However, given our early stage of development, it may be many years, if we succeed at all, before we have demonstrated the safety and efficacy of a drug candidate sufficient to warrant approval for commercialization.

In the future, we may also become dependent on other drug candidates that we may develop or acquire. The clinical and commercial success of our drug candidates and future drug candidates will depend on a number of factors, including the following:

- our ability to raise any additional required capital on acceptable terms, or at all;
- our ability to complete IND-enabling studies and successfully submit an IND or comparable applications in foreign jurisdictions;
- timely completion of our preclinical studies and clinical studies, which may be significantly slower or cost more than we currently anticipate and will depend substantially upon the performance of third-party contractors, some of whom could be adversely impacted by unforeseen events such as pandemics and public health emergencies, such as the COVID-19 pandemic;
- whether we are required by the FDA or similar foreign regulatory agencies to conduct additional clinical studies or other studies beyond those planned to support the approval and commercialization of our drug candidates or any future drug candidates;
- acceptance of our proposed indications and primary endpoint assessments relating to the proposed indications of our drug candidates by the FDA and similar foreign regulatory authorities;
- our ability to demonstrate to the satisfaction of the FDA and similar foreign regulatory authorities the safety, efficacy and acceptable risk-to-benefit profile of our lead drug candidates or any future drug candidates;
- the prevalence, duration and severity of potential side effects or other safety issues experienced with our drug candidates or future approved products, if any;
- the timely receipt of necessary marketing approvals from the FDA and similar foreign regulatory authorities;
- achieving and maintaining, and, where applicable, ensuring that our third-party contractors achieve and maintain compliance with our contractual obligations and with all regulatory requirements applicable to our lead drug candidates or any future drug candidates or approved products, if any;
- the willingness of physicians, professional societies, operators of clinics, hospitals, and patients to recommend, utilize or adopt any of our future drug candidates to treat age-related diseases;
- the ability of third parties with whom we contract to manufacture adequate clinical study and commercial supplies of our lead drug candidates or any future drug candidates, to remain in good standing with regulatory agencies and develop, validate and maintain commercially viable manufacturing processes that are compliant with current good manufacturing practices, or cGMP;
- our ability to successfully develop a commercial strategy and thereafter commercialize our drug candidates or any future drug candidates in the U.S., and internationally, if approved for marketing, reimbursement, sale and distribution in such countries and territories, whether alone or in collaboration with others;
- the convenience of our treatment or dosing regimen;

- acceptance by physicians, payors and patients of the benefits, safety and efficacy of our drug candidates or any future drug candidates, if approved, including relative to alternative and competing treatments;

- patient demand for our drug candidates, if approved;

- our ability to establish and enforce intellectual property rights in and to our drug candidates or any future drug candidates; and

- our ability to avoid third-party patent interference, intellectual property challenges or intellectual property infringement claims.

These factors, many of which are beyond our control, could cause us to experience significant delays or be unable to obtain regulatory approvals or commercialize our drug candidates. In addition, disruptions caused by the COVID-19 pandemic may increase the likelihood that we encounter such difficulties or delays in developing, obtaining regulatory approvals for or commercializing our product candidates. Even if regulatory approvals are obtained, we may never achieve success in commercializing any of our drug candidates. Accordingly, we cannot provide assurances that we will be able to generate sufficient revenue through the sale of our drug candidates or any future drug candidates to continue our business or achieve profitability.

***The COVID-19 coronavirus could adversely impact our business, including our clinical trials, and financial condition.***

In December 2019, a novel strain of coronavirus, COVID-19, was reported to have surfaced in Wuhan, China. Since then, the COVID-19 coronavirus has spread to multiple countries, including the United States, in which we have planned or active clinical trial sites. The pandemic and government measures taken in response have also had a significant impact, both direct and indirect, on businesses and commerce, as worker shortages have occurred, supply chains have been disrupted, facilities and production have been suspended, and demand for certain goods and services, such as medical services and supplies, has spiked, while demand for other goods and services, such as travel, has fallen. In response to the spread of COVID-19, as of mid-March 2020, we transitioned to a reduced onsite staffing model and implemented a remote work plan for all of our employees other than those providing essential services, such as our laboratory staff. For those onsite employees, we have implemented heightened safety measures designed to comply with applicable federal, state and local guidelines. We may be required to take additional actions that could impact our operations if required by applicable laws or regulations or if we determine to be in the best interests of our employees.

In response to the COVID-19 pandemic, we amended the clinical study protocols for our ongoing Phase 2 and Phase 1b UBX0101 clinical studies to enable remote data collection for clinical sites that are limited in their ability to conduct study visits in person, for either site or patient safety reasons. While we are still able to collect data for the primary endpoint and most of the secondary endpoints for both studies, other assessments that require an on-site visit may be missed for some or all patients including laboratory evaluations, physical exams, and imaging.

Although one of the manufacturers in our supply chain for UBX0101 experienced a two-week shutdown in April 2020 due to a COVID-19 related incident and there have been some delays in shipments due to a reduction in overall flights, neither of these factors have impacted our supply of UBX0101. There have been no other disruptions in our supply chain of drug manufacturers necessary to conduct our clinical trials and given our drug inventories, we have sufficient drug supply for our ongoing Phase 2 and Phase 1b clinical studies as well as our planned Phase 1 study in ophthalmology disease.

Several of the contract research organizations, or CROs, that provide preclinical services to us are based in China and India and experienced temporary shutdowns in February and March due to government mandates. In each case we were able to reassign the balance of activities to other CROs and the shutdowns did not impact our preclinical timelines. CROs based in the U.S. that provide preclinical services are experiencing heavy demand, which may impact their ability to start new studies and could lead to delays in the commencement of our preclinical studies. Several of our U.S.-based academic research partners have also experienced shutdowns which has slowed progress on several early stage projects, none of which impacted our preclinical timelines.

As the COVID-19 coronavirus continues to spread around the globe, we will likely experience disruptions that could severely impact our business and clinical trials, including:

- delays or difficulties in enrolling patients in our clinical trials;
- delays or difficulties in clinical site initiation, including difficulties in recruiting clinical site investigators and clinical site staff;
- diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as our clinical trial sites and hospital staff supporting the conduct of our clinical trials;
- interruption of key clinical trial activities, such as clinical trial site monitoring, due to limitations on travel imposed or recommended by federal or state governments, employers and others or interruption of clinical trial subject visits and study procedures, the occurrence of which could affect the integrity of clinical trial data;
- risk that participants enrolled in our clinical trials will contract the COVID-19 coronavirus while the clinical trial is ongoing, which could impact the results of the clinical trial, including by increasing the number of observed adverse events;
- limitations in employee resources that would otherwise be focused on the conduct of our clinical trials, including because of sickness of employees or their families or the desire of employees to avoid contact with large groups of people;
- delays in receiving authorizations from local regulatory authorities to initiate our planned clinical trials;
- delays in clinical sites receiving the supplies and materials needed to conduct our clinical trials;
- interruption in global shipping that may affect the transport of clinical trial materials, such as investigational drug product used in our clinical trials;
- changes in local regulations as part of a response to the COVID-19 coronavirus pandemic which may require us to change the ways in which our clinical trials are conducted, which may result in unexpected costs, or to discontinue such clinical trials altogether;
- interruptions or delays in preclinical studies due to restricted or limited operations at our research and development laboratory facilities;
- delays in necessary interactions with local regulators, ethics committees and other important agencies and contractors due to limitations in employee resources or forced furlough of government employees; and
- refusal of the FDA to accept data from clinical trials in affected geographies outside the United States.

The global pandemic of the COVID-19 coronavirus continues to rapidly evolve. The extent to which the COVID-19 coronavirus may impact our business, including our clinical trials, and financial condition will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the ultimate geographic spread of the disease, the duration of the pandemic, travel restrictions and social distancing in the United States and other countries, business closures or business disruptions and the effectiveness of actions taken in the United States and other countries to contain and treat the disease.

***We may be unable to obtain regulatory approval for our drug candidates under applicable regulatory requirements. The denial or delay of any such approval would delay commercialization of our drug candidates and adversely impact our potential to generate revenue, our business and our results of operations.***

To gain approval to market our drug candidates, we must provide the FDA and foreign regulatory authorities with clinical data that adequately demonstrate the safety and efficacy of the drug candidate for the intended indication

applied for in the applicable regulatory filing. For our senolytic medicines, we must also demonstrate that eliminating or causing the elimination of senescent cells and modulating relevant associated SASP factors will lead to the improvement of well-defined and measurable endpoints.

We have not previously submitted a new drug application, or NDA, or biologics license application, or BLA, to the FDA, or similar approval filings to comparable foreign regulatory authorities. An NDA, BLA or other relevant regulatory filing must include extensive preclinical and clinical data and supporting information to establish that the drug candidate is safe and effective, or that a biological drug candidate is safe, pure and potent for each desired indication. The NDA, BLA or other relevant regulatory submission must also include significant information regarding the chemistry, manufacturing and controls for the product.

The research, testing, manufacturing, labeling, approval, sale, marketing and distribution of drug and biologic products are subject to extensive regulation by the FDA and other regulatory authorities in the U.S. and other countries, and such regulations differ from country to country. We are not permitted to market our drug candidates in the U.S. or in any foreign countries until they receive the requisite approval from the applicable regulatory authorities of such jurisdictions.

The FDA or any foreign regulatory bodies can delay, limit or deny approval of our drug candidates for many reasons, including:

- our inability to demonstrate to the satisfaction of the FDA or the applicable foreign regulatory body that any of our drug candidates is safe and effective for the requested indication;
- the FDA's or the applicable foreign regulatory agency's disagreement with our trial protocol or the interpretation of data from preclinical studies or clinical studies;
- our inability to demonstrate that the clinical and other benefits of any of our drug candidates outweigh any safety or other perceived risks;
- the FDA's or the applicable foreign regulatory agency's requirement for additional preclinical studies or clinical studies;
- the FDA's or the applicable foreign regulatory agency's failure to approve the formulation, labeling or specifications of UBX0101, UBX1325, UBX1967, or any of our future drug candidates;
- the FDA's or the applicable foreign regulatory agency's failure to approve the manufacturing processes or facilities of third-party manufacturers upon which we rely; or
- the potential for approval policies or regulations of the FDA or the applicable foreign regulatory agencies to significantly change in a manner that renders our clinical data insufficient for approval.

Of the large number of biopharmaceutical and pharmaceutical products in development, only a small percentage successfully complete the FDA or other regulatory approval processes and are commercialized.

Even if we eventually complete clinical testing and receive approval from the FDA or applicable foreign agencies for any of our drug candidates, the FDA or the applicable foreign regulatory agency may grant approval contingent on the performance of costly additional clinical studies which may be required after approval. The FDA or the applicable foreign regulatory agency also may approve our lead drug candidates for limited indications or narrower patient populations than we originally requested, and the FDA, or applicable foreign regulatory agency, may not approve our drug candidates with the labeling that we believe is necessary or desirable for the successful commercialization of such drug candidates.

Any delay in obtaining, or inability to obtain, applicable regulatory approval would delay or prevent commercialization of our drug candidates and would materially adversely impact our business and prospects.

***Disruptions at the FDA and other government agencies caused by funding shortages or global health concerns could hinder their ability to hire, retain or deploy key leadership and other personnel, or otherwise prevent new or modified products from being developed, approved or commercialized in a timely manner or at all, which could negatively impact our business.***

The ability of the FDA to review and or approve new products can be affected by a variety of factors, including government budget and funding levels, statutory, regulatory, and policy changes, the FDA's ability to hire and retain key personnel and accept the payment of user fees, and other events that may otherwise affect the FDA's ability to perform routine functions. Average review times at the FDA have fluctuated in recent years as a result. In addition, government funding of other government agencies that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable. Disruptions at the FDA and other agencies may also slow the time necessary for new drugs and biologics to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years, including for 35 days beginning on December 22, 2018, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA, have had to furlough critical FDA employees and stop critical activities.

Separately, in response to the COVID-19 pandemic, on March 10, 2020 the FDA announced its intention to postpone most foreign inspections of manufacturing facilities, and on March 18, 2020, the FDA temporarily postponed routine surveillance inspections of domestic manufacturing facilities. Subsequently, on July 10, 2020 the FDA announced its intention to resume certain on-site inspections of domestic manufacturing facilities subject to a risk-based prioritization system. The FDA intends to use this risk-based assessment system to identify the categories of regulatory activity that can occur within a given geographic area, ranging from mission critical inspections to resumption of all regulatory activities. Regulatory authorities outside the United States may adopt similar restrictions or other policy measures in response to the COVID-19 pandemic. If a prolonged government shutdown occurs, or if global health concerns continue to prevent the FDA or other regulatory authorities from conducting their regular inspections, reviews, or other regulatory activities, it could significantly impact the ability of the FDA or other regulatory authorities to timely review and process our regulatory submissions, which could have a material adverse effect on our business.

***Clinical development involves a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results.***

Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure or delay can occur at any time during the clinical study process. Success in preclinical studies and early clinical studies does not ensure that later clinical studies will be successful. A number of companies in the biotechnology, and pharmaceutical industries have suffered significant setbacks in clinical studies, even after positive results in earlier preclinical studies or clinical studies. These setbacks have been caused by, among other things, preclinical findings made while clinical studies were underway and safety or efficacy observations made in clinical studies, including previously unreported adverse events. The results of our preclinical animal studies or studies in *ex vivo* human tissues may not be predictive of the results of outcomes in human clinical studies. For example, our senolytic molecules may demonstrate different chemical and pharmacological properties in patients than they do in laboratory studies or may interact with human biological systems in unforeseen or harmful ways.

Additionally, with respect to our initial clinical trials for our senolytic drug candidates, we may be unable to accurately predict whether or in what manner we will be able to measure the impact of a drug candidate on relevant SASP factors and disease biomarkers. For example, in the initial single ascending dose, or SAD, portion of our Phase 1 OA study, we intended to collect synovial fluid from the knee joint; however, we were unable to obtain a sufficient amount of fluid for analysis of biomarkers from a number of patients. As a result, we expanded the study to include a second portion for biomarker assessment. This second portion involved an additional cohort of patients and use an alternative procedure, saline lavage, intended to provide a greater number of sufficient samples size for SASP and disease biomarkers assessment.

Drug candidates in later stages of clinical studies may fail to show the desired pharmacological properties or safety and efficacy traits despite having progressed through preclinical studies and initial clinical studies. Notwithstanding any promising results in earlier studies, we cannot be certain that we will not face similar setbacks. Even if we are

able to initiate and complete clinical studies, the results may not be sufficient to obtain regulatory approval for our drug candidates.

Although we completed our Phase 1 clinical study of UBX0101 in OA in the second quarter of 2019 and initiated a Phase 2 clinical study of UBX0101 in OA in the fourth quarter of 2019 and a Phase 1b clinical study of UBX0101 in OA in the first quarter of 2020, we may experience delays in obtaining the FDA's authorization to initiate further clinical studies of UBX0101, in completing ongoing studies of our other drug candidates or in initiating our planned studies and trials. Additionally, we cannot be certain that studies or trials for our drug candidates will begin on time, not require redesign, enroll an adequate number of subjects on time or be completed on schedule, if at all. The COVID-19 pandemic could cause or exacerbate these factors. For example while we continue to plan to initiate a Phase 1 clinical study for our ophthalmology program in the second half of 2020, if clinical sites are unable to recruit and retain investigators and study staff or screen and enroll patients, or the planned study start date could be delayed. Clinical studies can be prolonged, delayed or terminated for a variety of reasons, including:

- the FDA or comparable foreign regulatory authorities disagreeing with or requiring changes to the design or implementation of our clinical studies;
- delays in obtaining regulatory approval to commence or continue a trial;
- reaching agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical study sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- obtaining institutional review board, or IRB, approval at each trial site;
- recruiting an adequate number of suitable patients to participate in a trial;
- having subjects complete a trial or return for post-treatment follow-up;
- encountering difficulties in gathering the range of biological data from patients needed to fully assess the impact of our drug candidates, such as the challenges we encountered in collecting synovial fluid from OA patients in the single ascending dose portion of our Phase 1 clinical study;
- clinical sites deviating from trial protocol or dropping out of a trial;
- addressing subject safety concerns that arise during the course of a trial;
- adding a sufficient number of clinical study sites; or
- obtaining sufficient product supply of drug candidate for use in preclinical studies or clinical studies from third-party suppliers some of whom could be adversely impacted by unforeseen events such as pandemics and public health emergencies, such as the COVID-19 pandemic.

We may experience numerous adverse or unforeseen events during, or as a result of, preclinical studies and clinical studies that could delay or prevent our ability to receive marketing approval or commercialize our drug candidates, including:

- clinical studies of our drug candidates may produce negative or inconclusive results, and we may decide, or regulators may require us, to modify clinical study design, conduct additional clinical studies or abandon drug development programs, including all of our senolytic programs;
- the number of patients required for clinical studies of our drug candidates may be larger than we anticipate, enrollment in these clinical studies may be slower than we anticipate, or participants may drop out of these clinical studies at a higher rate than we anticipate;

- our third-party contractors may fail to comply with regulatory requirements, fail to maintain adequate quality controls, or be unable to provide us with sufficient product supply to conduct and complete preclinical studies or clinical studies of our drug candidates in a timely manner, or at all;

- we or our investigators might have to suspend or terminate clinical studies of our drug candidates for various reasons, including non-compliance with regulatory requirements, a finding that our drug candidates have undesirable side effects or other unexpected characteristics, a finding that the participants are being exposed to unacceptable health risks, or due to unforeseen events such as pandemics and public health emergencies, such as the COVID-19 pandemic;

- the cost of clinical studies of our drug candidates may be greater than we anticipate;

- the quality of our drug candidates or other materials necessary to conduct preclinical studies or clinical studies of our drug candidates may be inadequate;

- regulators may revise the requirements for approving our drug candidates, or such requirements may not be as we anticipate; and

- future collaborators may conduct clinical studies in ways they view as advantageous to them but that are suboptimal for us.

If we are required to conduct additional clinical studies or other testing of our drug candidates beyond those that we currently contemplate, if we are unable to successfully complete clinical studies of our drug candidates or other testing, if the results of these trials or tests are not positive or are only moderately positive, or if there are safety concerns, we may:

- incur unplanned costs;

- be delayed in obtaining marketing approval for our drug candidates or fail to obtain marketing approval at all;

- obtain marketing approval in some countries and not in others;

- obtain marketing approval for indications or patient populations that are not as broad as intended or desired;

- obtain marketing approval with labeling that includes significant use or distribution restrictions or safety warnings, including boxed warnings;

- be subject to additional post-marketing testing requirements; or

- have the treatment removed from the market after obtaining marketing approval.

We could also encounter delays if a clinical study is suspended or terminated by us, by the IRBs of the institutions in which such trials are being conducted, by the Data Safety Monitoring Board, or DSMB, for such trial or by the FDA or other regulatory authorities. Such authorities may suspend or terminate a clinical study due to a number of factors, including failure to conduct the clinical study in accordance with regulatory requirements or our clinical protocols, inspection of the clinical study 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 study.

Further, conducting clinical studies in foreign countries, as we may do for certain of our drug candidates, presents additional risks that may delay completion of our clinical studies. These risks include the failure of enrolled patients in foreign countries to adhere to clinical protocol as a result of differences in healthcare services or cultural customs, managing additional administrative burdens associated with foreign regulatory schemes, as well as political and

economic risks relevant to such foreign countries, including those caused by unforeseen events such as pandemics and public health emergencies similar to the COVID-19 pandemic.

Principal investigators for our clinical studies may serve as scientific advisors or consultants to us from time to time and may receive cash or equity compensation in connection with such services. If these relationships and any related compensation result in perceived or actual conflicts of interest, or a regulatory authority concludes that the financial relationship may have affected the interpretation of the trial, the integrity of the data generated at the applicable clinical study site may be questioned and the utility of the clinical study itself may be jeopardized, which could result in the delay or rejection of the marketing application we submit. Any such delay or rejection could prevent or delay us from commercializing our current or future drug candidates.

If we experience termination or delays in the completion of any preclinical study or clinical study of our drug candidates, the commercial prospects of our drug candidates may be harmed, and our ability to generate revenues from any of these drug candidates will be delayed or unrealized. In addition, any delays in completing our clinical studies may increase our costs, slow down our drug candidate development and approval process and jeopardize our ability to commence product sales and generate revenues. Any of these occurrences may significantly harm our business, financial condition and prospects. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical studies may also ultimately lead to the denial of regulatory approval of our drug candidates. If one or more of our drug candidates or our senescence technology generally prove to be ineffective, unsafe or commercially unviable, our platform and pipeline would have significantly diminished value, which would have a material and adverse effect on our business, financial condition, results of operations and prospects.

***We may not be successful in our efforts to continue to create a pipeline of drug candidates or to develop commercially successful products. If we fail to successfully identify and develop additional drug candidates, our commercial opportunity may be limited.***

We are committed to developing senolytic medicines that slow, halt or reverse age-related diseases and we are currently advancing multiple senolytic molecules to address a variety of age-related diseases, including musculoskeletal, ophthalmologic and pulmonary disorders. As senolytic medicines are not limited to intervention by a single mode of action or molecular target, we believe that we can modulate a number of biologic pathways in order to trigger the beneficial elimination of senescent cells. However, our core therapeutic approach is based on our belief that the elimination of the accumulation of senescent cells and modulation of their accompanying SASP can treat a root cause of many diseases of aging, which may never be successfully validated in a human. The indications we are currently pursuing, including OA of the knee and several age-related eye diseases, we believe to be heterogeneous and multifactorial diseases driven by multiple SASP factors. While evidence suggests that, in each case, individual SASP factors contribute to the disease, it is our belief that modulation of multiple factors is likely needed for a meaningful clinical benefit to be observed and we do not yet know which of the SASP factors will be most important or whether we can measure them.

In addition, identifying, developing, obtaining regulatory approval and commercializing drug candidates for the treatment of age-related diseases will require substantial additional funding and is prone to the risks of failure inherent in drug development. Research programs to identify drug candidates also require substantial technical, financial and human resources, regardless of whether or not any drug candidates are ultimately identified, and even if our preclinical research programs initially show promise in identifying potential drug candidates, they may fail to yield drug candidates for clinical development.

In addition, we believe that many age-related diseases will require the development of senolytic medicines that can be administered systemically and that our ability to realize the full potential of extending human healthspan will require additional non-senescence based therapeutic approaches. As a result, we intend to continue to dedicate resources and effort to better understand fundamental aging mechanisms, such as loss of circulating factors such as α-Klotho hormone, and translate these insights into human medicines. However, the scientific evidence to support the feasibility of developing systemic senolytic medicines is both preliminary and limited and our non-senolytic programs are based on emerging science. We therefore cannot provide any assurance that we will be able to successfully identify or acquire additional drug candidates, advance any of these additional drug candidates through the development process, successfully commercialize any such additional drug candidates, if approved, or assemble

sufficient resources to identify, acquire, develop or, if approved, commercialize additional drug candidates. If we are unable to successfully identify, acquire, develop and commercialize additional drug candidates, our commercial opportunities may be limited.

***It may be many years, if ever, before we develop senolytic medicines capable of systemic administration to treat systemic diseases of aging.***

We are focusing initially on the development of senolytic molecules for age-related diseases that can be treated by means of local treatment and intend to continue our research into the development of systemic senolytic medicines. However, we are still at a very early stage of developing locally administered senolytic medicines, and we must establish proof-of-concept in humans for local treatment before developing a systemically administered senolytic medicine. We still face significant risks in the development of localized treatments. As a result, it may be many years before we have sufficient human data and scientific understanding to effectively pursue a systemically administered senolytic medicine, if ever.

***If we encounter difficulties enrolling patients in our clinical studies, our clinical development activities could be delayed or otherwise adversely affected.***

The timely completion of clinical studies in accordance with their protocols depends, among other things, on our ability to enroll a sufficient number of patients who remain in the study until its conclusion. We may experience difficulties in patient enrollment in our clinical studies for a variety of reasons. The enrollment of patients depends on many factors, some of which could be exacerbated by the COVID-19 pandemic, including:

- the patient eligibility criteria defined in the protocol;
- the size of the patient population required for analysis of the trial's primary endpoints;
- the proximity of patients to trial sites;
- patients' fear of visiting or traveling to trial sites during the COVID-19 pandemic;
- the design of the trial;
- our ability to recruit clinical study investigators with the appropriate competencies and experience;
- clinicians' and patients' perceptions as to the potential advantages of the drug candidate being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating; and
- our ability to obtain and maintain patient consents.

In addition, our clinical studies may compete with other clinical studies for drug candidates that are in the same therapeutic areas as our drug candidates, and this competition will reduce the number and types of patients available to us, because some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Since the number of qualified clinical investigators is limited, we may conduct some of our clinical studies at the same clinical study sites that some of our competitors use, which will reduce the number of patients who are available for our clinical studies in such clinical study site.

Further, the administration of senolytic medicines designed to eliminate or cause the elimination of senescent cells and thereby modulate their associated SASP may result in unforeseen events, including by harming healthy tissues. As a result, it is possible that safety concerns could negatively affect patient enrollment among the patient populations that we intend to treat, including among those in indications with a low risk of mortality. Delays in patient enrollment may result in increased costs or may affect the timing or outcome of the planned clinical studies, which could prevent completion of these trials and adversely affect our ability to advance the development of our drug candidates.

***Our drug candidates may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any.***

Undesirable side effects caused by our drug candidates could cause us or regulatory authorities to interrupt, delay or halt clinical studies and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or comparable foreign regulatory authorities. Other than in our Phase 1 clinical study of UBX0101, which was completed in the second quarter of 2019, and our ongoing Phase 2 and Phase 1b clinical studies of UBX0101, which were initiated in the fourth quarter of 2019 and the first quarter of 2020, respectively, senolytic medicines designed to eliminate or cause the elimination of senescent cells and associated SASP have never been tested in humans. As a result, even though in our completed Phase 1 clinical study UBX0101 was generally well tolerated up to the maximum administered dose of 4.0 mg in Parts A and B of the study, any clinical studies we initiate could reveal a high and unacceptable severity and prevalence of side effects, and it is possible that patients enrolled in such clinical studies could respond in unexpected ways. For instance, in preclinical *in vivo* animal and *ex vivo* human tissue studies, our senolytic molecules have exhibited clearance of senescent cells, however the elimination of accumulated senescent cells may result in unforeseen events, including by harming healthy cells or tissues. In addition, the entry by cells into a senescent state is a natural biological process that we believe may have protective effects, such as halting the proliferation of damaged cells. The treatment of tissues with senolytic molecules could interfere with such protective processes.

If unacceptable side effects arise in the development of our drug candidates, we, the FDA, the IRBs at the institutions in which our studies are conducted, or the DSMB could suspend or terminate our clinical studies or the FDA or comparable foreign regulatory authorities could order us to cease clinical studies or deny approval of our drug candidates for any or all targeted indications. Treatment-related side effects could also affect patient recruitment or the ability of enrolled patients to complete any of our clinical studies or result in potential product liability claims. In addition, these side effects may not be appropriately recognized or managed by the treating medical staff. We expect to have to train medical personnel using our drug candidates to understand the side effect profiles for our clinical studies and upon any commercialization of any of our drug candidates. Inadequate training in recognizing or managing the potential side effects of our drug candidates could result in patient injury or death. Any of these occurrences may harm our business, financial condition and prospects significantly.

In addition, even if we successfully advance any of our drug candidates into and through clinical studies, such trials will likely only include a limited number of subjects and limited duration of exposure to our drug candidates. As a result, we cannot be assured that adverse effects of our drug candidates will not be uncovered when a significantly larger number of patients are exposed to the drug candidate. Further, clinical studies may not be sufficient to determine the effect and safety consequences of taking our drug candidates over a multi-year period. For example, even though in Parts A and B of our study of UBX0101 there were no serious adverse events and no patient discontinued because of an adverse event, there can be no assurance that it will demonstrate a similarly favorable safety profile in subsequent clinical trials.

If any of our drug candidates receives marketing approval, and we or others later identify undesirable side effects caused by such products, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw their approval of the product;
- we may be required to recall a product or change the way such product is administered to patients;
- additional restrictions may be imposed on the marketing of the particular product or the manufacturing processes for the product or any component thereof;
- regulatory authorities may require the addition of labeling statements, such as a “black box” warning or a contraindication;
- we may be required to implement a Risk Evaluation and Mitigation Strategy, or REMS, or create a Medication Guide outlining the risks of such side effects for distribution to patients;

- we could be sued and held liable for harm caused to patients;
- the product may become less competitive; and
- our reputation may suffer.

Any of the foregoing events could prevent us from achieving or maintaining market acceptance of the particular drug candidate, if approved, and result in the loss of significant revenues to us, which would materially and adversely affect our results of operations and business. In addition, if one or more of our drug candidates or our senescence approach generally prove to be unsafe, our entire platform and pipeline could be affected, which would have a material and adverse effect on our business, financial condition, results of operations and prospects.

***Even if our lead drug candidates or any future drug candidates obtain regulatory approval, they may fail to achieve the broad degree of physician and patient adoption and use necessary for commercial success.***

Even if one or more of our drug candidates receive FDA or other regulatory approvals, the commercial success of any of our current or future drug candidates will depend significantly on the broad adoption and use of the resulting product by physicians and patients for approved indications. Our drug candidates may not be commercially successful for a variety of reasons, including: competitive factors, pricing or physician preference, reimbursement by insurers, the degree and rate of physician and patient adoption of our current or future drug candidates. If approved, the commercial success of our drug candidates will depend on a number of factors, including:

- the clinical indications for which the product is approved and patient demand for approved products that treat those indications;
- the safety and efficacy of our product as compared to other available therapies;
- the availability of coverage and adequate reimbursement from managed care plans, insurers and other healthcare payors for any of our drug candidates that may be approved;
- acceptance by physicians, operators of clinics and patients of the product as a safe and effective treatment;
- physician and patient willingness to adopt a new therapy over other available therapies to treat approved indications;
- overcoming any biases physicians or patients may have toward particular therapies for the treatment of approved indications;
- proper training and administration of our drug candidates by physicians and medical staff;
- public misperception regarding the use of our therapies, or public bias against “anti-aging” companies;
- patient satisfaction with the results and administration of our drug candidates and overall treatment experience, including, for example, the convenience of any dosing regimen;
- the cost of treatment with our drug candidates in relation to alternative treatments and reimbursement levels, if any, and willingness to pay for the product, if approved, on the part of insurance companies and other third-party payers, physicians and patients;
- the willingness of patients to pay for certain of our products, if approved;
- the revenue and profitability that our products may offer a physician as compared to alternative therapies;
- the prevalence and severity of side effects;

- limitations or warnings contained in the FDA-approved labeling for our products;
- the willingness of physicians, operators of clinics and patients to utilize or adopt our products as a solution;
- any FDA requirement to undertake a REMS;
- the effectiveness of our sales, marketing and distribution efforts;
- adverse publicity about our products or favorable publicity about competitive products; and
- potential product liability claims.

We cannot assure you that our current or future drug candidates, if approved, will achieve broad market acceptance among physicians and patients. Any failure by our drug candidates that obtain regulatory approval to achieve market acceptance or commercial success would adversely affect our results of operations.

***We rely on third-party suppliers to manufacture preclinical and clinical supplies of our drug candidates and we intend to continue to rely on third parties to produce such preclinical and clinical supplies as well as commercial supplies of any approved product. The loss of these suppliers, or their failure to comply with applicable regulatory requirements or to provide us with sufficient quantities at acceptable quality levels or prices, or at all, would materially and adversely affect our business.***

We do not have the infrastructure or capability internally to manufacture supplies of our drug candidates or the materials necessary to produce our drug candidates for use in the conduct of our clinical studies, and we lack the internal resources and the capability to manufacture any of our drug candidates on a clinical or commercial scale. The facilities used by our contract manufacturers to manufacture our drug candidates are subject to various regulatory requirements and may be subject to the inspection of the FDA or other regulatory authorities. We do not control the manufacturing process of, and are completely dependent on, our contract manufacturing partners for compliance with the regulatory requirements, known as cGMPs. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or comparable regulatory authorities in foreign jurisdictions, we may not be able to rely on their manufacturing facilities for the manufacture or our drug candidates. In addition, we have limited control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority finds these facilities inadequate for the manufacture of our drug candidates or if such facilities are subject to enforcement action in the future or are otherwise inadequate, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our drug candidates.

We currently intend to supply all of our drug candidates in all territories for our planned clinical development programs. We currently rely on third parties at key stages in our supply chain. For instance, the supply chains for our lead drug candidates involve several manufacturers that specialize in specific operations of the manufacturing process, specifically, raw materials manufacturing, drug substance manufacturing and drug product manufacturing. As a result, the supply chain for the manufacturing of our drug candidates is complicated and we expect the logistical challenges associated with our supply chain to grow more complex as our drug candidates progress through the clinical trial process. Some of these third parties may also be adversely impacted by COVID-19 or other unforeseen events and public health emergencies. For example, one of the manufacturers in our supply chain for UBX0101 experienced a two-week shutdown in April 2020 due to a COVID-19 related incident. While such incident did not impact our supply of UBX0101 for our ongoing clinical studies, there can be no assurance that our supply chain and clinical trials will not be disrupted in the future due to the COVID-19 pandemic.

We do not have any control over the process or timing of the acquisition or manufacture of materials by our manufacturers. Further, we have not yet engaged any manufacturers for the commercial supply of our drug candidates. Although we intend to enter into such agreements prior to commercial launch of any of our drug candidates, we may be unable to enter into any such agreement or do so on commercially reasonable terms, which could have a material adverse impact upon our business. We generally do not begin a preclinical study and we do not intend to initiate any clinical studies unless we believe we have access to a sufficient supply of a drug candidate

to complete such study or trial. In addition, any significant delay in, or quality control problems with respect to, the supply of a drug candidate, or the raw material components thereof, for an ongoing study or trial could considerably delay completion of our preclinical studies or future clinical studies, product testing and potential regulatory approval of our drug candidates.

Moreover, if there is a disruption to one or more of our third-party manufacturers' or suppliers' relevant operations, or if we are unable to enter into arrangements for the commercial supply of our drug candidates, we will have no other means of producing our lead drug candidates until they restore the affected facilities or we or they procure alternative manufacturing facilities or sources of supply. Our ability to progress our preclinical and clinical programs could be materially and adversely impacted if any of the third-party suppliers upon which we rely were to experience a significant business challenge, disruption or failure due to issues such as financial difficulties or bankruptcy, issues relating to other customers such as regulatory or quality compliance issues, or other financial, legal, regulatory or reputational issues.

Additionally, any damage to or destruction of our third-party manufacturers' or suppliers' facilities or equipment may significantly impair our ability to manufacture our drug candidates on a timely basis.

In addition, to manufacture our lead drug candidates in the quantities that we believe would be required to meet anticipated market demand, our third-party manufacturers would likely need to increase manufacturing capacity and, in some cases, we would need to secure alternative sources of commercial supply, which could involve significant challenges and may require additional regulatory approvals. In addition, the development of commercial-scale manufacturing capabilities may require us and our third-party manufacturers to invest substantial additional funds and hire and retain the technical personnel who have the necessary manufacturing experience. Neither we nor our third-party manufacturers may successfully complete any required increase to existing manufacturing capacity in a timely manner, or at all. If our manufacturers or we are unable to purchase the raw materials necessary for the manufacture of our drug candidates on acceptable terms, at sufficient quality levels, or in adequate quantities, if at all, the commercial launch of our lead drug candidates or any future drug candidates would be delayed or there would be a shortage in supply, which would impair our ability to generate revenues from the sale of such drug candidates, if approved.

***We depend on third-party suppliers for key raw materials used in our manufacturing processes, and the loss of these third-party suppliers or their inability to supply us with adequate raw materials could harm our business.***

We rely on third-party suppliers for the raw materials required for the production of our drug candidates. Our dependence on these third-party suppliers and the challenges we may face in obtaining adequate supplies of raw materials involve several risks, including limited control over pricing, availability, and quality and delivery schedules. As a small company, our negotiation leverage is limited, and we are likely to get lower priority than our competitors who are larger than we are. We cannot be certain that our suppliers will continue to provide us with the quantities of these raw materials that we require or satisfy our anticipated specifications and quality requirements. Any supply interruption in limited or sole sourced raw materials could materially harm our ability to manufacture our drug candidates until a new source of supply, if any, could be identified and qualified. We may be unable to find a sufficient alternative supply channel in a reasonable time or on commercially reasonable terms. Any performance failure on the part of our suppliers could delay the development and potential commercialization of our drug candidates, including limiting supplies necessary for clinical studies and regulatory approvals, which would have a material adverse effect on our business.

We rely on third parties in the conduct of critical portions of our preclinical studies and intend to rely on third parties in the conduct of critical portions of our future clinical studies. If these third parties do not successfully carry out their contractual duties, fail to comply with applicable regulatory requirements or meet expected deadlines, we may be unable to obtain regulatory approval for our drug candidates. Some of these third parties may also be adversely impacted by COVID-19 or other unforeseen events and public health emergencies. For example, one of the manufacturers in our supply chain for UBX0101 experienced a two-week shutdown in April 2020 due to a COVID-19 related incident. While such incident did not impact our supply of UBX0101 for our ongoing clinical trials, there can be no assurance that our supply chain and clinical trials will not be disrupted in the future due to the COVID-19 pandemic.

We currently do not have the ability to independently conduct preclinical studies that comply with the regulatory requirements known as good laboratory practice, or GLP, requirements. We also do not currently have the ability to independently conduct any clinical studies. The FDA and regulatory authorities in other jurisdictions require us to comply with regulations and standards, commonly referred to as good clinical practice, or GCP, requirements for conducting, monitoring, recording and reporting the results of clinical studies, in order to ensure that the data and results are scientifically credible and accurate and that the trial subjects are adequately informed of the potential risks of participating in clinical studies. We rely on medical institutions, clinical investigators, contract laboratories and other third parties, such as CROs, to conduct GLP-compliant preclinical studies and GCP-compliant clinical studies on our drug candidates properly and on time. While we have agreements governing their activities, we control only certain aspects of their activities and have limited influence over their actual performance. The third parties with whom we contract for execution of our GLP-compliant preclinical studies and our GCP-compliant clinical studies play a significant role in the conduct of these studies and trials and the subsequent collection and analysis of data. These third parties are not our employees and, except for restrictions imposed by our contracts with such third parties, we have limited ability to control the amount or timing of resources that they devote to our programs. Although we rely on these third parties to conduct our GLP-compliant preclinical studies and GCP-compliant clinical studies, we remain responsible for ensuring that each of our GLP preclinical studies and clinical studies is conducted in accordance with its investigational plan and protocol and applicable laws and regulations, and our reliance on the CROs does not relieve us of our regulatory responsibilities.

Many of the third parties with whom we contract may also have relationships with other commercial entities, potentially including our competitors, for whom they may also be conducting clinical studies or other drug development activities that could harm our competitive position. If the third parties conducting our preclinical studies or our clinical studies do not adequately perform their contractual duties or obligations, experience significant business challenges, disruptions or failures, do not meet expected deadlines, terminate their agreements with us or need to be replaced, or if the quality or accuracy of the data they obtain is compromised due to their failure to adhere to our protocols or to GCPs, or for any other reason, we may need to enter into new arrangements with alternative third parties. This could be difficult, costly or impossible, and our preclinical studies or clinical studies may need to be extended, delayed, terminated or repeated. As a result, we may not be able to obtain regulatory approval in a timely fashion, or at all, for the applicable drug candidate, our financial results and the commercial prospects for our drug candidates would be harmed, our costs could increase, and our ability to generate revenues could be delayed.

***We are currently conducting and will continue to conduct preclinical trials and contract with third-party manufacturers in foreign countries, which could expose us to risks that could have a material adverse effect on the success of our business.***

We have conducted in the past and are currently conducting preclinical trials in the United States, Canada and China and contract with third-party suppliers in the United States, China and Denmark. Accordingly, we are subject to risks associated with doing business globally, including commercial, political, and financial risks. In addition, we are subject to potential disruption caused by military conflicts; potentially unstable governments or legal systems; civil or political upheaval or unrest; local labor policies and conditions; possible expropriation, nationalization, or confiscation of assets; problems with repatriation of foreign earnings; economic or trade sanctions; closure of markets to imports; anti-American sentiment; terrorism or other types of violence in or outside the United States; health pandemics; and a significant reduction in global travel. The COVID-19 pandemic could disrupt the ability of our third-party service providers, including WuXi AppTec (Hong Kong) Limited, or WuXi AppTec, which conducts certain preclinical studies of our drug candidates in China pursuant to a services agreement we entered into in 2016, to provide us with services that are critical to the development of our drug candidates. For example, in February 2020, WuXi AppTec was required to shut down its facilities located in Wuhan, China, where WuXi AppTec conducts medicinal chemistry research services for us in response to governmental orders. Our success will depend, in part, on our ability to overcome the challenges we encounter with respect to these risks and other factors affecting U.S. companies with global operations. If our global clinical trials or foreign third-party suppliers were to experience significant disruption due to these risks or for other reasons, it could have a material adverse effect on our business, financial condition, results of operations and prospects.

***We face significant competition in an environment of rapid technological and scientific change, and our drug candidates, if approved, will face significant competition and our failure to effectively compete may prevent us***

***from achieving significant market penetration. Most of our competitors have significantly greater resources than we do, and we may not be able to successfully compete.***

The biotechnology and pharmaceutical industries in particular are characterized by rapidly advancing technologies, intense competition and a strong emphasis on developing proprietary therapeutics. Numerous companies are engaged in the development, patenting, manufacturing and marketing of healthcare products competitive with those that we are developing. We face competition from a number of sources, such as pharmaceutical companies, generic drug companies, biotechnology companies and academic and research institutions, many of which have greater financial resources, marketing capabilities, sales forces, manufacturing capabilities, research and development capabilities, clinical study expertise, intellectual property portfolios, experience in obtaining patents and regulatory approvals for drug candidates and other resources than we do. Some of the companies that offer competing products also have a broad range of other product offerings, large direct sales forces and long-term customer relationships with our target physicians, which could inhibit our market penetration efforts. Mergers and acquisitions in the pharmaceutical industry may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical study sites and patient registration for clinical studies, as well as in acquiring technologies complementary to, or necessary for, our programs. In addition, certain of our drug candidates, if approved, may compete with other products that treat age-related diseases, including over the counter, or OTC, treatments, for a share of some patients' discretionary budgets and for physicians' attention within their clinical practices.

We are aware of other companies seeking to develop treatments to prevent or treat aging-related diseases through various biological pathways, including Calico and resTORbio. Within our three leading senolytic programs, our drug candidates would compete against current therapies from a wide range of companies and technologies, including:

- Musculoskeletal diseases, including osteoarthritis: current standard of care treatments (though not disease-modifying and focused on symptom management) include non-steroidal anti-inflammatory drugs (ibuprofen, diclofenac, celecoxib), intra-articular steroids (triamcinolone), analgesic pain relief (Acetaminophen), or narcotic pain relief (tramadol).

- Ophthalmology diseases, including diabetic retinopathy: current standard of care treatments include anti-VEGF antibodies (bevacizumab, ranibizumab, aflibercept, brolucizumab); intravitreal steroid (dexamethasone); and pan-retinal photocoagulation by laser for both neovascular AMD, DR, and DME. There is no currently available treatment for geographic atrophy form of AMD. There are potentially disease-modifying therapeutics are being developed by several pharmaceutical and biotechnology companies, including Roche/Genentech and Regeneron.

- Pulmonary disease, including idiopathic pulmonary fibrosis: therapeutics are being sold and developed by several pharmaceutical and biotechnology companies and academic institutions, including Genentech, Boehringer-Ingelheim, Cytokinetics and Mallinckrodt, and are in various stages of clinical studies.

Further, we believe that potential competitors may be able to develop senolytic medicines utilizing well-established molecules and pathways, which could enable the development of competitive drug candidates utilizing the same cellular senescence biological theories.

Certain alternative treatments offered by competitors may be available at lower prices and may offer greater efficacy or better safety profiles. Furthermore, currently approved products could be discovered to have application for treatment of age-related diseases generally, which could give such products significant regulatory and market timing advantages over any of our drug candidates. Our competitors also may obtain FDA, EMA or other regulatory approval for their products more rapidly than we may obtain approval for ours and may obtain orphan product exclusivity from the FDA for indications our drug candidates are targeting, which could result in our competitors establishing a strong market position before we are able to enter the market. Newly developed systemic or non-systemic treatments that replace existing therapies that currently are only utilized in patients suffering from severe disease may also have lessened side effects or reduced prices compared to current therapies, which make them more

attractive for patients suffering from mild to moderate disease. Even if a generic or OTC product is less effective than our drug candidates, it may be more quickly adopted by physicians and patients than our competing drug candidates based upon cost or convenience.

***The successful commercialization of our drug candidates will depend in part on the extent to which governmental authorities and health insurers establish adequate coverage, reimbursement levels and pricing policies. Failure to obtain or maintain coverage and adequate reimbursement for our drug candidates, if approved, could limit our ability to market those products and decrease our ability to generate revenue.***

The availability and adequacy of coverage and reimbursement by governmental healthcare programs such as Medicare and Medicaid, private health insurers and other third-party payors are essential for most patients to be able to afford prescription medications such as our drug candidates, assuming FDA approval. Our ability to achieve acceptable levels of coverage and reimbursement for products by governmental authorities, private health insurers and other organizations will have an effect on our ability to successfully commercialize our drug candidates. Assuming we obtain coverage for our drug candidates by a third-party payor, the resulting reimbursement payment rates may not be adequate or may require co-payments that patients find unacceptably high. We cannot be sure that coverage and reimbursement in the U.S., the EU or elsewhere will be available for our drug candidates or any product that we may develop, and any reimbursement that may become available may be decreased or eliminated in the future.

Third-party payors increasingly are challenging prices charged for pharmaceutical products and services, and many third-party payors may refuse to provide coverage and reimbursement for particular drugs or biologics when an equivalent generic drug, biosimilar or a less expensive therapy is available. It is possible that a third-party payor may consider our drug candidates as substitutable and only offer to reimburse patients for the cost of the less expensive product. Even if we show improved efficacy or improved convenience of administration with our drug candidates, pricing of existing third-party therapeutics may limit the amount we will be able to charge for our drug candidates. These payors may deny or revoke the reimbursement status of a given product or establish prices for new or existing marketed products at levels that are too low to enable us to realize an appropriate return on our investment in our drug candidates. If reimbursement is not available or is available only at limited levels, we may not be able to successfully commercialize our drug candidates and may not be able to obtain a satisfactory financial return on our investment in the development of drug candidates.

There is significant uncertainty related to the insurance coverage and reimbursement of newly-approved products. In the U.S., third-party payors, including private and governmental payors, such as the Medicare and Medicaid programs, play an important role in determining the extent to which new drugs and biologics will be covered. The Medicare and Medicaid programs increasingly are used as models in the U.S. for how private payors and other governmental payors develop their coverage and reimbursement policies for drugs and biologics. Some third-party payors may require pre-approval of coverage for new or innovative devices or drug therapies before they will reimburse healthcare providers who use such therapies. We cannot predict at this time what third-party payors will decide with respect to the coverage and reimbursement for our drug candidates.

No uniform policy for coverage and reimbursement for products exists among third-party payors in the U.S. Therefore, coverage and reimbursement for products can differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that will require us to provide scientific and clinical support for the use of our drug candidates to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance. Furthermore, rules and regulations regarding reimbursement change frequently, in some cases on short notice, and we believe that changes in these rules and regulations are likely.

Outside the U.S., international operations are generally subject to extensive governmental price controls and other market regulations, and we believe the increasing emphasis on cost-containment initiatives in Europe and other countries have and will continue to put pressure on the pricing and usage of our drug candidates. In many countries, the prices of medical products are subject to varying price control mechanisms as part of national health systems. Other countries allow companies to fix their own prices for medical products but monitor and control company profits.

Additional foreign price controls or other changes in pricing regulation could restrict the amount that we are able to charge for our drug candidates. Accordingly, in markets outside the U.S., the reimbursement for our drug candidates may be reduced compared with the U.S. and may be insufficient to generate commercially reasonable revenue and profits.

Moreover, increasing efforts by governmental and third-party payors in the U.S. and abroad to cap or reduce healthcare costs may cause such organizations to limit both coverage and the level of reimbursement for newly approved products and, as a result, they may not cover or provide adequate payment for our drug candidates. We expect to experience pricing pressures in connection with the sale of our drug candidates due to the trend toward managed health care, the increasing influence of health maintenance organizations and additional legislative changes. The downward pressure on healthcare costs in general, particularly prescription drugs and biologics and surgical procedures and other treatments, has become intense. As a result, increasingly high barriers are being erected to the entry of new products.

***We currently have no sales organization. If we are unable to establish sales capabilities on our own or through third parties, we may not be able to market and sell our drug candidates effectively in the U.S. and foreign jurisdictions, if approved, or generate product revenue.***

We currently do not have a marketing or sales organization. In order to commercialize our drug candidates in the U.S. and foreign jurisdictions, we must build our marketing, sales, distribution, managerial and other non-technical capabilities or make arrangements with third parties to perform these services, and we may not be successful in doing so. If any of our drug candidates receive regulatory approval, we expect to establish a sales organization with technical expertise and supporting distribution capabilities to commercialize each such drug candidate, which will be expensive and time consuming. We have no prior experience in the marketing, sale and distribution of pharmaceutical products and there are significant risks involved in building and managing a sales organization, including our ability to hire, retain, and incentivize qualified individuals, generate sufficient sales leads, provide adequate training to sales and marketing personnel, and effectively manage a geographically dispersed sales and marketing team. Any failure or delay in the development of our internal sales, marketing and distribution capabilities would adversely impact the commercialization of these products. We may choose to collaborate with third parties that have direct sales forces and established distribution systems, either to augment our own sales force and distribution systems or in lieu of our own sales force and distribution systems. If we are unable to enter into such arrangements on acceptable terms or at all, we may not be able to successfully commercialize our drug candidates. If we are not successful in commercializing our drug candidates or any future drug candidates, either on our own or through arrangements with one or more third parties, we may not be able to generate any future product revenue and we would incur significant additional losses.

***We will need to increase the size of our organization, and we may experience difficulties in managing growth.***

As of June 30, 2020, we had 100 full-time employees. We will need to continue to expand our managerial, operational, finance and other resources in order to manage our operations and clinical studies, continue our development activities and commercialize our lead drug candidates or any future drug candidates. Our management and personnel, systems and facilities currently in place may not be adequate to support this future growth. Our need to effectively execute our growth strategy requires that we:

- manage our clinical studies effectively;
- identify, recruit, retain, incentivize and integrate additional employees, including sales personnel;
- manage our internal research, development and operational efforts effectively while carrying out our contractual obligations to third parties; and
- continue to improve our operational, financial and management controls, reports systems and procedures.

***If we fail to attract and retain senior management and key scientific personnel, we may be unable to successfully develop our lead drug candidates or any future drug candidates, conduct our clinical studies and commercialize our current or any future drug 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 as well as our senior scientists. In March 2020, our prior Chairman and Chief Executive Officer, Keith R. Leonard, resigned from his position as Chief Executive Officer and was replaced by Anirvan Ghosh, Ph.D. In addition, in July 2020, our Chief Financial Officer, Robert C. Goeltz II, announced his intention to resign from his position as Chief Financial Officer, and he will be replaced by Lynne Sullivan who will serve as interim Chief Financial Officer effective August 1, 2020. Although Mr. Leonard continues to serve as Chairman of our Board of Directors, disruption caused by the transition or by the loss of ongoing services of any other members of our senior management team or our senior scientists could delay or prevent the successful development of our product pipeline, initiation or completion of our planned clinical studies or the commercialization of our lead drug candidates or any future drug candidates.

Competition for qualified personnel in the biotechnology and pharmaceuticals field is intense due to the limited number of individuals who possess the skills and experience required by our industry. We will need to hire additional personnel as we expand our clinical development and if we initiate commercial activities. We may not be able to attract and retain quality personnel on acceptable terms, or at all. In addition, to the extent we hire personnel from competitors, we may be subject to allegations that they have been improperly solicited or that they have divulged proprietary or other confidential information, or that their former employers own their research output.

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

We face an inherent risk of product liability as a result of the clinical testing of our drug candidates and will face an even greater risk if we commercialize any products. For example, we may be sued if any product we develop allegedly causes injury or is found to be otherwise unsuitable during product testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, and a failure to warn of dangers inherent in the product, negligence, strict liability, and a breach of warranty. 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 drug candidates.

Even a successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for our current or future drug candidates;
- injury to our reputation;
- withdrawal of clinical study participants;
- costs to defend the related litigation;
- a diversion of management’s time and our resources;
- substantial monetary awards to trial participants or patients;
- regulatory investigations, product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue; and
- the inability to commercialize our current or any future drug candidates.

Our inability to obtain and maintain sufficient product liability insurance at an acceptable cost and scope of coverage to protect against potential product liability claims could prevent or inhibit the commercialization of our current or any future drug candidates we develop. We currently carry product liability insurance covering our clinical studies. Although we maintain such insurance, any claim that may be brought against us could result in a court judgment or settlement in an amount that is not covered, in whole or in part, by our insurance or that is in excess of the limits of our insurance coverage. Our insurance policies also have various exclusions and deductibles, and we may be subject

to a product liability claim for which we have no coverage. We will have to pay any amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, and we may not have, or be able to obtain, sufficient funds to pay such amounts. Moreover, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses. If and when we obtain approval for marketing any of our drug candidates, we intend to expand our insurance coverage to include the sale of such drug candidate; however, we may be unable to obtain this liability insurance on commercially reasonable terms or at all.

***Our existing collaborations as well as additional collaboration arrangements that we may enter into in the future may not be successful, which could adversely affect our ability to develop and commercialize our drug candidates.***

We utilize external collaborations and currently maintain approximately five active early-stage research and discovery focused collaborations. In the future, we may seek additional collaboration arrangements for the commercialization, or potentially for the development, of certain of our drug candidates depending on the merits of retaining commercialization rights for ourselves as compared to entering into collaboration arrangements. To the extent that we decide to enter into additional collaboration agreements in the future, we may face significant competition in seeking appropriate collaborators. Moreover, collaboration arrangements are complex and time-consuming to negotiate, document, implement and maintain and challenging to manage. We may not be successful in our efforts to prudently manage our existing collaborations or to enter new ones should we chose to do so. The terms of new collaborations, or other arrangements that we may establish may not be favorable to us.

The success of our collaboration arrangements will depend heavily on the efforts and activities of our collaborators and partners. Collaborations are subject to numerous risks, which may include risks that:

- collaborators and partners have significant discretion in determining the efforts and resources that they will apply to collaborations and they may not devote the level of effort or resources we expect;
- collaborators may not pursue development and commercialization of our drug candidates or may elect not to continue or renew development or commercialization programs based on clinical study results, changes in their strategic focus due to their acquisition of competitive products or their internal development of competitive products, availability of funding or other external factors, such as a business combination that diverts resources or creates competing priorities;
- collaborators may delay clinical studies, provide insufficient funding for a clinical study program, stop a clinical study, abandon a drug candidate, repeat or conduct new clinical studies or require a new formulation of a drug candidate for clinical testing;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our products or drug candidates;
- a collaborator with marketing, manufacturing and distribution rights to one or more products may not commit sufficient resources to or otherwise not perform satisfactorily in carrying out these activities;
- we could grant exclusive rights to our collaborators that would prevent us from collaborating with others;
- collaborators may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability;
- disputes may arise between us and a collaborator that cause the delay or termination of the research, development or commercialization of our current or future drug candidates or that result in costly litigation or arbitration that diverts management attention and resources;

- collaborations may be terminated, resulting in a need for additional capital to pursue further development or commercialization of the applicable current or future drug candidates;

- collaborators may own or co-own intellectual property covering products that results from our collaborating with them, and in such cases, we would not have the exclusive right to develop or commercialize such intellectual property;

- disputes may arise with respect to the ownership of any intellectual property developed pursuant to our collaborations;

- a collaborator's sales and marketing activities or other operations may not be in compliance with applicable laws resulting in civil or criminal proceedings; and

- collaborators may be adversely impacted by COVID-19 or other unforeseen events and public health emergencies.

***Unfavorable global economic or political conditions could adversely affect our business, financial condition or results of operations.***

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets. Furthermore, the market for products with the potential to treat age-related diseases, particularly those affecting large populations in a wide range of geographic locations, may be particularly vulnerable to unfavorable economic conditions. A global financial crisis or a global or regional political disruption, including most recently as a result of the COVID-19 pandemic, have caused and could continue to cause extreme volatility in the capital and credit markets. A severe or prolonged economic downturn or political disruption could result in a variety of risks to our business, including weakened demand for our lead drug candidates or any future drug candidates, if approved, and our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy or political disruption could also strain our manufacturers or suppliers, possibly resulting in supply disruption, or cause our customers to delay making payments for our services. Weakened or declining economic conditions could be caused by a number of factors. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the political or economic climate and financial market conditions could adversely impact our business.

***We or the third parties upon whom we depend may be adversely affected by earthquakes, other natural disasters or unforeseen pandemics and public health emergencies, such as the COVID-19 pandemic, and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.***

Our corporate headquarters and other facilities are located in the San Francisco Bay Area, which in the past has experienced both severe earthquakes and wildfires. Although we carry earthquake insurance, it is limited in scope. Earthquakes, wildfires or other natural disasters could severely disrupt our operations, and have a material adverse effect on our business, results of operations, financial condition and prospects.

If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as our enterprise financial systems or manufacturing resource planning and enterprise quality systems, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible, for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place currently are limited and are unlikely to prove adequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which, particularly when taken together with our lack of earthquake insurance, could have a material adverse effect on our business. Measures taken in response to a pandemic, such as the COVID-19 pandemic, which causes a public health emergency, could also disrupt our operations, and have a material adverse effect on our business, results of operations, financial condition and prospects. For example, in mid-March 2020, in alignment with federal, state and local guidance designed to slow the spread of COVID-19, we transitioned to a reduced onsite staffing model and remote work plan for all employees other than those providing essential services, such as our laboratory staff. As the COVID-19 pandemic evolves, we may be required to take

additional actions that could impact our operations if required by applicable laws or regulations or if we determine to be in the best interests of our employees.

Furthermore, integral parties in our supply chain are similarly vulnerable to natural disasters or other sudden, unforeseen and severe adverse events. If such an event were to affect our supply chain, it could have a material adverse effect on our business.

***Significant disruptions of information technology systems or breaches of data security could materially adversely affect our business, results of operations and financial condition.***

We collect and maintain information in digital form that is necessary to conduct our business, and we are increasingly dependent on information technology systems and infrastructure to operate our business. In the ordinary course of our business, we collect, store and transmit large amounts of confidential information, including intellectual property, proprietary business information and personal information. It is critical that we do so in a secure manner to maintain the confidentiality and integrity of such confidential information. We have established physical, electronic and organizational measures to safeguard and secure our systems to prevent a data compromise, and rely on commercially available systems, software, tools, and monitoring to provide security for our information technology systems and the processing, transmission and storage of digital information. We have also outsourced elements of our information technology infrastructure, and as a result a number of third-party vendors may or could have access to our confidential information. Our internal information technology systems and infrastructure, and those of our current and any future collaborators, contractors and consultants and other third parties on which we rely, are vulnerable to damage from computer viruses, malware, natural disasters, terrorism, war, telecommunication and electrical failures, cyberattacks or cyber-intrusions over the Internet, attachments to emails, persons inside our organization, or persons with access to systems inside our organization.

The risk of a security breach or disruption, particularly through cyberattacks or cyber-intrusion, including by computer hackers, “phishing” attacks, foreign governments and cyber terrorists, has generally increased as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased. In addition, the prevalent use of mobile devices that access confidential information increases the risk of data security breaches, which could lead to the loss of confidential information or other intellectual property. As a result of COVID-19, we may face increased cybersecurity risks due to our reliance on internet technology and the number of our employees that are working remotely, which may create additional opportunities for cybercriminals to exploit vulnerabilities. The costs to us to mitigate network security problems, bugs, viruses, worms, malicious software programs and security vulnerabilities could be significant, and while we have implemented security measures to protect our data security and information technology systems, our efforts to address these problems may not be successful, and these problems could result in unexpected interruptions, delays, cessation of service and other harm to our business and our competitive position. If such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our product development programs. For example, the loss of clinical study data from completed or ongoing or planned clinical studies could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data.

Moreover, if a computer security breach affects our systems, or those of our current and any future collaborators, contractors and consultants and other third parties on which we rely, or results in the unauthorized release of personally identifiable information, our reputation could be materially damaged. In addition, such a breach may require notification to governmental agencies, the media or individuals pursuant to various federal and state privacy and security laws, if applicable, including the Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Clinical Health Act of 2009, and its implementing rules and regulations, as well as regulations promulgated by the Federal Trade Commission and state breach notification laws. We would also be exposed to a risk of loss or litigation and potential liability, which could materially adversely affect our business, results of operations and financial condition.

***Our employees and independent contractors, including principal investigators, consultants, commercial collaborators, service providers and other vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, which could have an adverse effect on our results of operations.***

We are exposed to the risk that our employees and independent contractors, including principal investigators, consultants, any future commercial collaborators, service providers and other vendors may engage in misconduct or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or other unauthorized activities that violate the laws and regulations of the FDA and other similar regulatory bodies, including those laws that require the reporting of true, complete and accurate information to such regulatory bodies; manufacturing standards; U.S. federal and state healthcare fraud and abuse, data privacy laws and other similar non-U.S. laws; or laws that require the true, complete and accurate reporting of financial information or data. Activities subject to these laws also involve the improper use or misrepresentation of information obtained in the course of clinical studies, the creation of fraudulent data in our preclinical studies or clinical studies, or illegal misappropriation of product, which could result in regulatory sanctions and cause serious harm to our reputation. It is not always possible to identify and deter misconduct by employees and other third-parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. In addition, we are subject to the risk that a person or government could allege such fraud or other misconduct, even if none occurred. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business and financial results, including, without limitation, the imposition of significant civil, criminal and administrative penalties, damages, monetary fines, disgorgements, possible exclusion from participation in Medicare, Medicaid and other U.S. healthcare programs, individual imprisonment, other sanctions, contractual damages, reputational harm, diminished profits and future earnings and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

***Our business involves the use of hazardous materials and we and our third-party manufacturers and suppliers must comply with environmental laws and regulations, which can be expensive and restrict how we do business.***

Our research and development activities and our third-party manufacturers' and suppliers' activities involve the controlled storage, use and disposal of hazardous materials owned by us, including the components of our product and drug candidates and other hazardous compounds. We and any third-party manufacturers and suppliers we engage are subject to numerous federal, state and local environmental, health and safety laws, regulations and permitting requirements, including those governing laboratory procedures; the generation, handling, use, storage, treatment, and disposal of hazardous and regulated materials and wastes; the emission and discharge of hazardous materials into the ground, air and water; and employee health and safety. Our operations involve the use of hazardous and flammable materials, including chemicals and biological and radioactive materials. Our operations also produce hazardous waste. In some cases, these hazardous materials and various wastes resulting from their use are stored at our and our manufacturers' facilities pending their use and disposal. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination, which could cause an interruption of our commercialization efforts, research and development efforts and business operations, environmental damage resulting in costly clean-up and liabilities under applicable laws and regulations governing the use, storage, handling and disposal of these materials and specified waste products.

Although we believe that the safety procedures utilized by our third-party manufacturers for handling and disposing of these materials generally comply with the standards prescribed by these laws and regulations, we cannot guarantee that this is the case or eliminate the risk of accidental contamination or injury from these materials. Under certain environmental laws, we could be held responsible for costs relating to any contamination at our current or past facilities and at third-party facilities. In such an event, we may be held liable for any resulting damages and such liability could exceed our resources and state or federal or other applicable authorities may curtail our use of certain materials and/or interrupt our business operations. Furthermore, environmental laws and regulations are complex, change frequently and have tended to become more stringent. We cannot predict the impact of such changes and cannot be certain of our future compliance.

Compliance with applicable environmental laws and regulations may be expensive, and current or future environmental laws and regulations may impair our research, product development and manufacturing efforts. In addition, we cannot entirely eliminate the risk of accidental injury or contamination from these materials or wastes. Although 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 carry specific biological or hazardous waste insurance coverage, and

our property, casualty, and general liability insurance policies specifically exclude coverage for damages and fines arising from biological or hazardous waste exposure or contamination. Accordingly, in the event of contamination or injury, we could be held liable for damages or be penalized with fines in an amount exceeding our resources, and our clinical studies or regulatory approvals could be suspended, which could have a material adverse effect on our business, results of operations and financial condition.

**Risks Related to Intellectual Property**

***Our senolytic medicine platform and any future products that we commercialize could be alleged to infringe patent rights and other proprietary rights of third parties, which may require costly litigation and, if we are not successful, could cause us to pay substantial damages and/ or limit our ability to commercialize our products.***

Our commercial success depends on our ability to develop, manufacture and market our senolytic medicines and future drug candidates and use our proprietary technology without infringing the patents and other proprietary rights of third parties. Intellectual property disputes can be costly to defend and may cause our business, operating results and financial condition to suffer. We operate in an industry with extensive intellectual property litigation. As the biopharmaceutical and pharmaceutical industries expand and more patents are issued, the risk increases that there may be patents issued to third parties that relate to our products and technology of which we are not aware or that we may need to challenge to continue our operations as currently contemplated.

Whether merited or not, we may face allegations that we have infringed the trademarks, copyrights, patents and other intellectual property rights of third parties, including patents held by our competitors or by non-practicing entities. We may also face allegations that our employees have misappropriated the intellectual property rights of their former employers or other third parties.

Litigation may make it necessary to defend ourselves by determining the scope, enforceability and validity of third-party proprietary rights, or to establish our proprietary rights. Regardless of whether claims that we are infringing patents or other intellectual property rights have merit, the claims can be time consuming, divert management attention and financial resources and are costly to evaluate and defend. Results of any such litigation are difficult to predict and may require us to stop treating certain conditions, obtain licenses or modify our products and features while we develop non-infringing substitutes, or may result in significant settlement costs. For example, litigation can involve substantial damages for infringement (and if the court finds that the infringement was willful, we could be ordered to pay treble damages and the patent owner’s attorneys’ fees), and the court could prohibit us from selling or licensing our products unless the third party licenses rights to us, which it is not required to do at a commercially reasonable price or at all. If a license is available from a third party, we may have to pay substantial royalties, upfront fees or grant cross-licenses to intellectual property rights for our products. We may also have to redesign our products so they do not infringe third-party intellectual property rights, which may not be possible at all or may require substantial monetary expenditures and time, during which our products may not be available for manufacture, use, or sale.

In addition, patent applications in the U.S. and many international jurisdictions are typically not published until 18 months after the filing of certain priority documents (or, in some cases, are not published until they issue as patents) and publications in the scientific literature often lag behind actual discoveries. Thus, we cannot be certain that others have not filed patent applications or made public disclosures relating to our technology or our contemplated technology. A third party may have filed, and may in the future file, patent applications covering our products or technology similar to ours. Any such patent application may have priority over our patent applications or patents, which could further require us to obtain rights to issued patents covering such technologies. If another party has filed a U.S. patent application on inventions similar to ours, depending on whether the timing of the filing date falls under certain patent laws, we may have to participate in a priority contest (such as an interference proceeding) declared by the U.S. Patent and Trademark Office, to determine priority of invention in the U.S. The costs of patent and other proceedings could be substantial, and it is possible that such efforts would be unsuccessful if it is determined that the other party had independently arrived at the same or similar invention prior to our own invention, resulting in a loss of our U.S. patent position with respect to such inventions.

From time to time, we may be subject to legal proceedings and claims in the ordinary course of business with respect to intellectual property. Although we are not currently subject to any claims from third parties asserting

infringement of their intellectual property rights, in the future, we may receive claims from third parties asserting infringement of their intellectual property rights. Future litigation may be necessary to establish our intellectual property rights or to defend ourselves by determining the scope, enforceability and validity of third-party intellectual property rights. There can be no assurance with respect to the outcome of any current or future litigation brought by or against us, and the outcome of any such litigation could have a material adverse impact on our business, operating results and financial condition. Litigation is inherently unpredictable and outcomes are uncertain. Further, as the costs and outcome of these types of claims and proceedings can vary significantly, it is difficult to estimate potential losses that may occur. Accordingly, we are unable at this time to estimate the effects of these potential future lawsuits on our financial condition, operations or cash flows.

Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments, and if securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of our common stock. Finally, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations.

***If we are unable to obtain, maintain and enforce intellectual property protection directed to our senolytic medicine platform and any future technologies that we develop, others may be able to make, use, or sell products substantially the same as ours, which could adversely affect our ability to compete in the market.***

As of June 30, 2020, we own, co-own, or have an exclusive license in certain fields of use to more than 150 patents and pending applications in the United States and foreign jurisdictions. This portfolio includes 41 issued and allowed U.S. patents and applications and 23 granted and allowed foreign patents and applications, respectively.

We have not pursued or maintained, and may not pursue or maintain in the future, patent protection for our products in every country or territory in which we may sell our products. In addition, we cannot be sure that any of our pending patent applications or pending trademark applications will issue or that, if issued, they will issue in a form that will be advantageous to us. The U.S. Patent and Trademark Office, or the USPTO, international patent offices or judicial bodies may deny or significantly narrow claims made under our patent applications and our issued patents may be successfully challenged, may be designed around, or may otherwise be of insufficient scope to provide us with protection for our commercial products. Further, the USPTO, international trademark offices or judicial bodies may deny our trademark applications and, even if published or registered, these trademarks may not effectively protect our brand and goodwill. Like patents, trademarks also may be successfully opposed or challenged.

We cannot be certain that the steps we have taken will prevent unauthorized use or unauthorized reverse engineering of our technology. Moreover, third parties may independently develop technologies that are competitive with ours and such competitive technologies may or may not infringe our intellectual property. The enforcement of our intellectual property rights also depends on the success of our legal actions against these infringers in the respective country or forum, but these actions may not be successful. As with all granted intellectual property, such intellectual property may be challenged, invalidated or circumvented, may not provide specific protection and/or may not prove to be enforceable in actions against specific alleged infringers.

The market for biopharmaceuticals, pharmaceuticals and treatments for age-related diseases is highly competitive and subject to rapid technological change. Our success depends, in part, upon our ability to maintain a competitive position in the development and protection of technologies and products for use in these fields and upon our ability to obtain, maintain and enforce our intellectual property rights in connection therewith. We seek to obtain and maintain patents and other intellectual property rights to restrict the ability of others to market products that misappropriate our technology and/or infringe our intellectual property to unfairly and illegally compete with our products. If we are unable to protect our intellectual property and proprietary rights, our competitive position and our business could be harmed, as third parties may be able to make, use, or sell products that are substantially the same as ours without incurring the sizeable development and licensing costs that we have incurred, which would adversely affect our ability to compete in the market.

We use a combination of patents, trademarks, know-how, confidentiality procedures and contractual provisions to protect our proprietary technology. However, these protections may not be adequate and may not provide us with any competitive advantage. For example, patents may not issue from any of our currently pending or any future patent applications, and our issued patents and any future patents that may issue may not survive legal challenges to their scope, validity or enforceability, or provide significant protection for us.

If we or one of our current or future collaborators were to initiate legal proceedings against a third party to enforce a patent covering one of our lead drug candidates or future drug candidates, the defendant could counterclaim that our patent is invalid and/or unenforceable. In patent litigation in the U.S., 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, including 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 USPTO, or made a misleading statement, during prosecution. Third parties may also raise similar claims before the USPTO, even outside the context of litigation. The outcome following legal assertions of invalidity and unenforceability 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 our drug candidates. Such a loss of patent protection would have a material adverse impact on our business.

Even if our patents are determined by a court to be valid and enforceable, they may not be interpreted sufficiently broadly to prevent others from marketing products similar to ours or designing around our patents. For example, third parties may be able to make products that are similar to ours but that are not covered by the claims of our patents. Third parties may assert that we or our licensors were not the first to make the inventions covered by our issued patents or pending patent applications. The claims of our issued patents or patent applications when issued may not cover our proposed commercial technologies or the future products that we develop. We may not have freedom to commercialize unimpeded by the patent rights of others. Third parties may have dominating, blocking, or other patents relevant to our technology of which we are not aware. There may be prior public disclosures or art that could be deemed to invalidate one or more of our patent claims. Further, we may not develop additional proprietary technologies in the future, and, if we do, they may not be patentable.

Patent law can be highly uncertain and involve complex legal and factual questions for which important principles remain unresolved. In the U.S. and in many international jurisdictions, policy regarding the breadth of claims allowed in patents can be inconsistent. The U.S. Supreme Court and the Court of Appeals for the Federal Circuit have made, and will likely continue to make, changes in how the patent laws of the U.S. are interpreted. Similarly, international courts have made, and will likely continue to make, changes in how the patent laws in their respective jurisdictions are interpreted. We cannot predict future changes in the interpretation of patent laws or changes to patent laws that might be enacted into law by U.S. and international legislative bodies. Those changes may materially affect our patents, our ability to obtain patents or the patents and patent applications of our licensors.

Patent reform legislation in the U.S. could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. For example, on September 16, 2011, the Leahy-Smith America Invents Act, or Leahy-Smith Act, was signed into law. The Leahy-Smith Act included a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted, redefine prior art, may affect patent litigation, and switch the U.S. patent system from a “first-to-invent” system to a “first-to-file” system. Under a “first-to-file” system, assuming the other requirements for patentability are met, the first inventor to file a patent application generally will be entitled to the patent on an invention regardless of whether another inventor had made the invention earlier. The U.S. Patent and Trademark Office recently developed new regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, and in particular, the first-to-file provisions, only became effective on March 16, 2013. The Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, which could have a material adverse effect on our business and financial condition.

In addition, we have a number of international patents and patent applications and expect to continue to pursue patent protection in many of the significant markets in which we intend to do business. The laws of some international jurisdictions may not protect intellectual property rights to the same extent as laws in the U.S., and many companies have encountered significant difficulties in obtaining, protecting, and defending such rights in international jurisdictions. If we encounter such difficulties or we are otherwise precluded from effectively protecting our intellectual property rights in international jurisdictions, our business prospects could be substantially harmed.

Varying filing dates in international countries may also permit intervening third parties to allege priority to certain technology.

Patent terms may be shortened or lengthened by, for example, terminal disclaimers, patent term adjustments, supplemental protection certificates, and patent term extensions. Patent term extensions and supplemental protection certificates, and the like, may be impacted by the regulatory process and may not significantly lengthen the patent term. Non-payment or delay in payment of patent fees or annuities, delay in patent filings or delay in extension filing (including any patent term extension or adjustment filing), whether intentional or unintentional, may also result in the loss of patent rights important to our business. Certain countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to other parties. In addition, many countries limit the enforceability of patents against other parties, including government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of any patents.

In addition to the protection afforded by patents, we rely on confidentiality agreements to protect confidential information and proprietary know how that is not patentable or that we elect not to patent, processes for which patents are difficult to enforce and any other elements of our drug candidate discovery and development processes that involve proprietary know-how, information or technology that is not covered by patents. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our employees, consultants, scientific advisors and contractors. We cannot guarantee that we have entered into such agreements with each party that may have or have had access to our confidential information or proprietary technology and processes. We also seek to preserve the integrity and confidentiality of our data and other confidential information by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached and detecting the disclosure or misappropriation of confidential information and enforcing a claim that a party illegally disclosed or misappropriated confidential information is difficult, expensive and time-consuming, and the outcome is unpredictable. Further, we may not be able to obtain adequate remedies for any breach. In addition, our confidential information may otherwise become known or be independently discovered by competitors, in which case we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us. We may in the future rely on trade secret protection, which would be subject to the risks identified above with respect to confidential information.

Monitoring unauthorized use of our intellectual property is difficult and costly. From time to time, we review our competitors' products, and may in the future seek to enforce our patents or other rights against potential infringement. However, the steps we have taken to protect our proprietary rights may not be adequate to prevent misappropriation of our intellectual property. We may not be able to detect unauthorized use of, or take appropriate steps to enforce, our intellectual property rights. Our competitors may also independently develop similar technology. Any inability to meaningfully protect our intellectual property could result in competitors offering products that incorporate our product or service features, which could reduce demand for our products. In addition, we may need to defend our patents from third-party challenges, such as (but not limited to) interferences, derivation proceedings, reexamination proceedings, post-grant review, inter partes review, third-party submissions, oppositions, nullity actions or other patent proceedings. We may need to initiate infringement claims or litigation.

Adverse proceedings such as litigation can be expensive, time consuming and may divert the efforts of our technical and managerial personnel, which could in turn harm our business, whether or not we receive a determination favorable to us. In addition, in an infringement proceeding, a court or other judicial body may decide that the patent we seek to enforce is invalid or unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that the patent in question does not cover the technology in question. An adverse result in any litigation could put one or more of our patents at risk of being invalidated or interpreted narrowly. Some of our

competitors may be able to devote significantly more resources to intellectual property litigation and may have significantly broader patent portfolios to assert against us if we assert our rights against them. Further, because of the substantial discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be disclosed or otherwise compromised during litigation.

We may not be able to correctly estimate or control our future operating expenses in relation to obtaining intellectual property, enforcing intellectual property and/or defending intellectual property, which could affect operating expenses. Our operating expenses may fluctuate significantly in the future as a result of a variety of factors, including the costs of preparing, filing, prosecuting, defending, and enforcing patent and trademark claims and other intellectual property-related costs, including adverse proceedings (such as litigation) costs.

***Our intellectual property agreements with third parties may be subject to disagreements over contract interpretation, which could narrow the scope of our rights to the relevant intellectual property or technology or increase our financial or other obligations to our licensors.***

Certain provisions in our intellectual property agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could affect the scope of our rights to the relevant intellectual property or technology, or affect financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

In addition, while it is our policy to require our employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who in fact conceives or develops intellectual property that we regard as our own. Our assignment agreements may not be self-executing or may be breached, and we may be forced to bring claims against third parties, or defend claims they may bring against us, to determine the ownership of what we regard as our intellectual property.

***We may be subject to claims challenging the inventorship or ownership of our patents and other intellectual property.***

We may also be subject to claims that former employees, collaborators or other third parties have an ownership interest in our patents or other intellectual property. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and distraction to management and other employees.

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

Filing, prosecuting and defending patents on drug candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the U.S. can be less extensive than those in the U.S. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the U.S. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the U.S., or from selling or importing products made using our inventions in and into the U.S. or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the U.S. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biopharmaceuticals, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in

foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful.

Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

***If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.***

Our registered or unregistered trademarks or trade names may be challenged, infringed, circumvented, declared generic or conflict with third-party rights. We may not be able to protect our rights to these trademarks and trade names, which we need to build name recognition by potential partners or customers in our markets of interest. In addition, third parties may file first for our trademarks in certain countries. If they succeeded in registering such trademarks, and if we were not successful in challenging such third-party rights, we may not be able to use these trademarks to market our products in those countries. In such cases, over the long term, if we are unable to establish name recognition based on our trademarks and trade names, then our marketing abilities may be impacted.

***If we are unable to protect the confidentiality of our proprietary information and know-how, the value of our technology and products could be adversely affected.***

We may not be able to protect our proprietary information and technology adequately. Although we use reasonable efforts to protect our proprietary information, technology, and know-how, our employees, consultants, contractors and outside scientific advisors may unintentionally or willfully disclose our information to competitors. Enforcing a claim that a third party illegally obtained and is using any of our proprietary information, technology or know-how is expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the U.S. are sometimes less willing to protect proprietary information, technology, and know-how. We rely, in part, on non-disclosure and confidentiality agreements with our employees, consultants and other parties to protect our proprietary information, technology, and know-how. These agreements may be breached and we may not have adequate remedies for any breach. Moreover, others may independently develop similar or equivalent proprietary information, and third parties may otherwise gain access to our proprietary knowledge.

**Risks Related to Government Regulation**

***Even if we obtain regulatory approval for a drug candidate, our products will remain subject to regulatory scrutiny.***

If our drug candidates are approved, they will be subject to ongoing regulatory requirements for manufacturing, labeling, packaging, storage, advertising, promotion, sampling, record-keeping, conduct of post-marketing studies, and submission of safety, efficacy, and other post-market information, including both federal and state requirements in the U.S. and requirements of comparable foreign regulatory authorities.

Manufacturers and manufacturers' facilities are required to comply with extensive FDA and comparable foreign regulatory authority requirements, including ensuring that quality control and manufacturing procedures conform to cGMP regulations. As such, we and our contract manufacturers will be subject to continual review and inspections to assess compliance with cGMP and adherence to commitments made in any approved marketing application. Accordingly, we and others with whom we work must continue to expend time, money, and effort in all areas of regulatory compliance, including manufacturing, production, and quality control.

We will have to comply with requirements concerning advertising and promotion for our products. Promotional communications with respect to prescription drugs and biologics are subject to a variety of legal and regulatory restrictions and must be consistent with the information in the product's approved label. As such, we may not promote our products for indications or uses for which they do not have approval. The holder of an approved application must submit new or supplemental applications and obtain approval for certain changes to the approved product, product labeling, or manufacturing process. We could also be asked to conduct post-marketing clinical

studies to verify the safety and efficacy of our products in general or in specific patient subsets. An unsuccessful post-marketing study or failure to complete such a study could result in the withdrawal of marketing approval.

If a regulatory agency discovers previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, or disagrees with the promotion, marketing or labeling of a product, such regulatory agency may impose restrictions on that product or us, including requiring withdrawal of the product from the market. If we fail to comply with applicable regulatory requirements, a regulatory agency or enforcement authority may, among other things:

- issue warning letters;
- impose civil or criminal penalties;
- suspend or withdraw regulatory approval;
- suspend any of our clinical studies;
- refuse to approve pending applications or supplements to approved applications submitted by us;
- impose restrictions on our operations, including closing our contract manufacturers' facilities; or
- seize or detain products or require a product recall.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. Any failure to comply with ongoing regulatory requirements may significantly and adversely affect our ability to commercialize and generate revenue from our products. If regulatory sanctions are applied or if regulatory approval is withdrawn, the value of our company and our operating results will be adversely affected.

Moreover, the policies of the FDA and of other regulatory authorities may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our drug candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative or executive action, either in the U.S. or abroad. For example, certain policies of the Trump administration may impact our business and industry.

Namely, the Trump administration has taken several executive actions, including the issuance of a number of Executive Orders, that could impose significant burdens on, or otherwise materially delay, the FDA's ability to engage in routine oversight activities such as implementing statutes through rulemaking, issuance of guidance, and review and approval of marketing applications. It is difficult to predict how these orders will be implemented, and the extent to which they will impact the FDA's ability to exercise its regulatory authority. If these executive actions impose restrictions on the FDA's ability to engage in oversight and implementation activities in the normal course, our business may be negatively impacted. In addition, if we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

***If any of our small molecule drug candidates obtain regulatory approval, additional competitors could enter the market with generic versions of such drugs, which may result in a material decline in sales of affected products.***

Under the Drug Price Competition and Patent Term Restoration Act of 1984, or the Hatch-Waxman Act, a pharmaceutical manufacturer may file an abbreviated new drug application, or ANDA, seeking approval of a generic version of an approved, small molecule innovator product. Under the Hatch-Waxman Act, a manufacturer may also submit a new drug application, or NDA, under section 505(b)(2) of the Federal Food, Drug, and Cosmetic Act that

references the FDA's prior approval of the small molecule innovator product. A 505(b)(2) NDA product may be for a new or improved version of the original innovator product. The Hatch-Waxman Act also provides for certain

periods of regulatory exclusivity, which preclude FDA approval (or in some circumstances, FDA filing and review) of an ANDA or 505(b)(2) NDA. In addition to the benefits of regulatory exclusivity, an innovator NDA holder may have patents claiming the active ingredient, product formulation or an approved use of the drug, which would be listed with the product in the FDA publication, "Approved Drug Products with Therapeutic Equivalence Evaluations," known as the Orange Book. If there are patents listed in the Orange Book for a product, a generic or 505(b)(2) applicant that seeks to market its product before expiration of the patents must include in their applications what is known as a "Paragraph IV" certification, challenging the validity or enforceability of, or claiming non-infringement of, the listed patent or patents. Notice of the certification must be given to the patent owner and NDA holder and if, within 45 days of receiving notice, either the patent owner or NDA holder sues for patent infringement, approval of the ANDA or 505(b)(2) NDA is stayed for up to 30 months.

Accordingly, if any of our small molecule drug candidates, such as UBX0101 or UBX1967, are approved, competitors could file ANDAs for generic versions of our small molecule drug products or 505(b)(2) NDAs that reference our small molecule drug products. If there are patents listed for our small molecule drug products in the Orange Book, those ANDAs and 505(b)(2) NDAs would be required to include a certification as to each listed patent indicating whether the ANDA applicant does or does not intend to challenge the patent. We cannot predict which, if any, patents in our current portfolio or patents we may obtain in the future will be eligible for listing in the Orange Book, how any generic competitor would address such patents, whether we would sue on any such patents, or the outcome of any such suit.

We may not be successful in securing or maintaining proprietary patent protection for products and technologies we develop or license. Moreover, if any of our owned or in-licensed patents that are listed in the Orange Book are successfully challenged by way of a Paragraph IV certification and subsequent litigation, the affected product could immediately face generic competition and its sales would likely decline rapidly and materially.

***Any biologic, or large molecule, drug candidates for which we intend to seek approval may face competition sooner than anticipated.***

If we are successful in achieving regulatory approval to commercialize any biologic drug candidate faster than our competitors, such drug candidates may face competition from biosimilar products. In the U.S., large molecule drug candidates are regulated by the FDA as biologic products subject to approval under the biologics license application, or BLA, pathway. The Biologics Price Competition and Innovation Act of 2009, or BPCIA, creates an abbreviated pathway for the approval of biosimilar and interchangeable biologic products following the approval of an original BLA. The abbreviated regulatory pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as "interchangeable" based on its similarity to an existing brand product. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the original branded product was approved under a BLA. The law is complex and is still being interpreted and implemented by the FDA. As a result, its ultimate impact, implementation, and meaning are subject to uncertainty.

Moreover, the extent to which a biosimilar product, once approved, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biologic products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing. In addition, a competitor could decide to forego the biosimilar approval path and submit a full BLA after completing its own preclinical studies and clinical studies. In such cases, any exclusivity to which we may be eligible under the BPCIA would not prevent the competitor from marketing its product as soon as it is approved.

If competitors are able to obtain marketing approval for biosimilars referencing our large molecule drug candidates, if approved, such products may become subject to competition from such biosimilars, with the attendant competitive pressure and potential adverse consequences. Such competitive products may be able to immediately compete with us in each indication for which our drug candidates may have received approval.

***We may seek orphan drug designation for certain future drug candidates, but we may be unable to obtain such designations or to maintain the benefits associated with orphan drug designation, including market exclusivity, which may cause our revenue, if any, to be reduced.***

We may pursue orphan drug designation for certain of our future drug candidates. Under the Orphan Drug Act, the FDA may designate a drug or biologic product as an orphan drug if it is intended to treat a rare disease or condition, defined as a patient population of fewer than 200,000 in the U.S., or a patient population greater than 200,000 in the U.S. where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the U.S. In the European Union, the EMA's Committee for Orphan Medicinal Products, or COMP, grants orphan drug designation to promote the development of products that are intended for the diagnosis, prevention, or treatment of a life-threatening or chronically debilitating condition affecting not more than five in 10,000 persons in the European Union. Additionally, designation is granted for products intended for the diagnosis, prevention, or treatment of a life-threatening, seriously debilitating or serious and chronic condition when, without incentives, it is unlikely that sales of the drug in the European Union would be sufficient to justify the necessary investment in developing the drug or biological product or where there is no satisfactory method of diagnosis, prevention, or treatment, or, if such a method exists, the medicine must be of significant benefit to those affected by the condition.

In the U.S., orphan drug designation entitles a party to financial incentives such as opportunities for grant funding towards clinical study costs, tax advantages, and application fee waivers. In addition, if a product receives the first FDA approval for the indication for which it has orphan designation, the product is entitled to orphan drug exclusivity, which means the FDA may not approve any other application to market the same drug for the same indication for a period of seven years, except in limited circumstances, such as a showing of clinical superiority over the product with orphan exclusivity or where the manufacturer is unable to assure sufficient product quantity for the orphan patient population. In the European Union, orphan drug designation entitles a party to financial incentives such as reduction of fees or fee waivers and ten years of market exclusivity following drug or biological product approval. This period may be reduced to six years if the orphan drug designation criteria are no longer met, including where it is shown that the product is sufficiently profitable not to justify maintenance of market exclusivity.

Even if we obtain orphan drug designation, we may not be the first to obtain marketing approval for any particular orphan indication due to the uncertainties associated with developing pharmaceutical products. Further, even if we obtain orphan drug exclusivity for a drug candidate, that exclusivity may not effectively protect the product from competition because different drugs with different active moieties can be approved for the same condition. Even after an orphan drug is approved, the FDA or EMA can subsequently approve the same drug with the same active moiety for the same condition if the FDA or EMA concludes that the later drug is clinically superior in that it is safer, more effective, or makes a major contribution to patient care. Orphan drug designation neither shortens the development time or regulatory review time of a drug or biologic nor gives the drug or biologic any advantage in the regulatory review or approval process.

***Enacted and future healthcare legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our drug candidates and may affect the prices we may set.***

In the U.S., the EU and other jurisdictions, there have been, and we expect there will continue to be, a number of legislative and regulatory changes and proposed changes to the healthcare system that could affect our future results of operations. In particular, there have been and continue to be a number of initiatives at the U.S. federal and state levels that seek to reduce healthcare costs and improve the quality of healthcare. For example, in March 2010, the Patient Protection and ACA, as amended by the Health Care and Education Reconciliation Act, or collectively the Affordable Care Act, was enacted, which substantially changed the way healthcare is financed by both governmental and private insurers. Among the provisions of the ACA, those of greatest importance to the pharmaceutical and biotechnology industries include the following:

- an annual, non-deductible fee payable by any entity that manufactures or imports certain branded prescription drugs and biologic agents (other than those designated as orphan drugs), which is apportioned among these entities according to their market share in certain government healthcare programs;

- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 70% 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;

- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13.0% of the average manufacturer price for branded and generic drugs, respectively;

- a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected;

- extension of a manufacturer's Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;

- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to certain individuals with income at or below 133% of the federal poverty level, thereby potentially increasing a manufacturer's Medicaid rebate liability;

- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research;

- creation of the Independent Payment Advisory Board, which, once empaneled, will have the authority to recommend certain changes to the Medicare program that could result in reduced payments for prescription drugs and those recommendations could have the effect of law unless overruled by a supermajority vote of Congress; and

- establishment of a Center for Medicare Innovation at the Centers for Medicare & Medicaid Services, or CMS, to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

Since its enactment, there have been judicial and Congressional challenges to certain aspects of the Affordable Care Act. For example, the Tax Cuts and Jobs Act of 2017, or the Tax Act, includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". Additionally, on December 14, 2018, a U.S. District Court Judge in Texas ruled that the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress as part of the Tax Act. On December 18, 2019, the U.S. Court of Appeals for the 5th Circuit upheld the district court's decision that the individual mandate was unconstitutional but remanded the case back to the District Court to determine whether the remaining provisions of the ACA are invalid as well. On March 2, 2020, the U.S. Supreme Court granted the petitions for writs of certiorari to review the case, although it is unclear when a decision will be made or how the Supreme Court will rule. In addition, there may be other efforts to challenge, repeal or replace the ACA that may impact our business or financial condition.

In addition, other legislative changes have been proposed and adopted in the U.S. since the Affordable Care Act was enacted. In August 2011, the Budget Control Act of 2011, among other things, led to aggregate reductions of Medicare payments to providers of 2% per fiscal year. These reductions went into effect in April 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2030, with the exception of a temporary suspension from May 1, 2020 through December 31, 2020, unless additional action is taken by Congress. In addition, in January 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Individual states in the U.S. have also become increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. Legally mandated price controls on payment amounts by third-party payors or other restrictions could harm our business, results of operations, financial condition and prospects. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical

products and which suppliers will be included in their prescription drug and other healthcare programs. This could reduce the ultimate demand for our drug candidates or put pressure on our product pricing. Moreover, payment methodologies may be subject to changes in healthcare legislation and regulatory initiatives. For example, CMS may develop new payment and delivery models, such as bundled payment models. In addition, recently there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products.

In the EU, similar political, economic and regulatory developments may affect our ability to profitably commercialize our drug candidates, if approved. In addition to continuing pressure on prices and cost containment measures, legislative developments at the EU or member state level may result in significant additional requirements or obstacles that may increase our operating costs. The delivery of healthcare in the EU, including the establishment and operation of health services and the pricing and reimbursement of medicines, is almost exclusively a matter for national, rather than EU, law and policy. National governments and health service providers have different priorities and approaches to the delivery of health care and the pricing and reimbursement of products in that context. In general, however, the healthcare budgetary constraints in most EU member states have resulted in restrictions on the pricing and reimbursement of medicines by relevant health service providers. Coupled with ever-increasing EU and national regulatory burdens on those wishing to develop and market products, this could prevent or delay marketing approval of our drug candidates, restrict or regulate post-approval activities and affect our ability to commercialize our drug candidates, if approved. In markets outside of the U.S. and EU, reimbursement and healthcare payment systems vary significantly by country, and many countries have instituted price ceilings on specific products and therapies.

We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action in the U.S., the EU or any other jurisdiction. If we or any third parties we may engage are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we or such third parties are not able to maintain regulatory compliance, our drug candidates may lose any regulatory approval that may have been obtained and we may not achieve or sustain profitability.

***Our business operations and current and future relationships with investigators, healthcare professionals, consultants, third-party payors, patient organizations and customers will be subject to applicable healthcare regulatory laws, which could expose us to penalties.***

Our business operations and current and future arrangements with investigators, healthcare professionals, consultants, third-party payors, patient organizations and customers, may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations. These laws may constrain the business or financial arrangements and relationships through which we conduct our operations, including how we research, market, sell and distribute our drug candidates, if approved.

Such laws include:

- the U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, offering, receiving or providing any remuneration (including any kickback, bribe, or certain rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, lease, order or recommendation of, any good, facility, item or service, for which payment may be made, in whole or in part, under U.S. federal and state healthcare programs such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- the U.S. federal false claims and civil monetary penalties laws, including the civil False Claims Act, which, among other things, impose criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the U.S. federal government, claims for payment or approval that are false or fraudulent, knowingly making, using or causing to be made or used, a false record or statement material to a false or fraudulent claim, or from knowingly making a false statement to avoid, decrease or conceal an obligation to pay money to the U.S. federal government. In addition, the government may assert that a claim including items and services

resulting from a violation of the U.S. federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;

- the U.S. federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which imposes criminal and civil liability for, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, or 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; similar to the U.S. federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- the FDCA, which prohibits, among other things, the adulteration or misbranding of drugs, biologics and medical devices;

- the U.S. Public Health Service Act, which prohibits, among other things, the introduction into interstate commerce of a biological product unless a biologics license is in effect for that product;

- the U.S. Physician Payments Sunshine Act and its implementing regulations, which require certain manufacturers of drugs, devices, biologics and medical supplies that are reimbursable under Medicare, Medicaid, or the Children's Health Insurance Program to report annually to the government information related to certain payments and other transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), certain other healthcare providers starting in 2022, and teaching hospitals, as well as ownership and investment interests held by the physicians described above and their immediate family members;

- analogous U.S. state laws and regulations, including: state anti-kickback and false claims laws, which may apply to our business practices, including but not limited to, research, distribution, sales and marketing arrangements and claims involving healthcare items or services reimbursed by any third-party payor, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the U.S. federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; and state laws and regulations that require drug manufacturers to file reports relating to pricing and marketing information, which requires tracking gifts and other remuneration and items of value provided to healthcare professionals and entities; and

- similar healthcare laws and regulations in the EU and other jurisdictions, including reporting requirements detailing interactions with and payments to healthcare providers.

Ensuring that our internal operations and future business arrangements with third parties comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations, agency guidance 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 the laws described above or any other governmental laws and regulations that may apply to us, we may be subject to significant penalties, including civil, criminal and administrative penalties, damages, fines, exclusion from government-funded healthcare programs, such as Medicare and Medicaid or similar programs in other countries or jurisdictions, disgorgement, individual imprisonment, contractual damages, reputational harm, diminished profits and the curtailment or restructuring of our operations. Further, defending against any such actions can be costly, time-consuming and may require significant personnel resources. Therefore, even if we are successful in defending against any such actions that may be brought against us, our business may be impaired.

***Changes in and failures to comply with U.S. and foreign privacy and data protection laws, regulations and standards may adversely affect our business, operations and financial performance.***

We are subject to or affected by numerous federal, state and foreign laws and regulations, as well as regulatory guidance, governing the collection, use, disclosure, retention, and security of personal information, such as information that we collect about patients and healthcare providers in connection with clinical trials in the United

States and abroad. The global data protection landscape is rapidly evolving, and implementation standards and enforcement practices are likely to remain uncertain for the foreseeable future. This evolution may create uncertainty in our business, affect our or any service providers', contractors' or future collaborators' ability to operate in certain jurisdictions or to collect, store, transfer use and share personal information, necessitate the acceptance of more onerous obligations in our contracts, result in liability or impose additional costs on us. The cost of compliance with these laws, regulations and standards is high and is likely to increase in the future. Any failure or perceived failure by us or our collaborators, service providers and contractors to comply with federal, state or foreign laws or regulation, our internal policies and procedures or our contracts governing processing of personal information could result in negative publicity, diversion of management time and effort and proceedings against us by governmental entities or others. In many jurisdictions, enforcement actions and consequences for noncompliance are rising.

In the United States, HIPAA imposes privacy, security and breach reporting obligations with respect to individually identifiable health information upon "covered entities" (health plans, health care clearinghouses and certain health care providers), and their respective business associates, individuals or entities that create, received, maintain or transmit protected health information in connection with providing a service for or on behalf of a covered entity. HIPAA mandates the reporting of certain breaches of health information to HHS, affected individuals and if the breach is large enough, the media. Entities that are found to be in violation of HIPAA as the result of a breach of unsecured protected health information, a complaint about privacy practices or an audit by HHS, may be subject to significant civil, criminal and administrative fines and penalties and/or additional reporting and oversight obligations if required to enter into a resolution agreement and corrective action plan with HHS to settle allegations of HIPAA non-compliance. Even when HIPAA does not apply, according to the Federal Trade Commission or the FTC, violating consumers' privacy rights or failing to take appropriate steps to keep consumers' personal information secure may constitute unfair acts or practices in or affecting commerce in violation of Section 5(a) of the FTC Act. The FTC expects a company's data security measures to be reasonable and appropriate in light of the sensitivity and volume of consumer information it holds, the size and complexity of its business, and the cost of available tools to improve security and reduce vulnerabilities. Individually identifiable health information is considered sensitive data that merits stronger safeguards.

In addition, certain state laws govern the privacy and security of personal information, including health-related information, in certain circumstances, some of which are more stringent than HIPAA and many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts. Failure to comply with these laws, where applicable, can result in the imposition of significant civil and/or criminal penalties and private litigation. For example, California enacted the California Consumer Privacy Act, or the CCPA, on June 28, 2018, which went into effect on January 1, 2020. The CCPA gives California residents expanded rights to access and delete their personal information, opt out of certain personal information sharing, and receive detailed information about how their personal information is used. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. The CCPA may increase our compliance costs and potential liability. Some observers have noted that the CCPA could mark the beginning of a trend toward more stringent privacy legislation in the United States, which could increase our potential liability and adversely affect our business.

Our operations abroad may also be subject to increased scrutiny or attention from data protection authorities. Many countries in these regions have established or are in the process of establishing privacy and data security legal frameworks with which we, our collaborators, service providers, including our CRO, and contractors must comply. For example, the EU General Data Protection Regulation (EU) 2016/679, or GDPR, went into effect in May 2018 and imposes strict requirements for processing the personal information of EU subjects, including clinical trial data. Further, applicable privacy laws and court decisions could impact our ability to transfer personal data internationally. Recent legal developments in Europe have created complexity and compliance uncertainty regarding certain transfers of personal data from the EEA. For example, on July 16, 2020, the Court of Justice of the European Union, or the CJEU invalidated the EU-US Privacy Shield Framework, or the Privacy Shield, under which personal data could be transferred from the EEA to United States entities who had self-certified under the Privacy Shield scheme. As a result, the Privacy Shield is no longer a valid mechanism for transferring personal data from the EEA to the United States. Moreover, it is uncertain whether standard contractual clauses will also be invalidated by the European courts or legislature as a mechanism to comply with EU data protection requirements for data transfers. The GDPR has and will continue to increase compliance burdens on us, including by mandating potentially

burdensome documentation requirements and granting certain rights to individuals to control how we collect, use, disclose, retain and process information about them. The processing of sensitive personal data, such as health data, may impose heightened compliance burdens under the GDPR and is a topic of active interest among foreign regulators.

In addition, the GDPR provides for more robust regulatory enforcement and fines of up to €20 million or 4% of the annual global revenue of the noncompliant company, whichever is greater. Further, following the United Kingdom's withdrawal from the EU and the EEA and the end of the transition period on December 31, 2020, we will have to comply with the GDPR and the GDPR as incorporated into United Kingdom national law, the latter regime having the ability to separately fine up to the greater of £17.5 million or 4% of global turnover. The relationship between the United Kingdom and the EU in relation to certain aspects of data protection law remains unclear, for example around how data can lawfully be transferred between each jurisdiction, which exposes us to further compliance risk. As we expand into other foreign countries and jurisdictions, we may be subject to additional laws and regulations that may affect how we conduct business.

***Recent U.S. tax legislation and future changes to applicable U.S. tax laws and regulations may have a material adverse effect on our business, financial condition and results of operations.***

Changes in laws and policy relating to taxes may have an adverse effect on our business, financial condition and results of operations. For example, the U.S. government recently enacted significant tax reform, and certain provisions of the new law for tax years beginning after December 31, 2017 may adversely affect us. Changes include, but are not limited to, a federal corporate tax rate decrease to 21%, a reduction to the maximum deduction allowed for net operating losses generated in tax years after December 31, 2017, eliminating carrybacks of net operating losses, and providing for indefinite carryforwards for losses generated in tax years after December 31, 2017. The legislation is unclear in many respects and could be subject to potential amendments and technical corrections and will be subject to interpretations and implementing regulations by the Treasury and Internal Revenue Service, any of which could mitigate or increase certain adverse effects of the legislation. In addition, it is unclear how these U.S. federal income tax changes will affect state and local taxation. Generally, future changes in applicable U.S. tax laws and regulations, or their interpretation and application could have an adverse effect on our business, financial conditions and results of operations.

**Risks Related to Ownership of Our Common Stock**

***Our stock price may be volatile and you may not be able to resell shares of our common stock at or above the price you paid.***

The trading price of our common stock may be highly volatile and may be subject to wide fluctuations in response to various factors, some of which are beyond our control.

These factors include those discussed in this "Risk Factors" section of this report and others such as:

- results from, and any delays in, commencing, conducting or completing our clinical studies for our lead drug candidates, or any other future clinical development programs;
- announcements by academic or other third parties challenging the fundamental premises underlying our approach to treating age-related diseases and/or drug development;
- announcements of regulatory approval or disapproval of our current or any future drug candidates;
- failure or discontinuation of any of our research and development programs;
- announcements relating to future licensing, collaboration, or development agreements;
- delays in the commercialization of our current or any future drug candidates;
- public misperception regarding the use of our therapies, or public bias of against "anti-aging" companies;

- acquisitions and sales of new products, technologies, or businesses;
- manufacturing and supply issues related to our drug candidates for clinical studies or future drug candidates for commercialization;
- quarterly variations in our results of operations or those of our future competitors;
- changes in earnings estimates or recommendations by securities analysts;
- announcements by us or our competitors of new products, significant contracts, commercial relationships, acquisitions, or capital commitments;
- developments with respect to intellectual property rights;
- our commencement of, or involvement in, litigation;
- changes in financial estimates or guidance, including our ability to meet our future revenue and operating profit or loss estimates or guidance;
- any major changes in our board of directors or management;
- new legislation in the U.S. relating to the sale or pricing of pharmaceuticals;
- FDA or other U.S. or foreign regulatory actions affecting us or our industry;
- product liability claims or other litigation or public concern about the safety of our drug candidates;
- market conditions in the pharmaceutical, biopharmaceutical and biotechnology sectors; and
- general economic conditions in the U.S. and abroad.

In addition, the stock markets in general, and the markets for pharmaceutical, biopharmaceutical, and biotechnology stocks in particular, have experienced extreme volatility as a result of the COVID-19 pandemic that may be unrelated to the operating performance of the issuer. These broad market fluctuations may adversely affect the trading price or liquidity of our common stock. In the past, when the market price of a stock has been volatile, holders of that stock have sometimes instituted securities class action litigation against the issuer. If any of our stockholders were to bring such a lawsuit against us, we could incur substantial costs defending the lawsuit and the attention of our management would be diverted from the operation of our business.

***An active, liquid and orderly market for our common stock may not develop and may not be maintained.***

Prior to our initial public offering in May 2018, there was no public market for shares of our common stock. Although our common stock is listed on the Nasdaq Global Select Market, an active trading market for our common stock may never be sustained on the Nasdaq Global Select or any other exchange in the future. The lack of an active market may impair your ability to sell your shares at the time you wish to sell them or at a price that you consider reasonable. An inactive market may also impair our ability to raise capital by selling shares and may impair our ability to acquire other businesses, applications, or technologies using our shares as consideration.

***If securities or industry analysts do not publish research or reports about our business, or if they issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline.***

The trading market for our common stock is influenced by the research and reports that industry or securities analysts publish about us or our business. In the event any of the analysts who cover us issue an adverse or misleading opinion regarding us, our business model, our intellectual property or our stock performance, or if our clinical studies and operating results fail to meet the expectations of analysts, our stock price would likely decline. If

one or more of these analysts cease coverage of us or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

***We are an "emerging growth company" and as a result of the reduced disclosure and governance requirements applicable to emerging growth companies, our common stock may be less attractive to investors.***

We are an "emerging growth company," as defined in the JOBS Act, and we intend to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. In addition, as an "emerging growth company" the JOBS Act allows us to delay adoption of new or revised accounting pronouncements applicable to public companies until such pronouncements are made applicable to private companies. We have elected to use this extended transition period under the JOBS Act. As a result, our financial statements may not be comparable to the financial statements of issuers who are required to comply with the effective dates for new or revised accounting standards that are applicable to public companies, which may make comparison of our financials to those of other public companies more difficult.

We cannot predict if investors will find our common stock less attractive because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile. We may take advantage of these reporting exemptions until we are no longer an emerging growth company. Even after we no longer qualify as an emerging growth company, we may still qualify as a "smaller reporting company" which may allow us to take advantage of many of the same exemptions from disclosure requirements including not being required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act. We will remain an emerging growth company until the earlier of (1) the last day of the year following the fifth anniversary of the consummation of our IPO, (2) the last day of the year in which we have total annual gross revenue of at least $1.07 billion, (3) the last day of the year in which we are deemed to be a "large accelerated filer" as defined in Rule 12b-2 under the Exchange Act, which would occur if the market value of our common stock held by non-affiliates exceeded $700.0 million as of the last business day of the second fiscal quarter of such year or (4) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period.

***If we sell shares of our common stock in future financings, stockholders may experience immediate dilution and, as a result, our stock price may decline.***

We may from time to time issue additional shares of common stock at a discount from the current trading price of our common stock. As a result, our stockholders would experience immediate dilution upon the purchase of any shares of our common stock sold at such discount. In addition, as opportunities present themselves, we may enter into financing or similar arrangements in the future, including the issuance of debt securities, preferred stock or common stock. For example, on June 3, 2019, we filed a Registration Statement on Form S-3, covering the offering of up to $250.0 million of shares of common stock, preferred stock, debt securities, warrants and units, and entered into a sales agreement, or the June 2019 Sales Agreement, with Cowen and Company, LLC, or Cowen, to sell shares of our common stock, from time to time, with aggregate gross sales proceeds of up to $75.0 million, through an at-the-market equity offering program under which Cowen acts as our sales agent. As of December 31, 2019, we had sold 3,974,908 shares of common stock under the June 2019 Sales Agreement for total net proceeds of $26.1 million. If we issue common stock or securities convertible into common stock, our common stockholders would experience additional dilution and, as a result, our stock price may decline. During the six months ended June 30, 2020, we issued and sold 4,107,870 shares of its common stock through our ATM Offering Program and received net proceeds of approximately $29.5 million, after deducting commissions and other offering expenses of $1.0 million.

***Our principal stockholders and management own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval***

As of June 30, 2020, our executive officers, directors, holders of 5% or more of our capital stock and their respective affiliates beneficially owned approximately 55.5% of our voting stock. Therefore, these stockholders have the ability to influence us through this ownership position. These stockholders may be able to determine all matters requiring stockholder approval. For example, these stockholders may be able to control elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock that you may feel are in your best interest as one of our stockholders.

***Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall.***

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. Moreover, holders of approximately 12 million shares of our common stock have rights, subject to certain conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. We have registered and intend to continue to register all shares of common stock that we may issue under our equity compensation plans. Once we register these shares, they can be freely sold in the public market upon issuance, subject to volume limitations applicable to affiliates.

***We incur increased costs as a result of operating as a public company, and our management devote substantial time to new compliance initiatives. We may fail to comply with the rules that apply to public companies, including Section 404 of the Sarbanes-Oxley Act of 2002, which could result in sanctions or other penalties that would harm our business.***

We have incurred and will continue to incur significant legal, accounting and other expenses as a public company, including costs resulting from public company reporting obligations under the Exchange Act and regulations regarding corporate governance practices. The listing requirements of the Nasdaq Global Select Market and the rules of the Securities and Exchange Commission, or SEC, require that we satisfy certain corporate governance requirements relating to director independence, filing annual and interim reports, stockholder meetings, approvals and voting, soliciting proxies, conflicts of interest and a code of conduct. Our management and other personnel have devoted and will need to devote a substantial amount of time to ensure that we comply with all of these requirements. Moreover, the reporting requirements, rules and regulations will increase our legal and financial compliance costs and will make some activities more time-consuming and costlier. Any changes we make to comply with these obligations may not be sufficient to allow us to satisfy our obligations as a public company on a timely basis, or at all. These reporting requirements, rules and regulations, coupled with the increase in potential litigation exposure associated with being a public company, could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors or board committees or to serve as executive officers, or to obtain certain types of insurance, including directors' and officers' insurance, on acceptable terms.

We are subject to Section 404 of The Sarbanes-Oxley Act of 2002, or Section 404, and the related rules of the SEC, which generally require our management and independent registered public accounting firm to report on the effectiveness of our internal control over financial reporting. Section 404 requires an annual management assessment of the effectiveness of our internal control over financial reporting. However, for so long as we remain an emerging growth company as defined in the JOBS Act, we intend to take advantage of certain exemptions from various reporting requirements that are applicable to public companies that are not emerging growth companies, including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404. Once we are no longer an emerging growth company or, if prior to such date, we opt to no longer take advantage of the applicable exemption, we will be required to include an opinion from our independent registered public accounting firm on the effectiveness of our internal controls over financial reporting.

During the course of our review of our internal controls we may identify deficiencies in our internal controls that we must remediate. If we identify a material weakness in our internal controls over financial reporting, we may not

detect errors on a timely basis and our financial statements may be materially misstated. We or our independent registered public accounting firm may not be able to conclude on an ongoing basis that we have effective internal control over financial reporting, which could harm our operating results, cause investors to lose confidence in our reported financial information and cause the trading price of our stock to fall. In addition, as a public company we will be required to file accurate and timely quarterly and annual reports with the SEC under the Exchange Act. In order to report our results of operations and financial statements on an accurate and timely basis, we will depend in part on CROs to provide timely and accurate notice of their costs to us. Any failure to report our financial results on an accurate and timely basis could result in sanctions, lawsuits, delisting of our shares from The Nasdaq Global Select Market or other adverse consequences that would materially harm to our business.

***Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.***

We have incurred substantial losses during our history and do not expect to become profitable in the near future, and we may never achieve profitability. To the extent that we continue to generate taxable losses, unused losses will carry forward to offset a portion of future taxable income, if any, until such unused losses expire, if ever. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an "ownership change," generally defined as a greater than 50 percentage point change (by value) in its equity ownership by certain stockholders over a three-year period, the corporation's ability to use its pre-change net operating loss carryforwards, or NOLs, and other pre-change tax attributes (such as research and development tax credits) to offset its post- change income or taxes may be limited. We may have experienced ownership changes prior to December 31, 2019 and may experience ownership changes in the future as a result of subsequent shifts in our stock ownership (some of which shifts are outside our control). As a result, if we earn net taxable income, our ability to use our pre-change NOLs to offset such taxable income could be subject to limitations. Similar provisions of state tax law may also apply. As a result, even if we attain profitability, we may be unable to use a material portion of our NOLs and other tax attributes. Additionally, the Tax Act, which was enacted on December 22, 2017, significantly reforms the Code, including changes to the rules governing net operating loss carryforwards arising in tax years ending after December 31, 2017. For net operating loss carryforwards, the Tax Act limits a taxpayer's ability to utilize such carryforwards to 80% of taxable income. In addition, net operating loss carryforwards arising in tax years ending after December 31, 2017 can be carried forward indefinitely, but carryback is generally prohibited. Net operating loss carryforwards generated by us before January 1, 2018 will not be subject to the taxable income limitation and will continue to have a twenty- year carryforward period. However, the changes in the carryforward and carryback periods as well as the new limitation on use of net operating losses may significantly impact our ability to use net operating loss carryforwards generated after December 31, 2017, as well as the timing of any such use, and could adversely affect our results of operations.

***Provisions in our charter documents and under Delaware law could discourage a takeover that stockholders may consider favorable and may lead to entrenchment of management.***

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could delay or prevent changes in control or changes in our management without the consent of our board of directors. These provisions include the following:

- a classified board of directors with three-year staggered terms, which may delay the ability of stockholders to change the membership of a majority of our board of directors;
- no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of the board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors;
- the ability of our board of directors to authorize the issuance of shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquiror;

- the ability of our board of directors to alter our amended and restated bylaws without obtaining stockholder approval;

- the required approval of at least 66 2/3% of the shares entitled to vote at an election of directors to adopt, amend or repeal our amended and restated bylaws or repeal the provisions of our amended and restated certificate of incorporation regarding the election and removal of directors;

- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;

- the requirement that a special meeting of stockholders may be called only by the chief executive officer or the president or the board of directors, which may delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors; and

- advance notice procedures that stockholders must comply with in order to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquiror from conducting a solicitation of proxies to elect the acquiror's own slate of directors or otherwise attempting to obtain control of us.

We are also subject to the anti-takeover provisions contained in Section 203 of the Delaware General Corporation Law. Under Section 203, a corporation may not, in general, engage in a business combination with any holder of 15% or more of its capital stock unless the holder has held the stock for three years or, among other exceptions, the board of directors has approved the transaction.

***Claims for indemnification by our directors and officers may reduce our available funds to satisfy successful third-party claims against us and may reduce the amount of money available to us.***

Our amended and restated certificate of incorporation and amended and restated bylaws provide that we will indemnify our directors and officers, in each case to the fullest extent permitted by Delaware law.

In addition, as permitted by Section 145 of the Delaware General Corporation Law, our amended and restated bylaws and our indemnification agreements that we have entered into with our directors and officers provide that:

- We will indemnify our directors and officers for serving us in those capacities or for serving other business enterprises at our request, to the fullest extent permitted by Delaware law. Delaware law provides that a corporation may indemnify such person if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the registrant and, with respect to any criminal proceeding, had no reasonable cause to believe such person's conduct was unlawful.

- We may, in our discretion, indemnify employees and agents in those circumstances where indemnification is permitted by applicable law.

- We are required to advance expenses, as incurred, to our directors and officers in connection with defending a proceeding, except that such directors or officers shall undertake to repay such advances if it is ultimately determined that such person is not entitled to indemnification. We will not be obligated pursuant to our amended and restated bylaws to indemnify a person with respect to proceedings initiated by that person against us or our other indemnitees, except with respect to proceedings authorized by our board of directors or brought to enforce a right to indemnification.

- The rights conferred in our amended and restated bylaws are not exclusive, and we are authorized to enter into indemnification agreements with our directors, officers, employees and agents and to obtain insurance to indemnify such persons.

- We may not retroactively amend our amended and restated bylaw provisions to reduce our indemnification obligations to directors, officers, employees and agents.

***We do not currently intend to pay dividends on our common stock, and, consequently, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.***

We do not currently intend to pay any cash dividends on our common stock for the foreseeable future. We currently intend to invest our future earnings, if any, to fund our growth. Therefore, you are not likely to receive any dividends on your common stock for the foreseeable future. Since we do not intend to pay dividends, your ability to receive a return on your investment will depend on any future appreciation in the market value of our common stock. There is no guarantee that our common stock will appreciate or even maintain the price at which our holders have purchased it.

**Item 2. Unregistered Sales of Equity Securities and Use of Proceeds**

a) Sales of Unregistered Securities

There were no sales of unregistered securities during the six months ended June 30, 2020.

b) Use of Proceeds from our Initial Public Offering of Common Stock

On May 2, 2018, the U.S. Securities and Exchange Commission declared effective our registration statement on Form S-1 (File No. 333-224163), as amended, filed in connection with our initial public offering (IPO). There has been no material change in the planned use of proceeds from our IPO from that described in the related Prospectus.

c) Repurchase of Shares or of Company Equity Securities

None.

**Item 3. Default Upon Senior Securities**

None.

**Item 4. Mine Safety Disclosures**

Not applicable.

**Item 5. Other Information**

**Termination of Material Agreement**

On July 30, 2020, we notified Ascentage International of our intention to terminate our license agreement for its compound APG1252 due to our decision to prioritize the progression of other compounds from Ascentage International's library of Bcl-2 inhibitors, such as UBX1325 and UBX1967. Pursuant to its terms, the APG1252 license agreement and all amendments thereto will terminate ninety days from the date of such notice.

**Entry into Material Agreement**

On July 31, 2020, we entered into a sales agreement (the "July 2020 Sales Agreement") with Cowen and Company, LLC ("Cowen") to sell shares of the Company's common stock, from time to time, with aggregate gross sales proceeds of up to $50.0 million, through an at-the-market equity offering program under which Cowen will act as its sales agent (the "Agent"). The issuance and sale of shares of common stock by the Company pursuant to the July 2020 Sales Agreement are deemed an "at-the-market" offering under the Securities Act of 1933, as amended (the "Securities Act"). Cowen is entitled to compensation for its services equal to up to 3.0% of the gross proceeds of any shares of common stock sold through Cowen under the July 2020 Sales Agreement. In addition, the Company has agreed to reimburse a portion of the expenses of Cowen in connection with the offering up to a maximum of $0.1 million.

The July 2020 Sales Agreement contains customary representations and warranties of the parties and indemnification and contribution provisions under which we and the Agent have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act. We and the Agent have the right, by giving written notice as specified in the July 2020 Sales Agreement to terminate the July 2020 Sales Agreement.

The offering has been registered under the Securities Act pursuant to our shelf registration statement on Form S-3, as amended (No. 333-231893), as supplemented by the Prospectus Supplement dated July 31, 2020 relating to the sale of shares of our common stock.

The foregoing description of the July 2020 Sales Agreement is not complete and is qualified in its entirety by reference to the full text of such agreement, a copy of which was filed hereto as Exhibit 1.1 and is incorporated by reference herein.

A copy of the opinion of Latham & Watkins LLP relating to the validity of the securities to be issued pursuant to the July 2020 Sales Agreement is filed hereto as Exhibit 5.1.

**Item 6. Exhibits**

| Exhibit Number | Exhibit Description | Incorporated by Reference | | | Filed Herewith |
|---|---|---|---|---|---|
| | | Form | Date | Number | |
| 1.1 | Sales Agreement, dated July 31, 2020, by and between Unity Biotechnology, Inc. and Cowen and Company, LLC. | | | | X |
| 3.1 | Amended and Restated Certificate of Incorporation. | 8-K | 5/7/2018 | 3.1 | |
| 3.2 | Amended and Restated Bylaws. | 8-K | 5/7/2018 | 3.2 | |
| 4.1 | Reference is made to exhibits 3.1 through 3.2. | | | | |
| 4.2 | Form of Common Stock Certificate. | S-1/A | 4/23/2018 | 4.2 | |
| 4.3 | Amended and Restated Investors' Rights Agreement, dated as of March 15, 2018 by and among Unity Biotechnology, Inc. and the investors party thereto. | S-1 | 4/5/2018 | 4.3 | |
| 4.4 | Description of Unity's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934. | 10-K | 3/11/2020 | 4.4 | |
| 5.1 | Opinion of Latham & Watkins LLP. | | | | X |
| 10.1† | Third Amendment to Compound License Agreement for APG-1197, dated June 29, 2020, by and between Ascentage Pharma Group Corp. Ltd. And Unity Biotechnology, Inc. | 8-K | 7/1/2020 | 10.1 | |
| 23.1 | Consent of Latham & Watkins LLP (included in Exhibit 5.1) | | | | X |
| 31.1 | Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. | | | | X |
| 31.2 | Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. | | | | X |
| 32.1* | Certification by the Principal Executive Officer and Principal 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 | | | | X |
| 101.SCH | Inline XBRL Taxonomy Extension Schema Document | | | | X |
| 101.CAL | Inline XBRL Taxonomy Extension Calculation Linkbase Document | | | | X |
| 101.DEF | Inline XBRL Taxonomy Extension Definition Linkbase Document | | | | X |
| 101.LAB | Inline XBRL Taxonomy Extension Label Linkbase Document | | | | X |
| 101.PRE | Inline XBRL Taxonomy Extension Presentation Linkbase Document | | | | X |
| 104 | The cover page from the Company's Quarterly Report on Form 10-Q for the three months ended June 30, 2020, has been formatted in Inline XBRL. | | | | X |

* The certification attached as Exhibit 32.1 that accompanies this Quarterly Report on Form 10-Q is not deemed filed with the SEC and is not to be incorporated by reference into any filing of Unity Biotechnology, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Form 10-Q, irrespective of any general incorporation language contained in such filing.

# Indicates management contract or compensatory plan.

† Portions of the exhibit have been omitted pursuant to Regulation S-K, Item 601(b)(10). Such omitted information is not material and would likely cause competitive harm to the registrant if publicly disclosed.

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Unity Biotechnology, Inc.

Date: July 31, 2020

By: /s/ Anirvan Ghosh
Anirvan Ghosh, Ph.D.
Chief Executive Officer
(Principal Executive Officer)

Date: July 31, 2020

By: /s/ Robert C. Goeltz II
Robert C. Goeltz II
Chief Financial Officer
(Principal Financial Officer)

**UNITY BIOTECHNOLOGY, INC.**

**$50,000,000 SHARES OF**

**COMMON STOCK**

**SALES AGREEMENT**

July 31, 2020

Cowen and Company, LLC
599 Lexington Avenue
New York, NY 10022

Ladies and Gentlemen:

Unity Biotechnology, Inc., a Delaware corporation (the "**Company**"), confirms its agreement (this "**Agreement**") with Cowen and Company, LLC ("**Cowen**"), as follows:

1. Issuance and Sale of Shares. The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell to or through Cowen, acting as agent and/or principal, shares of the Company's common stock, par value $0.0001 per share (the "**Common Stock**"), having an aggregate offering price of up to $50,000,000 (the "**Placement Shares**"). Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitation set forth in this Section 1 on the number of shares of Common Stock issued and sold under this Agreement shall be the sole responsibility of the Company, and Cowen shall have no obligation in connection with such compliance. The issuance and sale of the Placement Shares through Cowen will be effected pursuant to the Registration Statement (as defined below) to be filed by the Company and after such Registration Statement has been declared effective by the Securities and Exchange Commission (the "**Commission**"), although nothing in this Agreement shall be construed as requiring the Company to use the Registration Statement (as defined below) to issue the Placement Shares.

The Company has filed in accordance with the provisions of the Securities Act of 1933, as amended, and the rules and regulations thereunder (collectively, the "**Securities Act**"), with the Commission a registration statement on Form S-3, including (a) a base prospectus, relating to certain securities, including Common Stock, to be issued from time to time by the Company, and which incorporates by reference documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder (collectively, the "**Exchange Act**") and (b) a prospectus supplement specifically relating to the Placement Shares (the "**Prospectus Supplement**") to the base prospectus included as part of such registration statement. As soon as practicable following the date that such registration statement is declared effective, the Company will furnish to Cowen, for use by Cowen, copies of the prospectus included as part of such registration statement, as supplemented by the Prospectus Supplement, relating to the Placement Shares. Except where the context otherwise requires, such registration statement, and any post-effective amendment thereto,

as amended when it became effective, including all documents filed as part thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act or deemed to be a part of such registration statement pursuant to Rule 430B or 462(b) of the Securities Act, or any subsequent registration statement on Form S-3 filed pursuant to Rule 415(a)(6) under the Securities Act by the Company with respect to the Shares, is herein called the "**Registration Statement.**" The base prospectus and the Prospectus Supplement, including all documents incorporated therein by reference, included in the Registration Statement, as the same may be supplemented by any additional prospectus supplement, in the form in which such prospectus and/or Prospectus Supplement have most recently been filed by the Company with the Commission, together with any "issuer free writing prospectus," as defined in Rule 433 under the Securities Act ("**Rule 433**"), relating to the Placement Shares that (i) is consented to by Cowen, hereinafter referred to as a "**Permitted Free Writing Prospectus**," (ii) is required to be filed with the Commission by the Company or (iii) is exempt from filing pursuant to Rule 433(d)(5)(i), in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company's records pursuant to Rule 433(g), is herein called the "**Prospectus**." Any reference herein to the Registration Statement, the Prospectus or any amendment or supplement thereto shall be deemed to refer to and include the documents incorporated by reference therein, including, unless the context otherwise requires, the documents, if any, filed as exhibits to such incorporated documents, and any reference herein to the terms "amend," "amendment" or "supplement" with respect to the Registration Statement or the Prospectus shall be deemed to refer to and include the filing after the execution hereof of any document with the Commission deemed to be incorporated by reference therein. For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include any copy filed with the Commission pursuant to the Electronic Data Gathering Analysis and Retrieval System or any successor thereto (collectively "**EDGAR**").

2. Placements. Each time that the Company wishes to issue and sell Placement Shares hereunder through Cowen, acting as agent (each, a "**Placement**"), it will notify Cowen by email notice (or other method mutually agreed to in writing by the parties) (a "**Placement Notice**") containing the parameters in accordance with which it desires such Placement Shares to be sold, which shall at a minimum include the number of Placement Shares to be issued, the time period during which sales are requested to be made, any limitation on the number of Placement Shares that may be sold in any one Trading Day (as defined in Section 3) and any minimum price below which sales may not be made, a form of which containing such minimum sales parameters necessary is attached hereto as **Schedule 1**. The Placement Notice shall originate from any of the individuals from the Company whose names are set forth on **Schedule 2** (with a copy to each of the other individuals from the Company listed on such schedule), and shall be addressed to each of the individuals from Cowen whose names are set forth on **Schedule 2**, as such **Schedule 2** may be amended in writing from time to time in accordance herewith. The Placement Notice shall be effective upon receipt by Cowen unless and until (i) in accordance with the notice requirements set forth in Section 4, Cowen declines to accept the terms contained therein for any reason, in its sole discretion, (ii) the entire amount of the Placement Shares have been sold, (iii) in accordance with the notice requirements set forth in Section 4, the Company suspends or terminates the Placement Notice for any reason in its sole discretion, (iv) the Company issues a subsequent Placement Notice with parameters superseding those on the earlier dated Placement Notice, or (v)

this Agreement has been terminated under the provisions of Section 11. The amount of any discount, commission or other compensation to be paid by the Company to Cowen in connection with the sale of the Placement Shares shall be calculated in accordance with the terms set forth in **Schedule 3.** It is expressly acknowledged and agreed that neither the Company nor Cowen will have any obligation whatsoever with respect to a Placement or any Placement Shares unless and until the Company delivers a Placement Notice to Cowen and Cowen does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control.

3. Sale of Placement Shares by Cowen. (a) Subject to the terms and conditions herein set forth, upon the Company's delivery of a Placement Notice, and unless the sale of the Placement Shares described therein has been declined, suspended, or otherwise terminated in accordance with the terms of this Agreement, Cowen, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the Nasdaq Global Select Market, Inc. ("**Nasdaq**") to sell such Placement Shares up to the amount specified in such Placement Notice, and otherwise in accordance with the terms of such Placement Notice. Cowen will provide written confirmation to the Company (including by email correspondence to each of the individuals of the Company whose names are set forth on **Schedule 2**, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) no later than the opening of the Trading Day (as defined below) immediately following the Trading Day on which it has made sales of Placement Shares hereunder setting forth the number of Placement Shares sold on such day, the volume-weighted average price of the Placement Shares sold, and the Net Proceeds (as defined below) payable to the Company. In the event the Company engages Cowen for a sale of Shares in a Placement that would constitute a "block" within the meaning of Rule 10b-18(a)(5) under the Exchange Act (a "**Block Sale**"), the Company will provide Cowen, at Cowen's request and upon reasonable advance notice to the Company, on or prior to the Settlement Date, the opinions of counsel, accountant's letter and officers' certificates set forth in **Section 8** hereof, each dated the Settlement Date, and such other documents and information as Cowen shall reasonably request. Subject to the terms of a Placement Notice, Cowen may sell Placement Shares by any method permitted by law deemed to be an "at the market" offering as defined in Rule 415 of the Securities Act, including without limitation sales made through Nasdaq or on any other existing trading market for the Common Stock. Cowen may sell Placement Shares in negotiated transactions only if expressly authorized by the Company in a Placement Notice. Cowen shall not purchase Placement Shares for its own account as principal unless expressly authorized to do so by the Company in a Placement Notice. The Company acknowledges and agrees that (i) there can be no assurance that Cowen will be successful in selling Placement Shares, and (ii) Cowen will incur no liability or obligation to the Company or any other person or entity if it does not sell Placement Shares for any reason other than a failure by Cowen to use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such Placement Shares as required under this Section 3. For the purposes hereof, "**Trading Day**" means any day on which the Company's Common Stock is purchased and sold on the principal market on which the Common Stock is listed or quoted.

(b) Notwithstanding any other provision of this Agreement, the Company shall not offer, sell or deliver, or request the offer or sale, of any Shares pursuant to this Agreement and, by notice

to Cowen given by telephone (confirmed promptly by email), shall cancel any instructions for the offer or sale of any Shares, and Cowen shall not be obligated to offer or sell any Shares, (i) during any period in which the Company is, or could be deemed to be, in possession of material non-public information, or (ii) at any time from and including the date on which the Company shall issue a press release containing, or shall otherwise publicly announce, its earnings, revenues or other results of operations (an "**Earnings Announcement**") through and including the time that the Company files a Quarterly Report on Form 10-Q or an Annual Report on Form 10-K that includes consolidated financial statements as of and for the same period or periods, as the case may be, covered by such Earnings Announcement.

4. Suspension of Sales.

(a) The Company or Cowen may, upon notice to the other party in writing (including by email correspondence to each of the individuals of the other party whose names are set forth on **Schedule 2**, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by verifiable facsimile transmission or email correspondence to each of the individuals of the other party whose names are set forth on **Schedule 2**), suspend any sale of Placement Shares; *provided, however*, that such suspension shall not affect or impair either party's obligations with respect to any Placement Shares sold hereunder prior to the receipt of such notice. While a suspension is in effect any obligation under Sections 7(m), 7(n), and 7(o) with respect to the delivery of certificates, opinions, or comfort letters to Cowen, shall be waived, *provided*, *however*, that the Company shall deliver such certificates, opinions and comfort letters if such suspension is revoked prior to the next occurring Bring-Down Date. Each of the parties agrees that no such notice under this Section 4 shall be effective against the other unless it is made to one of the individuals named on **Schedule 2** hereto, as such schedule may be amended in writing from time to time.

(b) If either Cowen or the Company has reason to believe that the exemptive provisions set forth in Rule 101(c)(1) of Regulation M under the Exchange Act are not satisfied with respect to the Common Stock, it shall promptly notify the other party, and Cowen may, at its sole discretion, suspend sales of the Placement Shares under this Agreement.

5. Settlement.

(a) Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice, settlement for sales of Placement Shares will occur on the second (2nd) Trading Day (or such earlier day as is industry practice for regular-way trading) following the date on which such sales are made (each, a "**Settlement Date**" and the first such settlement date, the "**First Delivery Date**"). The amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the "**Net Proceeds**") will be equal to the aggregate sales price received by Cowen at which such Placement Shares were sold, after deduction for (i) Cowen's commission, discount or other compensation for such sales payable by the Company pursuant to Section 2 hereof, (ii) any other amounts, if any, due and payable by the Company to Cowen hereunder pursuant to Section 7(g) (Expenses) hereof, and (iii) any transaction fees imposed by any governmental or self-regulatory organization in respect of such sales.

(b) Delivery of Placement Shares. On or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Placement Shares being sold by crediting Cowen's or its designee's account (provided Cowen shall have given the Company written notice of such designee prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian System or by such other means of delivery as may be mutually agreed upon by the parties hereto which in all cases shall be freely tradeable, transferable, registered shares in good deliverable form. On each Settlement Date, Cowen will deliver the related Net Proceeds in same day funds to an account designated by the Company on, or prior to, the Settlement Date. Cowen will be responsible for providing DWAC instructions or instructions for delivery by other means with regard to the transfer of the Placement Shares being sold. The Company agrees that if the Company, or its transfer agent (if applicable), defaults in its obligation to deliver duly authorized Placement Shares on a Settlement Date (other than as a result of a failure by Cowen to provide instructions for delivery), the Company agrees that in addition to and in no way limiting the rights and obligations set forth in Section 9(a) (Indemnification and Contribution) hereto, it will (i) hold Cowen harmless against any loss, claim, damage, or reasonable and documented expense (including reasonable and documented legal fees and expenses), as incurred, arising out of or in connection with such default by the Company and (ii) pay to Cowen (without duplication) any commission, discount, or other compensation to which it would otherwise have been entitled absent such default.

6. Representations and Warranties of the Company. Except as disclosed in the Registration Statement or the Prospectus, the Company represents and warrants to, and agrees with, Cowen that, unless such representation, warranty or agreement specifies otherwise, as of (i) the date of this Agreement, (ii) each Bring-Down Date (as defined below), (iii) the date on which a Placement Notice is given, and (iv) any date on which Placement Shares are sold hereunder:

(a) Compliance with Registration Requirements. Prior to the issuance of any Placement Notice by the Company, the Registration Statement will have been filed and declared effective by the Commission under the Securities Act, and any required Rule 462(b) Registration Statement will have become effective under the Securities Act. The Company has complied to the Commission's satisfaction with all requests of the Commission for additional or supplemental information related to the Registration Statement and the Prospectus. No stop order suspending the effectiveness of the Registration Statement or any Rule 462(b) Registration Statement is in effect and no proceedings for such purpose have been instituted or are pending or, to the knowledge of the Company, contemplated or threatened by the Commission. The Company meets the requirements for use of Form S-3 under the Securities Act. The proposed offering of the Placement Shares hereunder meets the requirements of General Instruction I.B.1 of Form S-3.

(b) No Misstatement or Omission. The Prospectus when filed complied or will comply and, as amended or supplemented, if applicable, will comply in all material respects with the Securities Act. Each of the Registration Statement, any Rule 462(b) Registration Statement, and any post-effective amendments or supplements thereto, at the time it becomes effective and as of each Settlement Date, if any, complied and will comply in all material respects with the Securities Act and will not and, as of each Settlement Date, if any, did not and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Prospectus, as amended or supplemented, as of its date and as of each Settlement Date, if any, will not contain any untrue statement of a material

fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The representations and warranties set forth in the two immediately preceding sentences do not apply to statements in or omissions from the Registration Statement, any Rule 462(b) Registration Statement, or any post-effective amendment thereto, or the Prospectus, or any amendments or supplements thereto, made in reliance upon and in conformity with information relating to Agent's Information (defined below). There are no contracts or other documents required to be described in the Prospectus or to be filed as exhibits to the Registration Statement which have not been described or filed as required.

(c) Offering Materials Furnished to Cowen. The Company has delivered to Cowen one complete copy of the Registration Statement and a copy of each consent and certificate of experts filed as a part thereof, and conformed copies of the Registration Statement (without exhibits) and the Prospectus, as amended or supplemented, in such quantities and at such places as Cowen has reasonably requested. The Registration Statement, the Prospectus and any Permitted Free Writing Prospectus (to the extent any such Permitted Free Writing Prospectus was required to be filed with the Commission) delivered to Cowen for use in connection with the public offering of the Shares contemplated herein have been and will be identical to the versions of such documents transmitted to the Commission for filing via EDGAR, except to the extent permitted by Regulation S-T.

(d) Emerging Growth Company. The Company is an "emerging growth company," as defined in Section 2(a) of the Securities Act. The Company agrees to notify Cowen promptly upon the Company ceasing to be an emerging growth company.

(e) Not an Ineligible Issuer. The Company currently is not an "ineligible issuer," as defined in Rule 405 under the Securities Act. The Company agrees to notify Cowen promptly upon the Company becoming an "ineligible issuer."

(f) Distribution of Offering Material by the Company. The Company has not distributed and will not distribute, prior to the completion of Cowen's distribution of the Placement Shares, any offering material in connection with the offering and sale of the Placement Shares other than the Prospectus or the Registration Statement.

(g) The Sales Agreement. This Agreement has been duly authorized, executed and delivered by the Company.

(h) Due Authorization. The Company has all requisite rights, power and authority to execute and deliver this Agreement and to perform its obligations hereunder; and all action required to be taken for the due and proper authorization, execution and delivery by it of this Agreement and the consummation by it of the transactions contemplated hereby has been or will be duly and validly taken.

(i) Authorization of the Common Stock. The Placement Shares, when issued and delivered, will be duly authorized for issuance and sale pursuant to this Agreement and, when issued and delivered by the Company against payment therefor pursuant to this Agreement, will be duly authorized, validly issued, fully paid and nonassessable, free and clear of any pledge, lien, encumbrance, security interest or other claim, and the issuance and sale of the Shares by the Company is not subject to preemptive or other similar rights arising by operation of law, under the

organizational documents of the Company or under any agreement to which the Company or any subsidiary is a party or otherwise.

(j) No Applicable Registration or Other Similar Rights. Except as described in or expressly contemplated by the Registration Statement and the Prospectus, there are no contracts, agreements or understandings between the Company and any person granting such person the right to require the Company to register any securities for sale under the Securities Act by reason of the filing of the Registration Statement with the Commission or the issuance and sale of the Placement Shares, except such rights that have been waived.

(k) No Material Adverse Change. The Company has not, since the date of the latest unaudited interim financial statements included in the Prospectus, (i) sustained any material loss or interference with its business from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor dispute or court or governmental action, order or decree or (ii) entered into any transaction or agreement (whether or not in the ordinary course of business) that is material to the Company or incurred any liability or obligation, direct or contingent, that is material to the Company, in each case, other than as set forth or contemplated in the Prospectus; and, since the respective dates as of which information is given in the Registration Statement and the Prospectus, there has not been (A) any change in the capital stock (other than as a result of (i) the exercise, if any, of stock options or the award, if any, of stock options or restricted stock in the ordinary course of business pursuant to the Company's equity plans that are described in the Prospectus, or (ii) the issuance, if any, of stock upon conversion of Company securities as described in the Prospectus) or long-term debt of the Company or (B) any Material Adverse Change (as defined below); as used in this Agreement, "**Material Adverse Change**" shall mean any material adverse change or effect, or any development involving a prospective material adverse change or effect, in or affecting (i) the business, prospects, properties, general affairs, management, financial position, stockholders' equity or results of operations of the Company, except as set forth or contemplated in the Prospectus, or (ii) the ability of the Company to perform its obligations under this Agreement, including the issuance and sale of the Placement Shares.

(l) Independent Accountants. Ernst & Young LLP, who have certified certain financial statements of the Company, is an independent registered public accounting firm as required by the Securities Act and the rules and regulations of the Commission thereunder.

(m) Preparation of the Financial Statements. The financial statements included in the Registration Statement and the Prospectus, together with the related schedules and notes, present fairly in all material respects the financial position of the Company at the dates indicated and the statement of operations, stockholders' equity and cash flows of the Company for the periods specified; except as otherwise stated in the Registration Statement and the Prospectus, such financial statements have been prepared in conformity with U.S. generally accepted accounting principles ("**GAAP**") applied on a consistent basis throughout the periods covered thereby, except in the case of unaudited financial statements, which are subject to normal year-end adjustments and do not contain certain footnotes as permitted by the applicable rules of the Commission. The supporting schedules, if any, included in the Registration Statement and the Prospectus present fairly in all material respects the information required to be stated therein. The other financial information included in the Registration Statement and the Prospectus present fairly in all material respects the information shown thereby. Except as included therein, no financial statements or

supporting schedules are required to be included in the Registration Statement or the Prospectus under the Securities Act or the rules and regulations promulgated thereunder.

(n) eXtensible Business Reporting Language. The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement fairly presents the information called for in all material respects and has been prepared in accordance with the Commission's rules and guidelines applicable thereto.

(o) Incorporation and Good Standing of the Company. The Company has been (i) duly organized and is validly existing and in good standing under the laws of its jurisdiction of organization, with power and authority (corporate and other) to own and/or lease its properties and conduct its business as described in the Prospectus, and (ii) duly qualified as a foreign corporation for the transaction of business and is in good standing under the laws of each other jurisdiction in which it owns or leases properties or conducts any business so as to require such qualification, except, in the case of this clause (ii), where the failure to be so qualified or in good standing would not, individually or in the aggregate, result in a Material Adverse Change.

(p) Capital Stock Matters. The statements set forth in the Prospectus under the caption "Description of Capital Stock," insofar as they purport to constitute a summary of the terms of the Common Stock, are accurate, complete and fair in all material respects. The Company has an authorized capitalization as set forth in the Prospectus and all of the issued shares of capital stock of the Company have been duly and validly authorized and issued and are fully paid and non-assessable and conform to the description of the Common Stock contained in the Prospectus.

(q) Non-Contravention of Existing Instruments; No Further Authorizations or Approvals Required. The issue and sale of the Placement Shares and the compliance by the Company with this Agreement and the consummation of the transactions contemplated in this Agreement and the Prospectus will not conflict with or result in a breach or violation of any of the terms or provisions of, or constitute a default under, (i) any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company is a party or by which the Company is bound or to which any of the property or assets of the Company is subject, (ii) the certificate of incorporation or by-laws (or other applicable organizational document) of the Company, or (iii) any statute or any judgment, order, rule or regulation of any court or governmental agency or body having jurisdiction over the Company or any of its properties, except, in the case of clauses (i) or (iii), for such defaults, breaches, or violations that would not, individually or in the aggregate, result in a Material Adverse Change; and no consent, approval, authorization, order, registration or qualification of or with any such court or governmental agency or body is required for the issue and sale of the Placement Shares or the consummation by the Company of the transactions contemplated by this Agreement, except such as have been obtained under the Securities Act, the approval by the Financial Industry Regulatory Authority ("**FINRA**") of the underwriting terms and arrangements and such consents, approvals, authorizations, registrations or qualifications as may be required under state securities or Blue Sky laws in connection with the purchase and distribution of the Placement Shares by Cowen.

(r) No Violation or Default. The Company is not (i) in violation of its certificate of incorporation or by-laws (or other applicable organizational document), (ii) in violation of any statute or any judgment, order, rule or regulation of any court or governmental agency or body

having jurisdiction over the Company or any of its properties, or (iii) in default in the performance or observance of any obligation, agreement, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement, lease or other agreement or instrument to which it is a party or by which it or any of its properties may be bound, except, in the case of the foregoing clauses (ii) and (iii), for such defaults as would not, individually or in the aggregate, result in a Material Adverse Change.

(s) No Material Actions or Proceedings. Other than as set forth in the Prospectus, there are no legal or governmental proceedings pending to which the Company is a party or of which any property of the Company is the subject which, if determined adversely to the Company (or such officer or director), would, individually or in the aggregate, result in a Material Adverse Change; and, to the Company's knowledge, no such proceedings are threatened or contemplated by governmental authorities or others.

(t) All Necessary Permits, etc. The Company possesses all licenses, sub-licenses, certificates, permits and other authorizations issued by, and have made all declarations and filings with, the appropriate federal, state, local or foreign governmental or regulatory authorities that are necessary for the ownership or lease of its property or the conduct of its businesses as currently conducted and described in the Registration Statement and the Prospectus, including, without limitation, from the U.S. Food and Drug Administration ("**FDA**") except where the failure to possess or make the same would not, individually or in the aggregate, result in a Material Adverse Change; and except as described in the Registration Statement and the Prospectus, the Company has not received notice of any revocation or modification of any material license, sub-license, certificate, permit or authorization or has any reason to believe that any material license, sub-license, certificate, permit or authorization will not be renewed in the ordinary course.

(u) Tax Law Compliance. The Company has filed all federal, state and local tax returns required to be filed through the date of this Agreement or have requested extensions thereof (except where the failure to file would not, individually or in the aggregate, result in a Material Adverse Change) and have paid all material taxes required to be paid thereon (except for cases in which the failure to pay would not result in a Material Adverse Change, or, except as currently being contested in good faith and for which reserves required by U.S. GAAP have been created in the financial statements of the Company), and no tax deficiency has been determined adversely to the Company which has resulted in (nor does the Company have any notice or knowledge of any tax deficiency which could reasonably be expected to be determined adversely to the Company and which could reasonably be expected to result in) a Material Adverse Change.

(v) Company Not an "Investment Company." The Company is not and, after giving effect to the offering and sale of the Placement Shares and the application of the proceeds thereof, will not be an "investment company," as such term is defined in the Investment Company Act of 1940, as amended (the "**Investment Company Act**").

(w) Insurance. Except as described in or expressly contemplated by the Registration Statement and the Prospectus, the Company has insurance covering its property, operations, personnel and businesses, including clinical trial insurance and business interruption insurance, which insurance is in amounts and insures against such losses and risks as are generally maintained by similarly situated companies and which the Company believes are reasonably adequate to

protect the Company and its business; and the Company has not (i) received written notice from any insurer or agent of such insurer that capital improvements or other expenditures are required or necessary to be made in order to continue such insurance or (ii) any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage at reasonable cost from similar insurers as may be necessary to continue its business.

(x) No Price Stabilization or Manipulation. The Company has not taken and will not take, directly or indirectly (without giving effect to activities by Cowen), any action designed to or that might be reasonably expected to cause or result in stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Placement Shares.

(y) Exchange Act Compliance. The documents incorporated or deemed to be incorporated by reference in the Prospectus, at the time they were or hereafter are filed with the Commission, complied and will comply in all material respects with the requirements of the Exchange Act, and, when read together with the other information in the Prospectus, at each Settlement Date, will not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(z) No Unlawful Contributions or Other Payments. (A) None of the Company or any of its directors or officers, nor, to the knowledge of the Company, any agent, employee, affiliate or other person associated with or acting on behalf of the Company (i) has made, offered, promised or authorized any unlawful contribution, gift, entertainment or other unlawful expense; (ii) has made, offered, promised or authorized any direct or indirect unlawful payment; or (iii) has violated or is in violation of any provision of the Foreign Corrupt Practices Act of 1977, the Bribery Act 2010 of the United Kingdom or any other applicable anti-bribery or anti-corruption law; (B) the Company and its affiliates have conducted their businesses in compliance with applicable anti-corruption laws and have instituted and maintain policies and procedures designed to promote and achieve compliance with such laws and with the representation and warranty contained herein; and (C) the Company will not use, directly or indirectly, the proceeds of the offering and sale of the Placement Shares in furtherance of an offer, payment, promise to pay or authorization of the payment or giving of money, or anything else of value, to any person in violation of any applicable anti-corruption laws.

(aa) Compliance with Anti-Money Laundering Laws. The operations of the Company are and have been conducted at all times in compliance with the requirements of applicable anti-money laundering laws, including, but not limited to, the Bank Secrecy Act of 1970, as amended by the USA PATRIOT ACT of 2001, and the rules and regulations promulgated thereunder, and the anti-money laundering laws of the various jurisdictions in which the Company conducts business (collectively, the "**Anti-Money Laundering Laws**") and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company with respect to the Anti-Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(bb) Compliance with OFAC.

(i) None of the Company or any of its directors or officers, nor, to the knowledge of the Company, any agent, employee or affiliate of the Company is, or is owned or controlled by one or more individual or entity that is, (A) currently the subject or the target of any sanctions administered or enforced by the U.S. Government, including, without limitation, the Office of Foreign Assets Control of the U.S. Department of the Treasury ("**OFAC**"), or the U.S. Department of State and including, without limitation, the designation as a "specially designated national" or "blocked person," the European Union, Her Majesty's Treasury, the United Nations Security Council, or other relevant sanctions authority (collectively, "**Sanctions**"), nor (B) located, organized or resident in a country or territory that is the subject of Sanctions (including, without limitation, Crimea, Cuba, Iran, North Korea and Syria).

(ii) The Company will not directly or indirectly use the proceeds of the offering of the Placement Shares hereunder, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity (A) to fund or facilitate any activities of or business with any person, or in any country or territory, that, at the time of such funding, is the subject or the target of Sanctions or (B) in any other manner that will result in a violation by any person (including any person participating in the transaction, whether as sales agent, advisor, investor or otherwise) of Sanctions.

(iii) For the past five (5) years, the Company has not knowingly engaged in and are not now knowingly engaged in any dealings or transactions with any person, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

(cc) Company's Accounting System. The Company maintains a system of internal control over financial reporting (as such term is defined in Rule 13a-15(f) under the Exchange Act) that (i) complies with the requirements of the Exchange Act applicable to the Company, (ii) has been designed by the Company's principal executive officer and principal financial officer, or under their supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. GAAP and (iii) is sufficient to provide reasonable assurance that (A) transactions are executed in accordance with management's general or specific authorization, (B) transactions are recorded as necessary to permit preparation of financial statements in conformity with U.S. GAAP and to maintain accountability for assets, (C) access to assets is permitted only in accordance with management's general or specific authorization and (D) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company is not aware of any material weaknesses in its internal control over financial reporting (it being understood that this subsection shall not require the Company to comply with Section 404 of the Sarbanes Oxley Act of 2002 as of an earlier date than it would otherwise be required to so comply under applicable law). Since the date of the latest audited financial statements included in the Prospectus, there has been no change in the Company's

internal control over financial reporting that has materially and adversely affected, or is reasonably likely to materially and adversely affect, the Company's internal control over financial reporting.

(dd) Disclosure Controls. The Company maintains disclosure controls and procedures (as such term is defined in Rule 13a-15(e) under the Exchange Act) that comply with the requirements of the Exchange Act as applicable to the Company; such disclosure controls and procedures have been designed to ensure that material information relating to the Company is made known to the Company's principal executive officer and principal financial officer by others within those entities; and such disclosure controls and procedures are effective.

(ee) Compliance with Environmental Laws. (i) The Company (A) is in material compliance with all, and has not violated any, applicable material federal, state or local laws, rules, regulations, requirements, decisions, judgments, decrees and orders relating to pollution, hazardous or toxic substances, wastes, pollutants, contaminants or the protection of human health or safety, the environment or natural resources (collectively, "**Environmental Laws**"); (B) has received and is in material compliance with all, and has not violated any, material permits, licenses, certificates or other authorizations or approvals required of it under any Environmental Laws to conduct its business; and (C) has not received notice of any actual or potential liability of the Company, or obligation of the Company under or relating to, or any actual or potential violation of, any Environmental Laws by the Company, including for the investigation or remediation of any disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants, and have no knowledge of any event or condition that would reasonably be expected to result in any such notice, and (ii) there are no costs or liabilities associated with Environmental Laws of or relating to the Company, except in the case of each of (i) and (ii) above, for any such matter as would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Change; and (iii) except as described in the Prospectus, (A) there is no proceeding that is pending, or that is known by the Company to be contemplated, against the Company under any Environmental Laws in which a governmental entity is also a party, other than such proceeding regarding which the Company reasonably believes no monetary sanctions of $100,000 or more will be imposed, and (B) the Company is not aware of any facts regarding compliance with Environmental Laws, or liabilities or other obligations under Environmental Laws or concerning hazardous or toxic substances or wastes, pollutants or contaminants, that individually or in the aggregate, would reasonably be expected to result in a Material Adverse Change.

(ff) Intellectual Property. Except as described in the Registration Statement and the Prospectus, the Company owns or possesses sufficient rights to use all patents, patent applications, trademarks, service marks, trade names, trademark registrations, service mark registrations, domain names and other source indicators, copyrights and copyrightable works, know-how, trade secrets, systems, procedures, proprietary or confidential information (collectively, "**Intellectual Property**") material to the conduct of its business as presently conducted or currently proposed to be conducted in the Registration Statement and the Prospectus. Except as described in the Registration Statement and the Prospectus, the Company has not, to its knowledge, materially infringed, misappropriated or otherwise violated any enforceable Intellectual Property of any person, and to the knowledge of the Company, neither the manufacture of, nor the use or sale of, any of the product candidates described in the Registration Statement and the Prospectus would infringe, misappropriate or otherwise violate the known, valid and enforceable Intellectual Property of any person. Except as would not, if determined adversely to the Company, individually

or in the aggregate, result in a Material Adverse Change, or except as described in the Registration Statement and the Prospectus, there is no pending or, to the knowledge of the Company, threatened action, suit, proceeding or claim (i) challenging the Company's rights in or to, or alleging the violation of any of the terms of, any of its Intellectual Property; (ii) alleging that the Company has infringed, misappropriated or otherwise violated or conflicted with any Intellectual Property of any third party; or (iii) challenging the validity, scope or enforceability of any Intellectual Property owned by or exclusively or co-exclusively licensed to the Company, and, in the case of each of clause (i), (ii) and (iii) above, the Company is not aware of any facts that would form a reasonable basis for any such action, suit, proceeding or claim. Except as would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Change, (w) all material Intellectual Property owned or licensed by the Company is, to the knowledge of the Company, is valid and enforceable, solely owned, licensed or co-licensed by the Company, owned free and clear of all liens, encumbrances, defects and other restrictions, and (x) to the knowledge of the Company, no third party has infringed, misappropriated or otherwise violated any Intellectual Property owned by or exclusively or co-exclusively licensed to the Company. The Company has at all times taken reasonable steps to maintain the confidentiality of all material Intellectual Property the value of which to the Company is contingent upon maintaining the confidentiality thereof. All parties involved in the development of material Intellectual Property for the Company have signed confidentiality and invention assignment agreements with the Company, pursuant to which the Company either (y) has obtained ownership of and is the exclusive owner of such material Intellectual Property, or (z) has obtained a valid right to exploit such material Intellectual Property, sufficient for the conduct of its business as currently conducted and as proposed in the Registration Statement and the Prospectus to be conducted.

(gg) Listing. The Company is subject to and in compliance in all material respects with the reporting requirements of Section 13 or Section 15(d) of the Exchange Act. The Common Stock is registered pursuant to Section 12(b) or Section 12(g) of the Exchange Act and is listed on Nasdaq, and the Company has taken no action designed to, or reasonably likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act or delisting the Common Stock from Nasdaq, nor has the Company received any notification that the Commission or Nasdaq is contemplating terminating such registration or listing. Prior to the date of the first Placement Notice, all of the Shares that have been or may be sold under this Agreement have been approved for listing on the Nasdaq, subject to official notice of issuance.

(hh) Brokers. The Company is not a party to any contract, agreement or understanding with any person (other than this Agreement) that would give rise to a valid claim against the Company or Cowen for a brokerage commission, finder's fee or like payment in connection with the offering and sale of the Placement Shares.

(ii) No Outstanding Loans or Other Indebtedness. Except as described in the Prospectus, there are no outstanding loans, advances (except normal advances for business expenses in the ordinary course of business) or guarantees or indebtedness by the Company to or for the benefit of any of the officers or directors of the Company.

(jj) No Reliance. The Company has not relied upon Cowen or legal counsel for Cowen for any legal, tax or accounting advice in connection with the offering and sale of the Placement Shares.

(kk) Privacy Laws. To the knowledge of the Company, the Company is, and at all prior times has been, in material compliance with all data privacy and security laws and regulations to the extent applicable to the Company's business operations, including, without limitation, to the extent so applicable, the Health Insurance Portability and Accountability Act ("**HIPAA**"), as amended by the Health Information Technology for Economic and Clinical Health Act (the "**HITECH Act**") (42 U.S.C. Section 17921 et seq.), and the European Union General Data Protection Regulation ("**GDPR**") (EU 2016/679) (collectively, "**Privacy Laws**"). To the extent required by applicable Privacy Laws, the Company has in place and complies in all material respects with its policies and procedures relating to data privacy and security and the collection, storage, use, disclosure, handling and analysis of Personal Data (the "**Policies**"). "**Personal Data**" means (i) Protected Health Information as defined by HIPAA; (ii) "personal data" as defined by GDPR; and (iii) any other piece of information that allows the identification of a natural person protected by applicable Privacy Laws. The Company (i) has not received notice of any actual or potential liability under or relating to, or actual or potential violation of, any of the Privacy Laws or Policies, and has no knowledge of any event or condition that would reasonably be expected to result in any such notice; and (ii) is not a party to any order, decree or agreement that imposed any obligation or liability under any Privacy Law or Policy.

(ll) IT Systems. (i)(x) To the knowledge of the Company, there has been no security breach or attack or other compromise of or relating to any of the Company's information technology and computer systems, networks, hardware, software, data (including the data of the Company's customers, employees, suppliers, vendors and any third party data maintained by or on behalf of the Company), equipment or technology ("**IT Systems and Data**"), and (y) the Company has not been notified of, and has no knowledge of any event or condition that would reasonably be expected to result in any security breach, attack or compromise to its IT Systems and Data, (ii) the Company has complied in all material respects, and is presently in compliance in all material respects with, all applicable laws, statutes or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority and all industry guidelines, standards, internal policies and contractual obligations relating to the security of IT Systems and Data and to the protection of such IT Systems and Data from unauthorized use, access, misappropriation or modification and (iii) the Company has implemented backup and disaster recovery technology consistent with industry standards and practice.

(mm) No Ownership of Real Property. The Company does not own any real property. The Company has good and marketable title to all personal property owned by it, in each case free and clear of all liens, encumbrances and defects except such as are described in the Prospectus or such as do not materially affect the value of such property and do not interfere with the use made and proposed to be made of such property by the Company; and any real property and buildings held under lease by the Company are, to the Company's knowledge, held by the Company under valid, subsisting and enforceable leases with such exceptions as are not material and do not materially interfere with the use made and proposed to be made of such property and buildings by the Company.

(nn) FDA Compliance. The Company has operated and currently is in compliance with all applicable rules, regulations and policies of the FDA, except where the failure to so operate or be in compliance would not reasonably be expected to result in a Material Adverse Change.

(oo) Preclinical and Clinical Trials. The preclinical and clinical trials conducted by the Company and, to the knowledge of the Company, the preclinical and clinical trials conducted on behalf of the Company or in which the Company has participated, were, and if still pending are, being conducted in accordance with experimental protocols, procedures and controls pursuant to accepted professional scientific standards and all applicable rules, regulations and policies, including those of the FDA and comparable regulatory agencies outside of the United States, to which the Company is subject and current Good Clinical Practices and Good Laboratory Practices, except where the failure to be so conducted would not reasonably be expected to result in a Material Adverse Change; the descriptions of the results of such trials contained in the Registration Statement and the Prospectus are, to the Company's knowledge, accurate and complete in all material respects and fairly present the data derived from such studies and trials; except to the extent disclosed in the Registration Statement and the Prospectus, the Company is not aware of any studies or trials, the results of which the Company believes reasonably call into question the study, test, or trial results described or referred to in the Registration Statement and the Prospectus when viewed in the context in which such results are described and the clinical state of development; and, except to the extent disclosed in the Registration Statement or the Prospectus, the Company has not received any notices or correspondence from the FDA or any other comparable federal, state, local or foreign governmental or regulatory authority requiring the termination or suspension of any preclinical or clinical trials conducted by or on behalf of the Company.

(pp) No Material Labor Disputes. No material labor disturbance by or dispute with employees of the Company exists or, to the knowledge of the Company, is contemplated or threatened, and the Company is not aware of any existing or imminent labor disturbance by, or dispute with, the employees of any of its principal suppliers, contractors or customers, except as would not result in a Material Adverse Change. The Company has not received any notice of cancellation or termination with respect to any collective bargaining agreement material to the Company.

(qq) Subsidiaries. The Company has no subsidiaries.

(rr) Export and Import Laws. Each of the Company and its subsidiaries, and, to the Company's knowledge, each of their affiliates and any director, officer, agent or employee of, or other person associated with or acting on behalf of, the Company has acted at all times in compliance with applicable Export and Import Laws (as defined below) and there are no claims, complaints, charges, investigations or proceedings pending or expected or, to the knowledge of the Company, threatened between the Company or any of its subsidiaries and any Governmental Authority under any Export or Import Laws. The term "**Export and Import Laws**" means the Arms Export Control Act, the International Traffic in Arms Regulations, the Export Administration Act of 1979, as amended, the Export Administration Regulations, and all other laws and regulations of the United States government regulating the provision of services to non-U.S. parties or the export and import of articles or information from and to the United States of America, and all similar laws and regulations of any foreign government regulating the provision of services to parties not of the foreign country or the export and import of articles and information from and to the foreign country to parties not of the foreign country.

Any certificate signed by an officer of the Company and delivered to Cowen or to counsel for Cowen pursuant to or in connection with this Agreement shall be deemed to be a representation and warranty by the Company to Cowen as to the matters set forth therein.

The Company acknowledges that Cowen and, for purposes of the opinions to be delivered pursuant to Section 7 hereof, counsel to the Company and counsel to Cowen, will rely upon the accuracy and truthfulness of the foregoing representations and warranties and hereby consents to such reliance.

7. Covenants of the Company. The Company covenants and agrees with Cowen that:

(a) Registration Statement Amendments. After the date of this Agreement and during any period in which a Prospectus relating to any Placement Shares is required to be delivered by Cowen under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act), (i) the Company will notify Cowen promptly of the time when any subsequent amendment to the Registration Statement, other than documents incorporated by reference, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus or for additional information (insofar as it relates to the transactions contemplated hereby), (ii) the Company will prepare and file with the Commission, promptly upon Cowen's reasonable request, any amendments or supplements to the Registration Statement or Prospectus that, in Cowen's reasonable opinion, may be necessary or advisable in connection with the distribution of the Placement Shares by Cowen (*provided*, *however*, that the failure of Cowen to make such request shall not relieve the Company of any obligation or liability hereunder, or affect Cowen's right to rely on the representations and warranties made by the Company in this Agreement and *provided*, *further*, that the only remedy Cowen shall have with respect to the failure by the Company to make such filing (other than Cowen's rights under Section 9 hereof) shall be to cease making sales under this Agreement until such amendment or supplement is filed); (iii) the Company will not file any amendment or supplement to the Registration Statement or Prospectus, other than documents incorporated by reference, relating to the Placement Shares or a security convertible into the Placement Shares unless a copy thereof has been submitted to Cowen within a reasonable period of time before the filing and Cowen has not reasonably objected thereto in writing within two business days (*provided*, *however*, that (A) the failure of Cowen to make such objection shall not relieve the Company of any obligation or liability hereunder, or affect Cowen's right to rely on the representations and warranties made by the Company in this Agreement, (B) the Company has no obligation to provide Cowen any advance copy of such filing or to provide Cowen an opportunity to object to such filing if the filing does not name Cowen and does not relate to the transaction herein and (C) the only remedy Cowen shall have with respect to the failure by the Company to provide Cowen with such copy, to make such filings, or to obtain such consent (other than Cowen's rights under Section 9 hereof) shall be to cease making sales under this Agreement) and the Company will furnish to Cowen at the time of filing thereof a copy of any document that upon filing is deemed to be incorporated by reference into the Registration Statement or Prospectus, except for those documents available via EDGAR; (iv) the Company will cause each amendment or supplement to the Prospectus, other than documents incorporated by reference, to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act, and (v) prior to the termination of this Agreement, the Company will notify Cowen if at any

time the Registration Statement shall no longer be effective as a result of the passage of time pursuant to Rule 415 under the Securities Act or otherwise. Prior to the initial sale of any Placement Shares, the Company shall file a final Prospectus Supplement pursuant to Rule 424(b) relating to the Placement Shares.

(b) Notice of Commission Stop Orders. The Company will advise Cowen, promptly after it receives notice or obtains knowledge thereof, of the issuance or threatened issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement, of the suspension of the qualification of the Placement Shares for offering or sale in any jurisdiction, or of the initiation or threatening of any proceeding for any such purpose; and it will promptly use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued.

(c) Delivery of Prospectus; Subsequent Changes. During any period in which a Prospectus relating to the Placement Shares is required to be delivered by Cowen under the Securities Act with respect to a pending sale of the Placement Shares, (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act), the Company will use its commercially reasonable efforts to comply with all requirements imposed upon it by the Securities Act, as from time to time in force, and to file on or before their respective due dates (taking into account any extensions available under the Exchange Act) all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If during such period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify Cowen to suspend the offering of Placement Shares during such period and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance; *provided*, *however*, that the Company may delay any such amendment or supplement if, in the reasonable judgment of the Company, it is in the best interest of the Company to do so, provided that no Placement Notice is in effect during such time..

(d) Listing of Placement Shares. During any period in which the Prospectus relating to the Placement Shares is required to be delivered by Cowen under the Securities Act with respect to a pending sale of the Placement Shares (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act), the Company will use its commercially reasonable efforts to cause the Placement Shares to be listed on Nasdaq and to qualify the Placement Shares for sale under the securities laws of such jurisdictions as Cowen reasonably designates and to continue such qualifications in effect so long as required for the distribution of the Placement Shares; *provided, however,* that the Company shall not be required in connection therewith to qualify as a foreign corporation or dealer in securities or file a general consent to service of process in any jurisdiction.

(e) Delivery of Registration Statement and Prospectus. The Company will furnish to Cowen and its counsel (at the expense of the Company) copies of the Registration Statement, the

Prospectus (including all documents incorporated by reference therein) and all amendments and supplements to the Registration Statement or Prospectus that are filed with the Commission during any period in which a Prospectus relating to the Placement Shares is required to be delivered under the Securities Act (including all documents filed with the Commission during such period that are deemed to be incorporated by reference therein), in each case as soon as reasonably practicable and in such quantities as Cowen may from time to time reasonably request and, at Cowen's request, will also furnish copies of the Prospectus to each exchange or market on which sales of the Placement Shares may be made; *provided, however,* that the Company shall not be required to furnish any document (other than the Prospectus) to Cowen to the extent such document is available on EDGAR.

(f) Earnings Statement. The Company will make generally available to its security holders as soon as practicable, but in any event not later than 15 months after the end of the Company's current fiscal quarter, an earnings statement covering a 12-month period that satisfies the provisions of Section 11(a) and Rule 158 of the Securities Act.

(g) Expenses. The Company, whether or not the transactions contemplated hereunder are consummated or this Agreement is terminated, in accordance with the provisions of Section 11 hereunder, will pay the following expenses all incident to the performance of its obligations hereunder, including, but not limited to, expenses relating to (i) the preparation, printing and filing of the Registration Statement and each amendment and supplement thereto, of each Prospectus and of each amendment and supplement thereto, (ii) the preparation, issuance and delivery of the Placement Shares, (iii) the qualification of the Placement Shares under securities laws in accordance with the provisions of Section 7(d) of this Agreement, including filing fees (provided, however, that any fees or disbursements of counsel for Cowen in connection therewith shall be paid by Cowen except as set forth in (vii) below), (iv) the printing and delivery to Cowen of copies of the Prospectus and any amendments or supplements thereto, and of this Agreement, (v) the fees and expenses incurred in connection with the listing or qualification of the Placement Shares for trading on Nasdaq, (vi) the filing fees and expenses, if any, of the Commission, (vii) the filing fees and associated legal expenses of Cowen's outside counsel for filings with the FINRA Corporate Financing Department and, (viii) the reasonable fees and disbursements of Cowen's counsel, such legal expense reimbursement set forth in clauses (vii) and (viii) not to exceed $50,000.

(h) Use of Proceeds. The Company will use the Net Proceeds as described in the Prospectus in the section entitled "Use of Proceeds."

(i) Notice of Other Sales. During the pendency of any Placement Notice given hereunder, and for five (5) Trading Days following the termination of any Placement Notice given hereunder, the Company shall provide Cowen notice as promptly as reasonably practicable before it offers to sell, contracts to sell, sells, grants any option to sell or otherwise disposes of any shares of Common Stock (other than Placement Shares offered pursuant to the provisions of this Agreement or pursuant to that certain Sales Agreement, dated June 3, 2019, by and between the Company and Cowen) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire Common Stock; *provided*, that such notice shall not be required in connection with the (i) offer, issuance, grant or sale of Common Stock (including restricted Common Stock), options to purchase shares of Common Stock or Common Stock, restricted stock units or other equity awards issuable upon the exercise of options or other equity awards pursuant

to any equity incentive plan, stock option plan, stock bonus plan, stock purchase plan, or other compensatory plan or arrangement described in the Registration Statement or the Prospectus, including, without limitation, the Company's 2018 Incentive Award Plan and 2018 Employee Stock Purchase Plan, (ii) the offer or issuance of securities in connection with an acquisition, merger or sale or purchase or license of assets, (iii) the issuance or sale of Common Stock pursuant to any dividend reinvestment plan that the Company may adopt, in its sole discretion, from time to time provided the implementation of such plan is disclosed to Cowen in advance, (iv) any shares of Common Stock, or securities convertible into or exercisable for Common Stock, offered and sold in a privately negotiated transaction to vendors, customers, investors, strategic partners or potential strategic partners and otherwise conducted in a manner so as not to be integrated with the offering of Placement Shares hereby or (v) the issuance or sale of any shares of common stock issuable upon the exchange, conversion or redemption of securities or the exercise of warrants, options or other rights in effect or outstanding or disclosed in filings by the Company available on EDGAR or otherwise in writing to Cowen prior to the date of the applicable Placement Notice. Notwithstanding the foregoing provisions, subject to the Company's compliance with the notice provisions set forth in this Section 7(i), nothing herein shall be construed to restrict the Company from entering into and/or consummating a committed underwritten equity offering or other similar offering of its registered securities, or otherwise prohibit the issuance of its equity securities in a private placement transaction, or require that the Company provide notice of, or obtain prior written consent, to do any of the foregoing

(j) Change of Circumstances. The Company will, at any time during the pendency of a Placement Notice or the pendency of any sale of Placement Shares, advise Cowen promptly after it shall have received notice or obtained knowledge thereof, of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document provided to Cowen pursuant to this Agreement.

(k) Due Diligence Cooperation. The Company will cooperate with any reasonable due diligence review conducted by Cowen or its agents in connection with the transactions contemplated hereby, including, without limitation, providing information and making available documents and senior corporate officers, during regular business hours and at the Company's principal offices, as Cowen may reasonably request.

(l) Required Filings Relating to Placement of Placement Shares. The Company agrees that on such dates as the Securities Act shall require, the Company will (i) file a prospectus supplement with the Commission under the applicable paragraph of Rule 424(b) under the Securities Act (each and every filing under Rule 424(b), a "**Filing Date**"), and (ii) deliver such number of copies of each such prospectus supplement to each exchange or market on which such sales were effected as may be required by the rules or regulations of such exchange or market. The Company shall disclose in its quarterly reports on Form 10-Q and in its annual report on Form 10-K, the number of the Shares sold through Cowen under this Agreement, and the gross proceeds and Net Proceeds to the Company from the sale of the Shares and the compensation paid by the Company with respect to sales of the Shares pursuant to this Agreement during the relevant quarter or, in the case of an Annual Report on Form 10-K, during the fiscal year covered by such Annual Report and the fourth quarter of such fiscal year.

(m) Bring-Down Dates; Certificate. On or prior to the First Delivery Date and, following the First Delivery Date, each time during the term of this Agreement the Company (i) files the Prospectus relating to the Placement Shares (other than (x) the Prospectus Supplement filed on the date hereof or (y) a prospectus supplement filed solely to meet the requirements of Section 7(l) of this Agreement) or amends or supplements the Registration Statement or the Prospectus relating to the Placement Shares (other than a prospectus supplement filed solely to meet the requirements of Section 7(l) of this Agreement) by means of a post-effective amendment, sticker, or supplement but not by means of incorporation of document(s) by reference to the Registration Statement or the Prospectus relating to the Placement Shares; (ii) files an annual report on Form 10-K under the Exchange Act; (iii) files a quarterly report on Form 10-Q under the Exchange Act; or (iv) files a report on Form 8-K containing amended financial information (other than an earnings release or other information "furnished") under the Exchange Act (each date of filing of one or more of the documents referred to in clauses (i) through (iv) shall be a **"Bring-Down Date"**); the Company shall furnish Cowen (but in the case of clause (iv) above only if (1) a Placement Notice is pending, (2) Cowen reasonably determines that the information contained in such Form 8-K is material to a holder of Common Stock and (3) Cowen requests such certification within three days after the filing of such Form 8-K with the Commission) with a certificate, in the form attached hereto as Exhibit 7(m) within two (2) Trading Days of any Bring-Down Date if requested by Cowen. The requirement to provide a certificate under this Section 7(m) shall automatically be waived for any Bring-Down Date occurring at a time at which no Placement Notice is pending, which waiver shall continue until the earlier to occur of the date the Company delivers a Placement Notice hereunder (which for such calendar quarter shall be considered a Bring-Down Date) and the next occurring Bring-Down Date. Notwithstanding the foregoing, if the Company subsequently decides to sell Placement Shares following a Bring-Down Date when the Company relied on such waiver and did not provide Cowen with a certificate under this Section 7(m), then before the Company delivers the Placement Notice or Cowen sells any Placement Shares, the Company shall provide Cowen with a certificate, in the form attached hereto as Exhibit 7(m), dated the date of the Placement Notice.

(n) Legal Opinions. On or prior to the First Delivery Date and within two (2) Trading Days of each Bring-Down Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(m) for which no waiver is applicable, the Company shall cause to be furnished to Cowen (A) a written opinion and negative assurance statement of Latham & Watkins LLP, counsel for the Company ("**Company Counsel**") and (B) a written opinion of in-house intellectual property counsel for the Company ("**Company IP Counsel**"), or other counsel reasonably satisfactory to Cowen, in form and substance reasonably satisfactory to Cowen and its counsel, dated the date that the opinions are required to be delivered, as may be modified, as necessary, to relate to the Registration Statement and the Prospectus as then amended or supplemented; *provided*, *however*, the Company shall be required to furnish to Cowen no more than one Company Counsel written opinion and negative assurance statement hereunder per calendar quarter and no more than one Company IP Counsel written opinion hereunder in a twelve-month period; *provided*, *however*, that in lieu of such opinions for subsequent Bring-Down Dates, each counsel may furnish Cowen with a letter (a "**Reliance Letter**") to the effect that Cowen may rely on a prior opinion delivered under this Section 7(n) to the same extent as if it were dated the date of such letter (except that statements in such prior opinion shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented at such Bring-Down Date).

(o) Comfort Letter. On or prior to the First Delivery Date and within two (2) Trading Days of each Bring-Down Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(m) for which no waiver is applicable, the Company shall cause its independent accountants to furnish Cowen letters (the **"Comfort Letters"**), dated the date the Comfort Letter is delivered, in form and substance reasonably satisfactory to Cowen, (i) confirming that they are an independent registered public accounting firm within the meaning of the Securities Act and the Public Company Accounting Oversight Board, (ii) stating, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants' "comfort letters" to Cowen in connection with registered public offerings (the first such letter, the **"Initial Comfort Letter"**) and (iii) updating the Initial Comfort Letter with any information that would have been included in the Initial Comfort Letter had it been given on such date and modified as necessary to relate to the Registration Statement and the Prospectus, as amended and supplemented to the date of such letter.

(p) Market Activities. The Company will not, directly or indirectly, (i) take any action designed to cause or result in, or that constitutes or might reasonably be expected to constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Placement Shares or (ii) sell, bid for, or purchase the Placement Shares to be issued and sold pursuant to this Agreement, or pay anyone any compensation for soliciting purchases of the Placement Shares other than Cowen; provided, however, that the Company may bid for and purchase shares of its Common Stock in accordance with Rule 10b-18 under the Exchange Act.

(q) Insurance. The Company shall maintain, or cause to be maintained, insurance in such amounts and covering such risks as is reasonable and customary for the business for which it is engaged.

(r) Compliance with Laws. The Company shall maintain, or cause to be maintained, all material environmental permits, licenses and other authorizations required by federal, state and local law in order to conduct its businesses as described in the Prospectus, and the Company shall conduct its businesses, or cause its businesses to be conducted, in substantial compliance with such permits, licenses and authorizations and with applicable environmental laws, except where the failure to maintain or be in compliance with such permits, licenses and authorizations could not reasonably be expected to result in a Material Adverse Change.

(s) Investment Company Act. The Company will conduct its affairs in such a manner so as to reasonably ensure that it will not be or become, at any time prior to the termination of this Agreement, an "investment company," as such term is defined in the Investment Company Act, assuming no change in the Commission's current interpretation as to entities that are not considered an investment company.

(t) Securities Act and Exchange Act. The Company will use its reasonable best efforts to comply with all requirements imposed upon it by the Securities Act and the Exchange Act as from time to time in force, so far as necessary to permit the continuance of sales of, or dealings in, the Placement Shares as contemplated by the provisions hereof and the Prospectus.

(u) No Offer to Sell. Other than the Prospectus and any Permitted Free Writing Prospectus, neither Cowen nor the Company (including its agents and representatives, other than

Cowen in its capacity as such) will make, use, prepare, authorize, approve or refer to any written communication (as defined in Rule 405 under the Securities Act), required to be filed with the Commission, that constitutes an offer to sell or solicitation of an offer to buy Placement Shares hereunder.

(v) Sarbanes-Oxley Act. The Company will use its reasonable best efforts to comply with all effective applicable provisions of the Sarbanes-Oxley Act.

(w) Affirmation. Each Placement Notice delivered by the Company to Cowen shall be deemed to be (i) an affirmation that the representations, warranties and agreements of the Company herein contained and contained in any certificate delivered to Cowen pursuant hereto are true and correct at the time of delivery of such Placement Notice, and (ii) an undertaking that such representations, warranties and agreements will be true and correct on any applicable Settlement Date, as though made at and as of each such time (it being understood that such representations, warranties and agreements shall relate to the Registration Statement and the Prospectus as amended and supplemented to the time of such Placement Notice acceptance).

8. Conditions to Cowen's Obligations. The obligations of Cowen hereunder with respect to a Placement Notice will be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein, to the due performance by the Company of its obligations hereunder, to the completion by Cowen of a due diligence review satisfactory to Cowen in its reasonable judgment, and to the continuing satisfaction (or waiver by Cowen in its sole discretion) of the following additional conditions:

(a) Registration Statement Effective. The Registration Statement shall have become effective and shall be available for the sale of all Placement Shares contemplated to be issued pursuant to any Placement Notice.

(b) No Material Notices. None of the following events shall have occurred and be continuing: (i) receipt by the Company of any request for additional information from the Commission or any other federal or state governmental authority during the period of effectiveness of the Registration Statement, the response to which would require any post-effective amendments or supplements to the Registration Statement or the Prospectus; (ii) the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of the Registration Statement or the initiation of any proceedings for that purpose; (iii) receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Placement Shares for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; or (iv) the occurrence of any event that makes any material statement made in the Registration Statement or the Prospectus or any material document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires the making of any changes in the Registration Statement, related Prospectus or such documents so that, in the case of the Registration Statement, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading and, that in the case of the Prospectus, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(c) No Misstatement or Material Omission. Cowen shall not have advised the Company that the Registration Statement or Prospectus, or any amendment or supplement thereto, contains an untrue statement of fact that in Cowen's reasonable opinion is material, or omits to state a fact that in Cowen's reasonable opinion is material and is required to be stated therein or is necessary to make the statements therein not misleading.

(d) Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any material adverse change, on a consolidated basis, in the authorized capital stock of the Company or any Material Adverse Change or any development that could reasonably be expected to result in a Material Adverse Change, the effect of which, in the reasonable judgment of Cowen (without relieving the Company of any obligation or liability it may otherwise have), is so material as to make it impracticable or inadvisable to proceed with the offering of the Placement Shares on the terms and in the manner contemplated in the Prospectus.

(e) Company Counsel and Company IP Counsel Legal Opinions. Cowen shall have received the opinions of Company Counsel and Company IP Counsel, as applicable, required to be delivered pursuant to Section 7(n) on or before the date on which such delivery of such opinions are required pursuant to Section 7(n).

(f) Cowen Counsel Legal Opinion. Cowen shall have received from Davis Polk & Wardwell LLP, counsel for Cowen, such opinion or opinions, on or before the date on which the delivery of the Company Counsel legal opinion is required pursuant to Section 7(n), with respect to such matters as Cowen may reasonably require, and the Company shall have furnished to such counsel such documents as they reasonably request for enabling them to pass upon such matters.

(g) Comfort Letter. Cowen shall have received the Comfort Letter required to be delivered pursuant to Section 7(o) on or before the date on which such delivery of such Comfort Letter is required pursuant to Section 7(o).

(h) Representation Certificate. Cowen shall have received the certificate required to be delivered pursuant to Section 7(m) on or before the date on which delivery of such certificate is required pursuant to Section 7(m).

(i) Secretary's Certificate. On or prior to the First Delivery Date, Cowen shall have received a certificate, signed on behalf of the Company by its corporate secretary or assistant secretary, in form and substance reasonably satisfactory to Cowen and its counsel.

(j) No Suspension. Trading in the Common Stock shall not have been suspended on Nasdaq.

(k) Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(m), the Company shall have furnished to Cowen such appropriate further information, certificates and documents as Cowen may have reasonably requested. All such opinions, certificates, letters and other documents shall have been in compliance with the provisions hereof. The Company will furnish Cowen with such conformed copies of such opinions, certificates, letters and other documents as Cowen shall have reasonably requested.

(l) Securities Act Filings Made. All filings with the Commission required by Rule 424 under the Securities Act to have been filed prior to the issuance of any Placement Notice hereunder shall have been made within the applicable time period prescribed for such filing by Rule 424.

(m) Approval for Listing. To the extent required by the rules of Nasdaq, the Placement Shares shall either have been (i) approved for listing on Nasdaq, subject only to notice of issuance, or (ii) the Company shall have filed an application for listing of the Placement Shares on Nasdaq at, or prior to, the issuance of any Placement Notice.

(n) No Termination Event. There shall not have occurred any event that would permit Cowen to terminate this Agreement pursuant to Section 11(a).

9. Indemnification and Contribution.

(a) Company Indemnification. The Company agrees to indemnify and hold harmless Cowen, the directors, officers, partners, employees and agents of Cowen and each person, if any, who (i) controls Cowen within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, or (ii) is controlled by or is under common control with Cowen from and against any and all losses, claims, liabilities, expenses and damages (including, but not limited to, any and all reasonable investigative, legal and other expenses incurred in connection with, and any and all amounts paid in settlement (in accordance with Section 9(c)) of, any action, suit or proceeding between any of the indemnified parties and any indemnifying parties or between any indemnified party and any third party, or otherwise, or any claim asserted), as and when incurred, to which Cowen, or any such person, may become subject under the Securities Act, the Exchange Act or other federal or state statutory law or regulation, at common law or otherwise, insofar as such losses, claims, liabilities, expenses or damages arise out of or are based, directly or indirectly, on (x) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or the Prospectus or any amendment or supplement to the Registration Statement or the Prospectus or in any free writing prospectus or based on written information furnished by or on behalf of the Company filed in any jurisdiction in order to qualify the Common Stock under the securities laws thereof or filed with the Commission or (y) the omission or alleged omission to state in any such document a material fact required to be stated in it or necessary to make the statements therein, in the light of (other than the case of the Registration Statement) the circumstances under which they were made, not misleading; *provided*, *however*, that this indemnity agreement shall not apply to the extent that such loss, claim, liability, expense or damage arises from the sale of the Placement Shares pursuant to this Agreement and is caused directly or indirectly by an untrue statement or omission or alleged untrue statement or omission made in reliance upon and in conformity with solely the Agent's Information. This indemnity agreement will be in addition to any liability that the Company might otherwise have.

(b) Cowen Indemnification. Cowen agrees to indemnify and hold harmless the Company and its directors and each officer of the Company that signed the Registration Statement, and each person, if any, who (i) controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (ii) is controlled by or is under common control with the Company against any and all loss, liability, claim, damage and expense described in the indemnity contained in Section 9(a), as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any

amendments thereto), the Prospectus (or any amendment or supplement thereto) or any free writing prospectus in reliance upon and in conformity with the Agent's Information.

(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 9 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 9, notify each such indemnifying party in writing of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 9 and (ii) any liability that it may have to any indemnified party under the foregoing provision of this Section 9 unless, and only to the extent that, such omission results in the forfeiture or material impairment of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel reasonably satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any legal or other expenses except as provided below and except for the reasonable costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel to assume the defense of such action within a reasonable time after receiving notice of the commencement of the action, in each of which cases the reasonable fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees, disbursements and other charges of more than one separate firm admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such fees, disbursements and other charges will be reimbursed by the indemnifying party promptly as they are incurred after the indemnifying party receives a written invoice relating to fees, disbursements and other charges in reasonable detail. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 9 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent includes an unconditional release of each indemnified party from all liability arising or that may arise out of such litigation, investigation, claim, action or proceeding.

(d) Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 9 is applicable in accordance with its terms but for any reason is held to be unavailable from the Company or Cowen, the Company and Cowen will contribute to the total losses, claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted, but after deducting any contribution received by the Company from persons other than Cowen, such as persons who control the Company within the meaning of the Securities Act, officers of the Company who signed the Registration Statement and directors of the Company, who also may be liable for contribution) to which the Company and Cowen may be subject in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and Cowen on the other hand. The relative benefits received by the Company on the one hand and Cowen on the other hand shall be deemed to be in the same proportion as the total Net Proceeds from the sale of the Placement Shares (before deducting expenses) received by the Company bear to the total compensation received by Cowen (before deducting expenses) from the sale of Placement Shares on behalf of the Company. If, but only if, the allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and Cowen, on the other, with respect to the statements or omission that resulted in such loss, claim, liability, expense or damage, or action in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or Cowen, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and Cowen agree that it would not be just and equitable if contributions pursuant to this Section 9(d) were to be determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense, or damage, or action in respect thereof, referred to above in this Section 9(d) shall be deemed to include, for the purpose of this Section 9(d), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim to the extent consistent with Section 9(c) hereof. Notwithstanding the foregoing provisions of this Section 9(d), Cowen shall not be required to contribute any amount in excess of the commissions received by it under this Agreement and no person found guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 9(d), any person who controls a party to this Agreement within the meaning of the Securities Act, and any officers, directors, partners, employees or agents of Cowen, will have the same rights to contribution as that party, and each officer and director of the Company who signed the Registration Statement will have the same rights to contribution as the Company, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 9(d), will notify any such party or parties from whom contribution may be sought, but the omission to so notify will not relieve that party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 9(d) except to the extent that the failure to so notify such other party materially prejudiced the substantive rights or defenses of the party from whom contribution is sought. Except for a settlement entered into pursuant to the last sentence of Section 9(c) hereof, no party will be liable for contribution with respect to any action or claim settled without its written consent if such consent is required pursuant to Section 9(c) hereof.

10. Representations and Agreements to Survive Delivery. The indemnity and contribution agreements contained in Section 9 of this Agreement and all representations and warranties of the Company herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on behalf of Cowen, any controlling persons, or the Company (or any of their respective officers, directors or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

11. Termination.

(a) Cowen shall have the right by giving written notice as hereinafter specified at any time to terminate this Agreement if (i) any Material Adverse Change, or any development that could reasonably be expected to result in a Material Adverse Change has occurred that, in the reasonable judgment of Cowen, may materially impair the ability of Cowen to sell the Placement Shares hereunder, (ii) the Company shall have failed, refused or been unable to perform any agreement on its part to be performed hereunder; *provided*, *however*, in the case of any failure of the Company to deliver (or cause another person to deliver) any certification, opinion, or letter required under Sections 7(m), 7(n), or 7(o), Cowen's right to terminate shall not arise unless such failure to deliver (or cause to be delivered) continues for more than thirty (30) days from the date such delivery was required; or (iii) any other condition of Cowen's obligations hereunder is not fulfilled, or (iv), any suspension or limitation of trading in the Placement Shares or in securities generally on Nasdaq shall have occurred. Any such termination shall be without liability of any party to any other party except that the provisions of Section 7(g) (Expenses), Section 9 (Indemnification and Contribution), Section 10 (Representations and Agreements to Survive Delivery), Section 16 (Applicable Law; Consent to Jurisdiction) and Section 17 (Waiver of Jury Trial) hereof shall remain in full force and effect notwithstanding such termination. If Cowen elects to terminate this Agreement as provided in this Section 11(a), Cowen shall provide the required written notice as specified in Section 12 (Notices).

(b) The Company shall have the right, by giving ten (10) days' notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement; provided, however, that the Company may terminate this Agreement pursuant to this Section 11(b) upon twenty-four (24) hours' notice if such notice is delivered on or prior to August 31, 2020. Any such termination shall be without liability of any party to any other party except that the provisions of

Section 7(g), Section 9, Section 10, Section 16 and Section 17 hereof shall remain in full force and effect notwithstanding such termination.

(c) Cowen shall have the right, by giving ten (10) days' notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 7(g), Section 9, Section 10, Section 16 and Section 17 hereof shall remain in full force and effect notwithstanding such termination.

(d) Unless earlier terminated pursuant to this Section 11, this Agreement shall automatically terminate upon the issuance and sale of all of the Placement Shares through Cowen on the terms and subject to the conditions set forth herein; *provided* that the provisions of Section 7(g), Section 9, Section 10, Section 16 and Section 17 hereof shall remain in full force and effect notwithstanding such termination.

(e) This Agreement shall remain in full force and effect unless terminated pursuant to Sections 11(a), (b), (c), or (d) above or otherwise by mutual agreement of the parties; *provided, however,* that any such termination by mutual agreement shall in all cases be deemed to provide that Section 7(g), Section 9, Section 10, Section 16 and Section 17 shall remain in full force and effect.

(f) Any termination of this Agreement shall be effective on the date specified in such notice of termination; *provided, however,* that such termination shall not be effective until the close of business on the date of receipt of such notice by Cowen or the Company, as the case may be. If such termination shall occur prior to the Settlement Date for any sale of Placement Shares, such Placement Shares shall settle in accordance with the provisions of this Agreement. Upon termination of this Agreement, the Company shall not have liability to Cowen for any discount, commission or other compensation with respect to any Placement Shares not otherwise sold by Cowen under this Agreement, except with respect to reimbursement of expenses pursuant to Section 7(g).

(g) Subject to the additional limitations set forth in Section 7 of this Agreement, in the event of termination of this Agreement prior to the sale of any Placement Shares, Cowen shall be entitled only to reimbursement of its out of pocket expenses actually incurred.

12. Notices. All notices or other communications required or permitted to be given by any party to any other party pursuant to the terms of this Agreement shall be in writing, unless otherwise specified in this Agreement, and if sent to Cowen, shall be delivered to Cowen at Cowen and Company, LLC, 599 Lexington Avenue, New York, NY 10022, Attention: General Counsel, email: bradley.friedman@cowen.com; or if sent to the Company, shall be delivered to Unity Biotechnology, Inc. at 3280 Bayshore Blvd. Suite 100, Brisbane, CA 64005, attention: General Counsel (email: tammy.tompkins@unitybiotechnology.com) with a copy to Latham & Watkins LLP, attention: Brian J. Cuneo, Esq. (email: brian.cuneo@lw.com). Each party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose. Each such notice or other communication shall be deemed given (i) when delivered personally or by verifiable facsimile transmission (with an original to follow) on or before 4:30 p.m., New York City time, on a Business Day (as defined below), or, if such day is not a Business Day on the next succeeding Business Day, (ii) on the next Business Day after timely delivery to a nationally-recognized overnight courier and (iii) on the Business Day actually received if deposited in the U.S. mail (certified or registered mail, return receipt requested, postage prepaid). For purposes of this Agreement, "**Business Day**" shall mean any day on which Nasdaq and commercial banks in the City of New York are open for business.

13. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Company and Cowen and their respective successors and the affiliates, controlling persons, officers and directors referred to in Section 9 hereof. References to any of the

parties contained in this Agreement shall be deemed to include the successors and permitted assigns of such party. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. Neither party may assign its rights or obligations under this Agreement without the prior written consent of the other party; *provided*, *however*, that Cowen may assign its rights and obligations hereunder to an affiliate of Cowen without obtaining the Company's consent (so long as such affiliate is a registered broker dealer).

14. Adjustments for Share Splits. The parties acknowledge and agree that all share-related numbers contained in this Agreement shall be adjusted to take into account any share split, share dividend or similar event effected with respect to the Common Stock.

15. Entire Agreement; Amendment; Severability. This Agreement (including all schedules and exhibits attached hereto and Placement Notices issued pursuant hereto) constitutes the entire agreement and supersedes all other prior and contemporaneous agreements and undertakings, both written and oral, among the parties hereto with regard to the subject matter hereof. Neither this Agreement nor any term hereof may be amended except pursuant to a written instrument executed by the Company and Cowen. In the event that any one or more of the provisions contained herein, or the application thereof in any circumstance, is held invalid, illegal or unenforceable as written by a court of competent jurisdiction, then such provision shall be given full force and effect to the fullest possible extent that it is valid, legal and enforceable, and the remainder of the terms and provisions herein shall be construed as if such invalid, illegal or unenforceable term or provision was not contained herein, but only to the extent that giving effect to such provision and the remainder of the terms and provisions hereof shall be in accordance with the intent of the parties as reflected in this Agreement.

16. Applicable Law; Consent to Jurisdiction. This Agreement shall be governed by, and construed in accordance with, the internal laws of the State of New York without regard to the principles of conflicts of laws. Each party hereby irrevocably submits to the non-exclusive jurisdiction of the state and federal courts sitting in the City of New York, borough of Manhattan, for the adjudication of any dispute hereunder or in connection with any transaction contemplated hereby, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof (certified or registered mail, return receipt requested) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law.

17. Waiver of Jury Trial. The Company and Cowen each hereby irrevocably waives any right it may have to a trial by jury in respect of any claim based upon or arising out of this Agreement or any transaction contemplated hereby.

18. Absence of Fiduciary Relationship. The Company acknowledges and agrees that:

(a) Cowen has been retained solely to act as an arm's length contractual counterparty to the Company in connection with the sale of the Common Stock contemplated hereby and that no fiduciary, advisory or agency relationship between the Company and Cowen has been created in respect of any of the transactions contemplated by this Agreement, irrespective of whether Cowen has advised or is advising the Company on other matters;

(b) the Company is capable of evaluating and understanding and understands and accepts the terms, risks and conditions of the transactions contemplated by this Agreement;

(c) the Company has been advised that Cowen and its affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and that Cowen has no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship; and

(d) the Company waives, to the fullest extent permitted by law, any claims it may have against Cowen, for breach of fiduciary duty or alleged breach of fiduciary duty in connection with the sale of Placement Shares under this Agreement and agrees that Cowen shall have no liability (whether direct or indirect) to the Company in respect of such a fiduciary claim or to any person asserting a fiduciary duty claim on behalf of or in right of the Company, including stockholders, partners, employees or creditors of the Company.

19. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery of an executed Agreement by one party to the other may be made by facsimile or electronic transmission.

20. Definitions. As used in this Agreement, the following term has the meaning set forth below:

(a) "*Agent's Information*" means, solely the following information in the Prospectus: the eighth paragraph under the caption "Plan of Distribution" in the Prospectus.

**[Remainder of Page Intentionally Blank]**

If the foregoing correctly sets forth the understanding between the Company and Cowen, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between the Company and Cowen.

Very truly yours,

**COWEN AND COMPANY, LLC**

By: /s/ E. James Streator, III Name: E. James Streator, III.
Title: Managing Director

**ACCEPTED as of the date first-above written:**

**UNITY BIOTECHNOLOGY, INC.**

By: /s/ Anirvan Ghosh Name: Anirvan Ghosh, Ph.D.
Title: Chief Executive Officer

**SCHEDULE 1**

**FORM OF PLACEMENT NOTICE**

From: [ ]
Cc: [ ]
To: [ ]
Subject: Cowen At the Market Offering—Placement Notice

Gentlemen:

Pursuant to the terms and subject to the conditions contained in the Sales Agreement between Unity Biotechnology, Inc. (the "**Company**"), and Cowen and Company, LLC ("**Cowen**") dated [ ], 2020 (the "**Agreement**"), I hereby request on behalf of the Company that Cowen sell up to [ ] shares of the Company's common stock, par value $0.0001 per share, at a minimum market price of $_____ per share. Sales should begin on the date of this Notice and shall continue until [DATE] [all shares are sold].

**SCHEDULE 2**

## Notice Parties

**Company**

Anirvan Ghosh, Ph.D. Chief Executive Officer

Lynne Sullivan Interim Chief Financial Officer

**Cowen**

Michael J. Murphy Managing Director

William Follis Managing Director

**SCHEDULE 3**

## Compensation

Cowen shall be paid compensation equal to 3% of the gross proceeds from the sales of Placement Shares pursuant to the terms of this Agreement.

**Exhibit 7(m)**

## OFFICER CERTIFICATE

The undersigned, the duly qualified and elected _____, of **Unity Biotechnology, Inc.** ("**Company**"), a Delaware corporation, does hereby certify in such capacity and in no other capacity, on behalf of the Company, pursuant to Section 7(m) of the Sales Agreement dated _____, 2020 (the "**Sales Agreement**") between the Company and Cowen and Company, LLC, that to the best of the knowledge of the undersigned.

(i) The representations and warranties of the Company in Section 6 of the Sales Agreement (A) to the extent such representations and warranties are subject to qualifications and exceptions contained therein relating to materiality or Material Adverse Change, are true and correct on and as of the date hereof with the same force and effect as if expressly made on and as of the date hereof, except for those representations and warranties that speak solely as of a specific date and which were true and correct as of such date, and (B) to the extent such representations and warranties are not subject to any qualifications or exceptions, are true and correct in all material respects as of the date hereof as if made on and as of the date hereof with the same force and effect as if expressly made on and as of the date hereof except for those representations and warranties that speak solely as of a specific date and which were true and correct as of such date; and

(ii) The Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied pursuant to the Sales Agreement at or prior to the date hereof.

**Unity Biotechnology, Inc.**

By:
Name:
Title:

Date:

**Exhibit 5.1**

140 Scott Drive
Menlo Park, California 94025
Tel: +1.650.328.4600 Fax: +1.650.463.2600
www.lw.com



LATHAM & WATKINS LLP

July 31, 2020

Unity Biotechnology, Inc.
285 East Grand Avenue
South San Francisco, California 94080

Re: Registration Statement No. 333-231893; Up to $50,000,000 of Shares of Common Stock, par value $0.0001 per share

Ladies and Gentlemen:

We have acted as special counsel to Unity Biotechnology, Inc., a Delaware corporation (the "***Company***"), in connection with the proposed issuance from time to time of shares of common stock of the Company, par value $0.0001 per share, having an aggregate offering price of up to $50,000,000 (the "***Shares***"), by the Company pursuant to the Sales Agreement dated July 31, 2020 (the "***Sales Agreement***") between the Company and Cowen and Company, LLC. The Shares are included in a registration statement on Form S-3 under the Securities Act of 1933, as amended (the "***Act***"), filed with the Securities and Exchange Commission (the "***Commission***") on June 3, 2019 (Registration No. 333–231893) (as amended, the "***Registration Statement***"), a related base prospectus dated June 6, 2019 (the "***Base Prospectus***") and a prospectus supplement dated July 31, 2020 filed with the Commission pursuant to Rule 424(b) under the Act (the "***Sales Agreement Prospectus***" and, together with the Base Prospectus, the "***Prospectus***").

This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or related applicable Prospectus or the Sales Agreement Prospectus, other than as expressly stated herein with respect to the issuance of the Shares.

As such counsel, we have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter. With your consent, we have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. We are opining herein as to the General Corporation Law of the State of Delaware (the "***DGCL***"), and we express no opinion with respect to any other laws.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, as of the date hereof, when the Shares shall have been duly registered on the books of the transfer agent and registrar therefor in the name or on behalf of the purchasers, and have been issued by the Company against payment therefor (not less than par value) in the circumstances contemplated by the Sales Agreement, the issuance and sale of the Shares will have been duly authorized by all necessary corporate action of the Company, and the Shares will be validly issued, fully paid and nonassessable. In rendering the foregoing opinion, we have assumed that (i) the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the DGCL and (ii) upon the issuance of any of the Shares, the total number of shares of Common Stock issued and outstanding will not exceed the total number of shares of Common Stock that the Company is then authorized to issue under its Certificate of Incorporation.

This opinion is for your benefit in connection with the Registration Statement and may be relied upon by you and by persons entitled to rely upon it pursuant to the applicable provisions of the Act. We consent to your filing this opinion as an exhibit to the Company's Quarterly Report on Form 10-Q for the six month period ended June 30, 2020 and to the reference to our firm contained in each of the Prospectus and the Prospectus under the heading "Legal Matters." In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Latham & Watkins

**Exhibit 31.1**

**CERTIFICATION PURSUANT TO**
**RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,**
**AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Anirvan Ghosh, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Unity Biotechnology, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 31, 2020

By: /s/ Anirvan Ghosh

**Anirvan Ghosh, Ph.D.**
**Chief Executive Officer**
**(Principal Executive Officer)**

**Exhibit 31.2**

**CERTIFICATION PURSUANT TO**
**RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,**
**AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Robert C. Goeltz II, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Unity Biotechnology, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 31, 2020

By: /s/ Robert C. Goeltz II

**Robert C. Goeltz II**
**Chief Financial Officer**
**(Principal Financial Officer)**

**Exhibit 32.1**

**CERTIFICATION PURSUANT TO**
**18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO**
**SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Quarterly Report of Unity Biotechnology, Inc. (the "Company") on Form 10-Q for the period ending June 30, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Anirvan Ghosh, Chief Executive Officer of the Company, and Robert C. Goeltz II, Chief Financial Officer of the Company, do each hereby certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: July 31, 2020 By: /s/ Anirvan Ghosh

**Anirvan Ghosh, Ph.D.**
**Chief Executive Officer**
**(Principal Executive Officer)**

Date: July 31, 2020 By: /s/ Robert C. Goeltz II

**Robert C. Goeltz II**
**Chief Financial Officer**
**(Principal Financial Officer)**