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 September 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: 001-38707

LogicBio Therapeutics, Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**47-1514975**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

65 Hayden Avenue, 2nd Floor, Lexington, MA 02421
(Address of principal executive offices) (Zip code)

(617) 245-0399
(Registrant's telephone number, including area code)

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 per share	**LOGC**	**Nasdaq Global 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, a 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 November 5, 2020, the registrant had 31,786,486 shares of common stock, $0.0001 par value per share, outstanding.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements. All statements other than statements of historical fact are "forward-looking statements" for purposes of this Quarterly Report on Form 10-Q. In some cases, you can identify forward-looking statements by terminology such as "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "could," "would," "project," "plan," "expect," or similar expressions, or the negative or plural of these words or expressions. These forward-looking statements include statements concerning the following:

- the initiation, cost, timing, progress and results of our current and future research and development activities and preclinical studies and potential future clinical trials, including our plans to initiate, advance and complete our SUNRISE Phase 1/2 clinical trial and other development activities for LB-001 in methylmalonic acidemia, or MMA;
- potential attributes and benefits of our GeneRide technology platform and our existing or future product candidates;
- our ability to take advantage of the modular nature of our GeneRide platform to simplify and accelerate development of new product candidates;
- the potential benefits of strategic partnership agreements and our ability to enter into selective strategic partnership arrangements;
- the timing of, and our ability to obtain and maintain, regulatory approvals for our existing or future product candidates;
- our ability to quickly and efficiently identify and develop additional product candidates;
- our ability to advance any product candidate into and successfully complete clinical trials;
- our intellectual property position, including with respect to our trade secrets and the duration of our patent protection; and
- our estimates regarding expenses, future revenues, capital requirements, the sufficiency of our current and expected cash resources and our need for additional financing.

These statements are only current predictions and are subject to known and unknown risks, uncertainties and other factors that may cause our or our industry's actual results, levels of activity, performance or achievements to be materially different from those anticipated by the forward-looking statements. We discuss many of these risks in greater detail under Part I, Item 1A. Risk Factors in our Annual Report on Form 10-K for the year ended December 31, 2019 filed with the Securities and Exchange Commission, or SEC, on March 16, 2020 and under Part II, Item 1A. Risk Factors in our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2020 filed with the SEC on May 11, 2020, each as may be amended or updated in subsequent filings with the SEC. In particular, the impact of the ongoing COVID-19 pandemic on our ability to progress with our research, development, manufacturing and regulatory efforts, including our plans to initiate, advance and complete our SUNRISE Phase 1/2 clinical trial for LB-001 in MMA, and the value of and market for our common stock, will depend on future developments that are highly uncertain and cannot be predicted with confidence at this time, such as the ultimate duration of the pandemic, travel restrictions, quarantines, social distancing and business closure requirements in the United States and in other countries, and the effectiveness of actions taken globally to contain and treat the disease. Any forward-looking statement in this Quarterly Report on Form 10-Q reflects our current view with respect to future events and is subject to these and other risks, uncertainties and assumptions relating to our operations, results of operations, industry and future growth. Given these uncertainties, you should not rely on these forward-looking statements as predictions of future events. We cannot guarantee future results, levels of activity, performance or achievements. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.

Unless the context otherwise requires, the terms "LogicBio," "LogicBio Therapeutics, Inc.," the "Company," "we," "us," "our" and similar references in this Quarterly Report on Form 10-Q refer to LogicBio Therapeutics, Inc. and its subsidiaries.

PART I—FINANCIAL INFORMATION

Item 1. Financial Statements (Unaudited).

LogicBio Therapeutics, Inc.

Condensed Consolidated Balance Sheets
(In thousands, except share and per share data)

	September 30, 2020	December 31, 2019
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 32,285	$ 33,107
Short-term investments	—	17,540
Prepaid expenses and other current assets	1,261	2,045
Restricted cash	—	146
Total current assets	33,546	52,838
Property and equipment, net	1,690	1,696
Restricted cash	622	622
Operating lease right-of-use asset	5,948	504
TOTAL ASSETS	$ 41,806	$ 55,660
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Accounts payable	$ 1,035	$ 624
Accrued expenses and other current liabilities	2,184	2,435
Operating lease liabilities	1,091	504
Current portion of long-term debt	1,089	—
Total current liabilities	5,399	3,563
Long-term debt, net of issuance costs and discount	8,877	9,810
Operating lease liabilities, net of current portion	5,239	—
Total liabilities	19,515	13,373
COMMITMENTS AND CONTINGENCIES (Note 14)		
STOCKHOLDERS' EQUITY:		
Preferred stock, par value of $0.0001 per share; 25,000,000 shares authorized; no shares issued and outstanding as of September 30, 2020 and December 31, 2019.	—	—
Common stock, par value of $0.0001 per share; 175,000,000 shares authorized; 23,685,161 and 23,036,943 shares issued and outstanding as of September 30, 2020 and December 31, 2019, respectively	3	3
Additional paid-in capital	115,379	109,640
Accumulated other comprehensive income	—	14
Accumulated deficit	(93,091)	(67,370)
Total stockholders' equity	22,291	42,287
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 41,806	$ 55,660

See notes to unaudited condensed consolidated financial statements.

LogicBio Therapeutics, Inc.

Condensed Consolidated Statements of Operations
(In thousands, except share and per share data)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
REVENUE				
Service revenue	$ 926	$ —	$ 2,912	$ —
Total revenue	926	—	2,912	—
OPERATING EXPENSES				
Research and development	5,492	8,858	18,560	22,278
General and administrative	3,200	2,175	9,421	7,331
Total operating expenses	8,692	11,033	27,981	29,609
LOSS FROM OPERATIONS	(7,766)	(11,033)	(25,069)	(29,609)
OTHER INCOME (EXPENSE), NET:				
Interest income	2	389	179	1,243
Interest expense	(276)	(271)	(821)	(271)
Other income (expense), net	1	(3)	(10)	(4)
Total other (expense) income, net	(273)	115	(652)	968
Loss before income taxes	(8,039)	(10,918)	(25,721)	(28,641)
Income tax provision	—	—	—	(22)
Net loss	$ (8,039)	$ (10,918)	$ (25,721)	$ (28,663)
Net loss per share—basic and diluted	$ (0.34)	$ (0.48)	$ (1.10)	$ (1.27)
Weighted-average common stock outstanding—basic and diluted	23,599,052	22,677,205	23,367,804	22,491,282

See notes to unaudited condensed consolidated financial statements.

LogicBio Therapeutics, Inc.

Condensed Consolidated Statements of Comprehensive Loss
(In thousands)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Net loss	$ (8,039)	$ (10,918)	$ (25,721)	$ (28,663)
Other comprehensive income:				
Unrealized (loss) gain on investments	—	(16)	—	20
Foreign currency translation adjustment	—	2	—	8
Comprehensive loss	$ (8,039)	$ (10,932)	$ (25,721)	$ (28,635)

See notes to unaudited condensed consolidated financial statements.

LogicBio Therapeutics, Inc.

Condensed Consolidated Statements of Stockholders' Equity
(In thousands, except share and per share data)

	Common Stock $0.0001 Par Value		Additional Paid-in	Accumulated Other Comprehensive	Accumulated	Total Stockholders'
	Shares	Amount	Capital	(Loss) Income	Deficit	Equity
BALANCE, January 1, 2019	22,188,393	$ 3	$ 107,473	$ (9)	$ (27,242)	$ 80,225
Vesting of restricted stock	160,337	—	—	—	—	—
Unrealized gain on investments	—	—	—	9	—	9
Foreign currency translation adjustment	—	—	—	3	—	3
Stock-based compensation expense	—	—	276	—	—	276
Net loss	—	—	—	—	(7,697)	(7,697)
BALANCE, March 31, 2019	22,348,730	3	107,749	3	(34,939)	72,816
Vesting of restricted stock	160,332	—	—	—	—	—
Exercise of options	13,454	—	82	—	—	82
Unrealized gain on investments	—	—	—	27	—	27
Foreign currency translation adjustment	—	—	—	3	—	3
Stock-based compensation expense	—	—	531	—	—	531
Net loss	—	—	—	—	(10,048)	(10,048)
BALANCE, June 30, 2019	22,522,516	3	108,362	33	(44,987)	63,411
Vesting of restricted stock	160,332	—	—	—	—	—
Exercise of options	83,082	—	61	—	—	61
Issuance of warrants related to loan and security agreement	—	—	136	—	—	136
Unrealized loss on investments	—	—	—	(16)	—	(16)
Foreign currency translation adjustment	—	—	—	2	—	2
Stock-based compensation expense	—	—	522	—	—	522
Net loss	—	—	—	—	(10,918)	(10,918)
BALANCE, September 30, 2019	22,765,930	$ 3	$ 109,081	$ 19	$ (55,905)	$ 53,198
BALANCE, January 1, 2020	23,036,943	$ 3	$ 109,640	$ 14	$ (67,370)	$ 42,287
Vesting of restricted stock	160,340	—	—	—	—	—
Exercise of options	19,378	—	84	—	—	84
Realized gain on investments	—	—	—	(14)	—	(14)
Stock-based compensation expense	—	—	805	—	—	805
Net loss	—	—	—	—	(9,455)	(9,455)
BALANCE, March 31, 2020	23,216,661	3	110,529	—	(76,825)	33,707
Vesting of restricted stock	18,642	—	—	—	—	—
Issuance of common stock, net of issuance costs of $33	269,540	—	1,907	—	—	1,907
Stock-based compensation expense	—	—	769	—	—	769
Net loss	—	—	—	—	(8,227)	(8,227)
BALANCE, June 30, 2020	23,504,843	3	113,205	—	(85,052)	28,156
Vesting of restricted stock	13,381	—	—	—	—	—
Issuance of common stock, net of issuance costs of $41	166,937	—	1,320	—	—	1,320
Stock-based compensation expense	—	—	854	—	—	854
Net loss	—	—	—	—	(8,039)	(8,039)
BALANCE, September 30, 2020	23,685,161	$ 3	$ 115,379	$ —	$ (93,091)	$ 22,291

See notes to unaudited condensed consolidated financial statements.

LogicBio Therapeutics, Inc.

Condensed Consolidated Statements of Cash Flows
(In thousands)

	Nine Months Ended September 30,	
	2020	2019
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (25,721)	$ (28,663)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation expense	349	189
Net amortization of premiums and discounts on investments	26	(371)
Stock-based compensation expense	2,428	1,329
Non-cash interest expense	156	50
Non-cash lease expense	1,366	865
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	917	(354)
Accounts payable	411	779
Accrued expenses and other current liabilities	(1,368)	(872)
Net cash used in operating activities	(21,436)	(27,048)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchase of investments	—	(58,490)
Maturities of investments	17,500	34,400
Purchase of property and equipment	(343)	(1,084)
Net cash provided by (used in) investing activities	17,157	(25,174)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from borrowings under loan and security agreement, net of issuance costs	—	9,845
Proceeds from exercise of stock options	84	143
Net proceeds from stock issuances	3,227	—
Net cash provided by financing activities	3,311	9,988
Effect on foreign exchange rates on cash and cash equivalents		8
NET DECREASE IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH	(968)	(42,226)
Cash, cash equivalents and restricted cash at beginning of year	33,875	81,052
Cash, cash equivalents and restricted cash at end of period	$ 32,907	$ 38,826
RECONCILIATION OF CASH, CASH EQUIVALENTS AND RESTRICTED CASH		
Cash and cash equivalents	$ 32,285	$ 38,680
Short-term restricted cash	—	146
Long-term restricted cash	622	—
Total cash, cash equivalents and restricted cash	$ 32,907	$ 38,826
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION:		
Cash paid for interest	$ 666	$ 221
Cash paid for income taxes	$ —	$ 6
SUPPLEMENTAL DISCLOSURE OF NON-CASH ACTIVITIES:		
Right-of-use assets obtained in exchange for operating lease obligation	$ 6,428	$ 1,323
Property and equipment purchases in accounts payable and accrued expenses	$ —	$ 24
Deferred financing costs in accounts payable and accrued expenses	$ 133	$ —

See notes to unaudited condensed consolidated financial statements.

1. NATURE OF BUSINESS AND BASIS OF PRESENTATION

Business Overview

LogicBio Therapeutics, Inc. ("LogicBio" or the "Company") was incorporated in 2014 as a Delaware corporation. Its principal offices are in Lexington, Massachusetts. LogicBio is a company dedicated to extending the reach of genetic medicine with pioneering targeted delivery platforms. The Company's proprietary genome editing technology platform, GeneRide, enables the site-specific integration of a therapeutic transgene without nucleases or exogenous promoters by harnessing the native process of homologous recombination. LogicBio is developing LB-001, a wholly owned genome editing program leveraging GeneRide for the treatment of methylmalonic acidemia ("MMA"). In addition, the Company has a research collaboration with Takeda Pharmaceutical Company Limited ("Takeda") to develop LB-301, an investigational therapy leveraging GeneRide for the treatment of the rare pediatric disease Crigler-Najjar syndrome ("CN").

LogicBio is also developing a Next Generation Capsid platform for use in gene editing and gene therapy. At the American Society of Gene & Cell Therapy ("ASGCT") conference in May 2020, data was presented showing that the capsids deliver highly efficient functional transduction of human hepatocytes in a humanized mouse model. The data also showed the capsids exhibited improved manufacturability with low levels of pre-existing neutralizing antibodies in human samples. Based on this data, the Company believes the top-tier capsid candidates from this effort demonstrated the potential to achieve significant improvements over benchmark adeno-associated viruses ("AAVs") that are currently in clinical development. The Company is developing these highly potent vectors for internal development candidates and potentially for business development collaborations.

Based on the Company's GeneRide technology, LogicBio is developing its lead product candidate, LB-001, to treat MMA in pediatric patients with MMA. The SUNRISE trial is a multi-center, open-label, Phase 1/2 clinical trial designed to assess the safety and tolerability of a single intravenous infusion of LB-001 in pediatric patients with MMA characterized by methylmalonyl-CoA mutase gene (MMUT) mutations. Six leading centers in the United States are expected to participate in the SUNRISE Phase 1/2 trial.

LogicBio believes that achieving clinical proof of concept in an inherited liver disease such as MMA will validate the Company's platform technology, including its potential application to other organs and diseases. In addition to MMA and CN, LogicBio has demonstrated proof of concept of its platform in hemophilia B and alpha-1-antitrypsin deficiency ("A1ATD") animal disease models. The Company expects to select future product candidates from these and other genetic diseases addressed by targeting the liver initially, and later by targeting the central nervous system, or CNS, and muscle.

Since its inception, the Company has devoted the majority of its efforts to business planning, research and development, developing markets, raising capital, and recruiting management and technical staff. The Company is subject to a number of risks similar to those of other companies conducting high-risk, early-stage research and development of product candidates. Principal among these risks are a dependency on key individuals and intellectual property, competition from other products and companies, and the technical risks associated with the successful research, development and clinical manufacturing of its product candidates. The Company's success is dependent upon its ability to continue to raise additional capital in order to fund ongoing research and development, meet its obligations and, ultimately, obtain regulatory approval of its products, successfully commercialize its products, generate revenue and attain profitable operations.

COVID-19 Impact

The Company is closely monitoring the COVID-19 pandemic in order to promote the safety of its personnel and to continue advancing its research and development activities. Since mid-March, the Company has ceased all business travel and most of its non-laboratory employees have been working remotely. After being limited to working in shifts on-premises through early July, the Company's laboratory employees have returned to normal working schedules on-premises to conduct in-house research and development activities with social distancing and other protective measures. The Company plans to maintain these or similar restrictions until it believes employees can fully resume such activities in accordance with federal, state and local requirements and guidelines.

The COVID-19 pandemic did not have a material impact on the Company's results of operations, cash flow and financial position as of and for the three and nine months ended September 30, 2020. However, the full extent to which the COVID-19 pandemic will directly or indirectly impact the Company's business, results of operations and financial position will depend on future developments that are uncertain and cannot be accurately predicted.

Liquidity and Capital Resources

The Company has had recurring losses and incurred a loss of $25,721 during the nine months ended September 30, 2020. Net cash used in operations for the nine months ended September 30, 2020 was $21,436. The Company expects to continue to generate operating losses and use cash in operations for the foreseeable future. As of September 30, 2020, the Company had cash and cash equivalents of $32,285. In addition, on October 5, 2020, the Company completed a follow-on offering of its common stock resulting in net proceeds of approximately $45,190. The Company believes that its cash and cash equivalents at September 30, 2020, plus the net proceeds from the October 2020 follow-on offering, will be sufficient to fund its operating expenses and capital expenditure requirements for at least the next twelve months from the date these financial statements are issued and therefore the conditions raising substantial doubt raised in prior periods has been alleviated.

The Company will require substantial additional capital to fund its research and development and ongoing operating expenses. Management's plans to mitigate this risk include raising additional capital through equity or debt financings, or through strategic transactions. These plans may also include the possible deferral of certain operating expenses unless and until additional capital is received. There can be no assurance that the Company will be successful in raising additional capital or that such capital, if available, will be on terms that are acceptable to the Company, or that the Company will be successful in deferring certain operating expenses. While there can be no assurance the Company will be able to successfully reduce operating expenses or raise additional capital, management believes its historical success in managing cash flows and obtaining capital will continue in the foreseeable future.

Basis of Presentation

The accompanying condensed consolidated financial statements have been prepared by the Company in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP") and pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC") for interim financial statements. Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted pursuant to such rules and regulations. However, the Company believes that the disclosures are adequate to make the information presented not misleading. These condensed consolidated financial statements should be read in conjunction with the Company's audited consolidated financial statements and the notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on March 16, 2020.

The unaudited interim condensed consolidated financial statements have been prepared on the same basis as the audited consolidated financial statements. In the opinion of management, the accompanying unaudited interim condensed consolidated financial statements contain all adjustments which are necessary for a fair statement of the Company's financial position as of September 30, 2020, consolidated results of operations for the three and nine months ended September 30, 2020 and 2019 and cash flows for the nine months ended September 30, 2020 and 2019. Such adjustments are of a normal and recurring nature. The results of operations for the three and nine months ended September 30, 2020 are not necessarily indicative of the results of operations that may be expected for the year ending December 31, 2020.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Significant Accounting Policies

The Company's significant accounting policies are disclosed in the audited consolidated financial statements and the notes thereto, which are included in the Company's Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on March 16, 2020. Since the date of those financial statements, there have been no material changes to its significant accounting policies other than the Company's significant accounting policy over revenue recognition under ASC 606 (defined below) which is discussed in this note.

Revenue Recognition

To date, the Company's only revenue has consisted of service revenue, all of which is attributable to research cost reimbursement under the Company's January 2020 research agreement with Takeda for the development of product candidate LB-301 to treat CN (the "Takeda Agreement"). The Company has not generated any revenue from product sales and does not expect to generate any revenue from product sales for the foreseeable future.

The Company recognizes revenue in accordance with Accounting Standards Codification ("ASC") Topic 606, *Revenue from Contracts with Customers* ("ASC 606"). ASC 606 applies to all contracts with customers, except for contracts that are within the scope of other standards, such as leases, insurance, collaboration arrangements and financial instruments. Under ASC 606, the Company recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration the Company expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of ASC 606, the Company performs the following five steps:

(i) identification of the promised goods or services in the contract;

(ii) determination of whether the promised goods or services are performance obligations including whether they are distinct in the context of the contract;

(iii) measurement of the transaction price, including the constraint on variable consideration;

(iv) allocation of the transaction price to the performance obligations; and

(v) recognition of revenue when (or as) each performance obligation is satisfied.

If a contract is determined to be within the scope of ASC 606 at inception, the Company assesses the goods or services promised within such contract, determines which of those goods and services are performance obligations, and assesses whether each promised good or service is distinct. The Company may provide options to additional items in such arrangements, which are accounted for as separate contracts when the customer elects to exercise such options, unless the option provides a material right to the customer. The Company determines transaction price based on the amount of consideration the Company expects to receive for transferring the promised goods or services in the contract. Consideration may be fixed, variable, or a combination of both. The Company then allocates the transaction price to each performance obligation based on the relative standalone selling price and recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) control is transferred to the customer and the performance obligation is satisfied.

Amounts received prior to satisfying the revenue recognition criteria are recorded as deferred revenue in the Company's condensed consolidated balance sheets. If the related performance obligation is expected to be satisfied within the next twelve months this will be classified in current liabilities. Amounts recognized as revenue prior to receipt are recorded as contract assets in the Company's balance sheets. If the Company expects to have an unconditional right to receive the consideration in the next twelve months, this will be classified in current assets. A net contract asset or liability is presented for each contract with a customer.

Recently Adopted Accounting Pronouncements

On January 1, 2020, the Company adopted Financial Accounting Standards Board ("FASB") Accounting Standards Update ("ASU") 2016-13, *Measurement of Credit Losses on Financial Instruments*. This ASU requires that credit losses be reported using an expected losses model rather than the incurred losses model that was previously used, and establishes additional disclosures related to credit risks. For available-for-sale debt securities with unrealized losses, the standard requires allowances to be recorded instead of reducing the amortized cost of the investment. The adoption of this standard did not have a material impact on the Company's condensed consolidated financial statements and related disclosures.

Recently Issued Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the FASB or other standard setting bodies that are adopted by the Company as of the specified effective date. The Company believes that the impact of recently issued standards that are not yet effective will not have a material impact on the Company's consolidated financial statements upon adoption.

In March 2020, the FASB issued ASU 2020-04, *Facilitation of the Effects of Reference Rate Reform on Financial Reporting (Topic 848)*. This ASU provides optional expedients and exceptions for applying U.S. GAAP to transactions affected by reference rate (e.g., LIBOR) reform if certain criteria are met, for a limited period of time to ease the potential burden in accounting for (or recognizing the effects of) reference rate reform on financial reporting. The ASU is effective as of March 12, 2020 through December 31, 2022. The Company will evaluate transactions or contract modifications, including any related to its July 2019 loan and security agreement which uses LIBOR as a reference rate, occurring as a result of reference rate reform and determine whether to apply the optional guidance on an ongoing basis. The ASU is currently not expected to have a material impact on the Company's condensed consolidated financial statements and related disclosures.

3. FAIR VALUE MEASUREMENTS

The following tables present information about the Company's financial assets measured at fair value on a recurring basis and indicate the level of the fair value hierarchy utilized to determine such fair values:

Description	September 30, 2020	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Other Observable Inputs (Level 3)
Assets				
Money market funds and other cash equivalents	$ 30,785	$ 30,785	$ —	$ —
Total financial assets	$ 30,785	$ 30,785	$ —	$ —

Description	December 31, 2019	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Other Observable Inputs (Level 3)
Assets				
Overnight repurchase agreements	$ 30,001	$ —	$ 30,001	$ —
U.S. Treasury securities	17,540	17,540	—	—
Money market funds and other cash equivalents	1,093	1,093	—	—
Total financial assets	$ 48,634	$ 18,633	$ 30,001	$ —

When developing fair value estimates, the Company maximizes the use of observable inputs and minimizes the use of unobservable inputs. When available, the Company uses quoted market prices to measure fair value. The valuation technique used to measure fair value for the Company's Level 1 and Level 2 assets is a market approach, using prices and other relevant information generated by market transactions involving identical or comparable assets. If market prices are not available, the fair value measurement is based on models that use primarily market-based parameters including yield curves, volatilities, credit ratings and currency rates. In certain cases where market rate assumptions are not available, the Company is required to make judgments about assumptions market participants would use to estimate the fair value of a financial instrument.

The Company did not have any transfers of assets between Level 1 and Level 2 of the fair value measurement hierarchy during the nine months ended September 30, 2020.

4. INVESTMENTS

As of September 30, 2020, the Company did not hold any short-term or long-term investments.

As of December 31, 2019, the Company held available-for-sale investments which were included in short-term investments on the condensed consolidated balance sheet and summarized in the table below:

	December 31, 2019			
	Cost Basis	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
U.S. Treasury securities	$ 17,526	$ 14	$ —	$ 17,540
Total	$ 17,526	$ 14	$ —	$ 17,540

Certain short-term debt securities with original maturities of less than 90 days are included in cash and cash equivalents on the condensed consolidated balance sheet and are not included in the table above. As of December 31, 2019, all investments had a contractual maturity within one year.

5. ACCRUED EXPENSES AND OTHER CURRENT LIABILITIES

Accrued expenses and other current liabilities at September 30, 2020 and December 31, 2019 consisted of the following:

	September 30, 2020	December 31, 2019
Accrued compensation and benefits	$ 1,003	$ 1,155
Accrued professional services	977	1,004
Other	204	276
Total accrued expenses and other current liabilities	$ 2,184	$ 2,435

Accrued compensation and benefits consists primarily of accrued bonuses. Accrued professional services consists primarily of consulting services, legal services and services provided by contract research organizations (“CRO”) and contract manufacturing organizations (“CMO”).

6. DEBT

On July 2, 2019 (the “Closing Date”), the Company entered into a loan and security agreement (the “Loan Agreement”), for term loans with Oxford Finance LLC (“Oxford”) and Horizon Technology Finance Corporation (“Horizon,” and, together with Oxford, the “Lenders”). The Loan Agreement allows the Company to borrow up to $20,000 issuable in two equal tranches (the “Term Loans”). On the Closing Date, the first tranche of $10,000 was drawn down by the Company (the “Term A Loan”). Pursuant to an amendment to the Loan Agreement entered into in September 2020, the second tranche of $10,000 will be available to the Company until the earliest of (i) the date that is thirty (30) days immediately following the date by which certain development milestones and equity financing events shall have occurred, (ii) March 31, 2021 and (iii) the occurrence of an Event of Default (as defined in the Loan Agreement) (the “Term B Loan”).

The outstanding loan balance will accrue interest at the greater of (i) the rate of the one-month U.S. LIBOR rate plus 6.25% and (ii) 8.75%. The Loan Agreement provides for an interest only period until July 1, 2021, followed by thirty-six equal monthly payments of principal and interest continuing through June 1, 2024 (the “Maturity Date”). The Company has the option to prepay the outstanding balance prior to maturity, subject to a prepayment fee of 1.0% to 3.0% depending upon when the prepayment occurs. Upon repayment of the Term Loans, the Company is required to make a final payment to the Lenders equal to 4.5% of the original principal amount of the Term Loans funded which will be accrued by charges to interest expense over the term of the loans using the effective interest method.

In conjunction with the Loan Agreement, the Company issued 15,686 of common stock warrants (“Warrants”) to the Lenders at a per share exercise price of $12.75, a maximum contractual term of 10 years and exercisable immediately. The fair value of the Warrants was accounted for as a debt discount and calculated to be approximately $136 using the Black-Scholes method. The Company determined the Warrants met the criteria for equity classification, and, as such, the fair value of the Warrants is recorded as additional paid-in capital on the condensed consolidated balance sheets. Finally, the Company incurred issuance costs of approximately $150. Both the debt discount and issuance costs will be accreted to Notes payable by charges to interest expense over the term of the Term A Loan using the effective interest method.

The Loan Agreement contains customary representations, warranties and covenants and also includes customary events of default. Events of default include, among other things, the Company’s failure to pay amounts due, a breach of certain covenants, a material adverse change event, misrepresentations and judgments. Upon the occurrence of an event of default, a default interest rate of an additional 5.00% per annum may be applied to the outstanding loan balances, and the Lenders may declare all outstanding obligations immediately due and payable. Borrowings under the Loan Agreement are collateralized by substantially all the Company’s assets, other than its intellectual property, which include maintaining certain cash balances in controlled accounts.

Interest expense was $276 and $821 for the three and nine months ended September 30, 2020, respectively. Interest expense was $271 for the three and nine months ended September 30, 2019. The effective rate on the Loan Agreement, including the amortization of the debt discount and issuance costs, and accretion of the final payment, was 9.7% at September 30, 2020. The components of the long-term debt balance are as follows:

	September 30, 2020	December 31, 2019
Notes payable, gross	$ 10,000	$ 10,000
Less: Unamortized debt discount and issuance costs	(196)	(254)
Accretion of final payment fee	162	64
Carrying value of notes payable	9,966	9,810
Less: Current portion of long-term debt	(1,089)	—
Long-term debt, net of issuance costs and discount	$ 8,877	$ 9,810

As of September 30, 2020, the estimated future principal payments due were as follows:

	As of September 30, 2020
2020	$ -
2021	1,945
2022	3,333
2023	3,333
2024	1,389
Total principal payments	$ 10,000

7. STOCK-BASED COMPENSATION

Equity Incentive Plans

In December 2014, the Company adopted the LogicBio Therapeutics, Inc. 2014 Equity Incentive Plan, as amended (the “2014 Plan”), for the issuance of stock options and other stock-based awards. In October 2018, the Company’s 2018 Equity Incentive Plan (the “2018 Plan”) became effective and as a result, no further awards will be made under the 2014 Plan. The 2018 Plan was established to provide equity-based ownership opportunities for employees and directors, as well as outside consultants and advisors. Any previously granted awards under the 2014 Plan will remain outstanding in accordance with their respective terms.

Under the 2018 Plan, there is an annual increase on January 1 of each year from 2019 until 2028, by the lesser of (i) 4% of the number of shares of common stock outstanding on December 31 of the prior year and (ii) an amount determined by the Board. On January 1, 2020, the Company increased the number of shares available for future grant under the 2018 Plan by 926,786 shares. At September 30, 2020, there were 1,284,586 shares available for future grant under the 2018 Plan.

The 2018 Plan is administered by the Board. The exercise prices, vesting and other restrictions are determined at the discretion of the Board, except that the exercise price per share of stock options may not be less than 100% of the fair market value of the common stock on the date of grant. Stock options awarded under the 2018 Plan expire 10 years after the grant date, unless the Board sets a shorter term. Vesting periods for awards under the 2018 Plan are determined at the discretion of the Board. Incentive stock options granted to employees and shares of restricted stock granted to employees, officers, members of the Board, advisors, and consultants of the Company typically vest over four years. Non-statutory options, shares of restricted stock and restricted stock units (“RSU”) granted to employees, officers, members of the Board, advisors, and consultants of the Company typically vest over one to four years.

Stock Options

During the nine months ended September 30, 2020 and 2019, the Company granted options to purchase 870,203 and 236,456 shares of common stock, respectively, with a weighted-average grant date fair value per share of $4.80 and $6.70, respectively. The Company recorded stock-based compensation expense for options granted of $1,999 and $1,130 during the nine months ended September 30, 2020 and 2019, respectively. As of September 30, 2020, there were 2,835,149 outstanding options, of which 1,412,386 were unvested corresponding to $5,653 of unrecognized stock-based compensation expense related to unvested stock options to be recognized over a weighted-average period of 2.7 years.

Restricted Common Stock

The Company has granted shares of restricted common stock with time-based and performance-based vesting conditions from time to time. The Company did not grant any restricted common stock during the nine months ended September 30, 2020 or 2019. The Company recorded stock-based compensation expense for restricted common stock granted of $108 and $199 during the nine months ended September 30, 2020 and 2019, respectively. As of September 30, 2020, there were 51,300 shares of unvested restricted common stock outstanding and $152 of unrecognized stock-based compensation expense related to unvested restricted common stock to be recognized over a weighted-average period of 1.3 years.

Restricted Stock Units

The Company has granted RSUs with time-based conditions from time to time. Each RSU represents the right to receive one share of the Company's common stock upon vesting. The Company has issued RSUs that vest based on the passage of time assuming continued service with the Company. The fair value is calculated based upon the Company's closing stock price on the date of grant, and the stock-based compensation expense is recognized over the vesting period. During the nine months ended September 30, 2020, the Company granted 125,737 RSUs. There were no RSUs granted during the nine months ended September 30, 2019. The Company recorded stock-based compensation for RSUs granted of $321 and $0 during the nine months ended September 30, 2020 and 2019, respectively. As of September 30, 2020, there were 120,437 RSUs outstanding and $373 of unrecognized stock-based compensation expense related to unvested RSUs to be recognized over a weighted-average period of 0.5 years.

Stock-Based Compensation Expense

Total stock-based compensation expense recorded as research and development and general and administrative expenses, respectively, for employees, directors and non-employees for the nine months ended September 30, 2020 and 2019 is as follows:

	Nine Months Ended September 30,	
	2020	2019
Research and development	$ 776	$ 553
General and administrative	1,652	776
Total stock-based compensation expense	$ 2,428	$ 1,329

8. STOCKHOLDERS' EQUITY

Open Market Sale Agreement

On November 15, 2019, the Company entered into an Open Market Sale Agreement (the "Open Market Sale Agreement") with Jefferies LLC, as agent ("Jefferies"), pursuant to which the Company may issue and sell shares of its common stock having an aggregate offering price of up to $50,000 (the "Open Market Shares") from time to time through Jefferies (the "Open Market Offering").

Under the Open Market Sale Agreement, Jefferies may sell the Open Market Shares by methods deemed to be an "at the market offering" as defined in Rule 415(a)(4) promulgated under the Securities Exchange Act of 1934, as amended. The Company may sell the Open Market Shares in amounts and at times to be determined by the Company from time to time subject to the terms and conditions of the Open Market Sale Agreement, but it has no obligation to sell any of the Open Market Shares in the Open Market Offering.

The Company or Jefferies may suspend or terminate the offering of Open Market Shares upon notice to the other party and subject to other conditions. The Company has agreed to pay Jefferies commissions for its services in acting as agent in the sale of the Open Market Shares in the amount of up to 3.0% of gross proceeds from the sale of the Open Market Shares pursuant to the Open Market Sale Agreement. The Company has also agreed to provide Jefferies with customary indemnification and contribution rights.

During the nine months ended September 30, 2020, the Company issued 436,477 shares of its common stock at a weighted-average price of $7.56 per share, resulting in net proceeds to the Company of $3,227. At September 30, 2020, the Company had $46,700 in aggregate gross offering amount available under the Open Market Sale Agreement.

October 2020 Underwritten Offering

On October 5, 2020, the Company completed a follow-on offering under its shelf registration statement on Form S-3 (File No. 333-234735) and a related prospectus supplement pursuant to which the Company issued an aggregate of 8,050,000 shares of the Company's common stock, which included the full exercise of the underwriters' option to purchase additional shares, at a public offering price of $6.00 per share. The Company received aggregate net proceeds of approximately $45,190 from the offering after deducting underwriting discounts and commissions and other estimated offering expenses.

9. REVENUE

In January 2020, the Company entered into a research agreement with Takeda for the development of product candidate LB-301 to treat CN. Under the terms of the Takeda Agreement, Takeda will fund all research and development activities related to the development of LB-301 under a pre-agreed upon research plan (the "Research Plan"). The Takeda Agreement also provides Takeda with an exclusive, non-binding option to enter into a license agreement to the LB-301 program upon the exercise of an option (the "License Option").

The Company assessed the Takeda Agreement in accordance with ASC 606 and concluded that it represents a contract with a customer and is within the scope of ASC 606. The promised goods and services represent one combined performance obligation and the entire transaction price will be allocated to that single combined performance obligation. In addition, the Company concluded that the License Option does not provide any discounts or other rights. Terms related to an exclusive license negotiated after the exercise of the License Option will be part of a separate contract and reflect applicable standalone selling prices. As such, the Company concluded the License Option is not considered to be a material right.

Under the Takeda Agreement, Takeda is obligated to reimburse the Company for the costs incurred under the Research Plan. Costs incurred are billed by the Company to Takeda from time to time. The Company elected to recognize revenue under the "right to invoice" practical expedient based on the Company's right to invoice Takeda at an amount that approximates the value to the customer and the performance completed to date. The Company recognized $926 and $2,912 as service revenue under the Takeda Agreement during the three and nine months ended September 30, 2020, respectively.

10. INCOME TAXES

For the nine months ended September 30, 2020 and the year ended December 31, 2019, the Company maintained a full valuation allowance on federal and state deferred tax assets since management does not forecast the Company to be in a taxable position in the near future. The income tax provision within the condensed consolidated statements of operations for the nine months ended September 30, 2019 related to tax expense of the wholly owned foreign subsidiary, LogicBio Therapeutics Research Ltd, which ceased operations in 2018 and was formally dissolved in November 2019.

11. LOSS PER SHARE

Basic loss per share is computed by dividing net loss by the weighted-average shares of common stock outstanding, without consideration to common stock equivalents:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Numerator:				
Net loss	$ (8,039)	$ (10,918)	$ (25,721)	$ (28,663)
Denominator:				
Weighted-average common stock outstanding	23,599,052	22,677,205	23,367,804	22,491,282
Net loss per share — basic and diluted	$ (0.34)	$ (0.48)	$ (1.10)	$ (1.27)

The Company's potentially dilutive shares, which include any outstanding stock options, warrants and unvested restricted stock, are considered to be common stock equivalents and are only included in the calculation of diluted net loss when their effect is dilutive.

The Company excluded the following potential common stock equivalents from the computation of diluted net loss per share attributable to common stockholders because including them would have had an anti-dilutive effect for the three and nine months ended September 30, 2020 and 2019.

	September 30, 2020	September 30, 2019
Unvested restricted common stock	51,300	403,695
Unvested restricted stock units	120,437	—
Options to purchase common stock	2,835,149	2,332,500
Term A Loan warrants	15,686	15,686

12. LEASES

The Company has historically entered into lease arrangements for its facilities and certain equipment. As of September 30, 2020, the Company had two operating leases with required future minimum payments. In applying the guidance under ASC Topic 842, *Leases* ("ASC 842"), the Company determined the classification of these leases to be operating leases and recorded a right-of-use asset and lease liability as of the commencement date of each lease. The Company's leases generally do not include termination or purchase options. From time to time, leases may include options to renew the lease after the expiration of the initial lease term. A renewal period is included in the lease term only when it reasonably certain that the Company will exercise such renewal options. As of September 30, 2020, no renewal options existed that the Company felt were reasonably certain of being exercised.

In November 2019, the Company entered into a lease agreement for office, laboratory and vivarium space located at 65 Hayden Avenue Lexington, Massachusetts ("65 Hayden Ave Lease") to replace the Company's prior headquarters located at 99 Erie Street Cambridge, Massachusetts. Under the terms of the 65 Hayden Ave Lease, the Company leases approximately 23,901 square feet of space and pays an initial annual base rent of approximately $1,494, which is subject to scheduled annual increases, plus certain operating expenses and taxes. The Company took possession of the space on April 1, 2020 ("Lease Commencement Date") and the lease will continue through July 1, 2025 ("Lease Termination Date"). The Company has an option to extend the lease for a single additional term of 5 years. Upon execution of the 65 Hayden Ave Lease, the Company executed a $622 cash-collateralized letter of credit. Lease payments are anticipated to begin three months after the Lease Commencement Date and will continue in monthly installments through the Lease Termination Date.

At the Lease Commencement Date, the Company performed a lease assessment under the guidance prescribed in ASC 842 and concluded that the 65 Hayden Ave Lease was an operating lease. As such, the Company recorded an operating lease right-of-use asset and corresponding operating lease liability on the consolidated balance sheets of $6,428 which reflected the net present value of future payments under the lease. The discount rate used to calculate the net present value of future payments was the Company's incremental borrowing rate at the Lease Commencement Date, which was 7.6%.

Operating Leases

The following table contains a summary of the lease costs recognized under ASC 842 and other information pertaining to the Company's operating leases for the three and nine months ended September 30, 2020 and 2019:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Operating leases				
Lease cost				
Operating lease cost	$ 465	$ 312	$ 1,254	$ 901
Variable lease cost	$ 190	100	474	234
Total lease cost	$ 655	$ 412	$ 1,728	$ 1,135
Other year-to-date lease information				
Operating cash flows used for operating leases			$ 929	$ 836
Operating lease liabilities arising from obtaining right-of-use assets			$ 6,428	$ 1,323

The following table contains a summary of the lease liabilities recognized on the Company's condensed consolidated balance sheets as of September 30, 2020 and December 31, 2019:

	As of September 30, 2020	As of December 31, 2019
Other operating lease information		
Operating lease liabilities — short-term	$ 1,091	$ 504
Operating lease liabilities — long-term	$ 5,239	$ —
Weighted-average remaining lease term	4.7 years	0.7 years
Weighted-average discount rate	7.60%	7.04%

The variable lease costs for the three and nine months ended September 30, 2020 and 2019 include common area maintenance and other operating charges. As the Company's leases do not provide an implicit rate, the Company utilized its incremental borrowing rate based on what it would normally pay to borrow on a collateralized basis over a similar term for an amount equal to the lease payments at the commencement date in determining the present value of lease payments.

Future minimum lease payments under the Company's operating leases as of September 30, 2020 and December 31, 2019, were as follows:

	As of September 30, 2020	As of December 31, 2019
Maturity of lease liabilities		
2020	$ 403	$ 523
2021	1,516	—
2022	1,562	—
2023	1,609	—
2024	1,657	—
Thereafter	841	—
Total lease payments	7,588	523
Less: imputed interest	(1,258)	(19)
Total operating lease liabilities	$ 6,330	$ 504

13. RELATED PARTIES

From time to time, the Company is or has been party to consulting service agreements with each of its three co-founders. Under the terms of each agreement, the Company pays an annual fee of $68 for research and development consulting services. For the three and nine months ended September 30, 2020, the Company recorded research and development expense of $17 and $51, respectively, related to consulting services received from Mark Kay, who is one of the co-founders and a member of the Board. For the three and nine months ended September 30, 2019, the Company recorded $34 and $118, respectively, to research and development expenses under consulting service agreements with its three co-founders.

14. COMMITMENTS AND CONTINGENCIES

Litigation

On March 18, 2020, a purported shareholder class action, John R. Afinowicz v. LogicBio Therapeutics, Inc., et al., No. 2:20-cv-03009, was filed in the United States District Court for the District of New Jersey, naming the Company and certain of its officers as defendants. The lawsuit alleges that the Company made material misrepresentations and/or omissions of material fact relating to its Investigational New Drug submission for LB-001 in its public disclosures, in violation of Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 promulgated thereunder. The complaint seeks certification of a class of purchasers of the Company's common stock during the period from December 3, 2018 through February 10, 2020. The plaintiff seeks unspecified monetary damages on behalf of the putative class and an award of costs and expenses, including attorney's fees. On May 13, 2020, the defendants moved to transfer the action from the District of New Jersey to the District of Massachusetts, and on May 18, 2020, shareholder John R. Afinowicz moved for appointment as lead plaintiff. The Court granted Defendants' motion to transfer on June 2, 2020, and the case was transferred to the District of Massachusetts (No. 1:20-cv-11158) on June 18, 2020. The motion for appointment as lead plaintiff remains outstanding. The Company believes that this action is without merit and intends to defend it vigorously. At this time, no assessment can be made as to the likely outcome of this lawsuit or whether the outcome will be material to the Company.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the unaudited condensed consolidated financial statements and the accompanying notes included in this Quarterly Report on Form 10-Q and the audited consolidated financial information and the notes thereto included in our Annual Report on Form 10-K for the year ended December 31, 2019, which was filed with the Securities and Exchange Commission, or SEC, on March 16, 2020.

This discussion contains certain forward-looking statements that involve risks and uncertainties. Forward-looking statements are identified by words such as "believe," "will," "may," "estimate," "continue," "anticipate," "intend," "should," "plan," "expect," "predict," "could," "potentially" or the negative of these terms or similar expressions. You should read these statements carefully because they discuss future expectations, contain projections of future results of operations or financial condition, or state other "forward-looking" information. These statements relate to our future plans, objectives, expectations, intentions and financial performance and the assumptions that underlie these statements. These forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those anticipated in the forward-looking statements. Factors that might cause such a difference include, but are not limited to, those discussed in the "Risk Factors" section of our Annual Report on Form 10-K and our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2020. Forward-looking statements are based on our management's beliefs and assumptions and on information currently available to our management. These statements, like all statements in this Quarterly Report on Form 10-Q, speak only as of their date, and except as required by law, we undertake no obligation to update or revise these statements in light of future developments. We caution investors that our business and financial performance are subject to substantial risks and uncertainties.

Overview

We are a company dedicated to extending the reach of genetic medicine with pioneering targeted delivery platforms. Our proprietary genome editing technology platform, GeneRide, enables the site-specific integration of a therapeutic transgene without nucleases or exogenous promoters by harnessing the native process of homologous recombination. We are developing LB-001, a wholly owned genome editing program leveraging GeneRide for the treatment of methylmalonic acidemia, or MMA. In addition, we have a research collaboration with Takeda to develop LB-301, an investigational therapy leveraging GeneRide for the treatment of the rare pediatric disease Crigler-Najjar syndrome, or CN.

We are also developing a Next Generation Capsid platform for use in gene editing and gene therapy. At the American Society of Gene & Cell Therapy, or ASGCT, conference in May 2020, data was presented showing that the capsids deliver highly efficient functional transduction of human hepatocytes in a humanized mouse model. The data also showed the capsids exhibited improved manufacturability with low levels of pre-existing neutralizing antibodies in human samples. Based on this data, we believe the top-tier capsid candidates from this effort demonstrated the potential to achieve significant improvements over benchmark adeno-associated viruses, or AAVs, that are currently in clinical development. We are developing these highly potent vectors for internal development candidates and potentially for business development collaborations. We plan to announce data generated from translational animal models using these capsids in early 2021.

Based on our GeneRide technology, we are developing our lead product candidate, LB-001, to treat MMA. In August 2020, we announced the clearance of an investigational new drug application, or IND, to support the initiation of a Phase 1/2 clinical trial in pediatric patients with MMA. The SUNRISE trial is a multi-center, open-label, Phase 1/2 clinical trial designed to assess the safety and tolerability of a single intravenous infusion of LB-001 in pediatric patients with MMA characterized by methylmalonyl-CoA mutase gene (*MMUT*) mutations. Six leading centers in the United States are expected to participate in the SUNRISE Phase 1/2 trial.

The SUNRISE Phase 1/2 clinical trial is expected to enroll eight pediatric patients with ages ranging from 6 months to 12 years, initially starting with 3 to 12 year-old patients and then adding patients aged 6 months to 2 years. The SUNRISE trial will evaluate two dose cohorts of LB-001 (cohort 1 = 5 x 10^{13} vg/kg and cohort 2 = 1 x 10^{14} vg/kg). After initially starting with the lower dose in the 3 to 12 year old patient group (cohort 1, older age group, n=2), age de-escalation (cohort 1, younger age group, n=2) and dose escalation (cohort 2, older age group, n=2) are planned to occur in parallel. The decision to escalate the dose will be determined based solely on safety, whereas the decision to age de-escalate will be based on both safety and the detection of the pharmacodynamic biomarker, albumin-2A. Afterwards, based on a review of safety and/or the detection of albumin-2A, as applicable, from these two patient groups, the trial will progress to dosing additional patients in the younger age group at the higher dose (cohort 2, younger age group, n=2). The SUNRISE trial includes a six-week staggering interval between the dosing of each patient. Patients will participate in a pre-dosing observational period and will be administered a prophylactic steroid regimen. The primary endpoint of the SUNRISE trial is to assess the safety and tolerability of LB-001 at 52 weeks after a single infusion. Additional endpoints include changes in disease-related biomarkers, including serum methylmalonic acid, clinical outcomes such as growth and healthcare utilization, and the pharmacodynamic marker albumin-2A. We expect to enroll the first patient in early 2021 and provide an operational update regarding the dose escalation and age de-escalation in mid-2021. Based on the parallel age de-escalation and dose escalation plan, we expect to announce interim data from both age groups and both dose cohorts in the SUNRISE trial by the end of 2021.

In addition to the Phase 1/2 SUNRISE trial, we are also conducting a retrospective natural history study designed to evaluate disease progression in pediatric patients with MMA. We expect this study will provide us with insights into, among other matters, the course of disease progression, the impact of a liver transplant on the outcomes of MMA patients and potential endpoints such as the relevance of methylmalonic acid levels on clinical outcomes, with the goal of informing our future clinical development in MMA and our discussions with regulatory agencies as we look toward advancing our MMA program. We plan to announce preliminary findings from our retrospective natural history study in mid-2021.

In November 2020, the U.S. Food and Drug Administration, or FDA, granted Fast Track designation for LB-001 for the treatment of MMA. In addition, we have received rare pediatric disease designation and orphan drug designation from the FDA for LB-001.

We expect that the initial product candidates we develop, including LB-001, will address diseases by targeting the liver, including a category of diseases known as inborn errors of metabolism, a group of genetic disorders that disrupt normal metabolic processes. We believe that achieving clinical proof of concept in an inherited liver disease such as MMA will validate our GeneRide platform technology, including its potential application to other tissues and diseases. Our approach to expanding our indication pipeline may also incorporate indications such as propionic acidemia, which like MMA is an organic acidemia, where we can leverage the experience we have gained through our research and the modularity of our platform. Furthermore, we have demonstrated proof of concept of our platform in hemophilia B and alpha-1-antitrypsin deficiency, or A1ATD, animal disease models. We expect to select future product candidates from these and other genetic diseases addressed by targeting the liver initially, and later by targeting skeletal muscle and the central nervous system, or CNS. We plan to select at least one new indication from our preclinical portfolio in 2021 and commence IND-enabling studies utilizing our modular approach and leveraging learnings from our lead programs. Depending on data and timelines, we plan to evaluate the integration of our Next Generation Capsids into our future development programs.

Since our inception in 2014, we have devoted the majority of our efforts to business planning, research and development, developing and protecting our intellectual property, raising capital and recruiting management and technical staff. We do not have any products approved for sale and our only revenue has consisted of service revenue related to research cost reimbursement received under the Takeda agreement. Through September 30, 2020, we have raised approximately $9.8 million in net proceeds through the loan and security agreement in July 2019, approximately $72.3 million in net proceeds through our initial public offering, or IPO, in October 2018, approximately $33.1 million in net proceeds from the sale of our convertible preferred stock in 2016 and 2017 and $3.2 million in net proceeds through at-the-market sales of our common stock. In addition, in October 2020, we raised approximately $45.2 million in net proceeds, after deducting underwriting discounts and commissions and other estimated offering expenses, through a follow-on offering. We have incurred significant operating losses since our inception. Our ability to generate product revenue sufficient to achieve profitability will depend on the successful development and commercialization of our product candidate and any future product candidates. Our net loss was $25.7 million for the nine months ended September 30, 2020 and our accumulated deficit was $93.1 million as of September 30, 2020. We expect to continue to incur significant expenses and operating losses for the foreseeable future in connection with our ongoing activities.

Impact of COVID-19

We have been actively monitoring the COVID-19 pandemic and its impact globally. Our objectives have remained the same throughout the pandemic: to support the safety of our team members and their families and to continue our research and development activities to develop genetic medicines that have the potential to durably treat rare diseases in patients with significant unmet medical need.

Since mid-March 2020, our non-laboratory employees have been working remotely in order to comply with social distancing and other applicable orders and guidelines from federal, state and local government agencies. After being limited to working in shifts on-premises through early July, laboratory employees, whose work must be performed on premises, have returned to normal working schedules on-premises. We have also ceased all business travel for our employees. We plan to maintain these or similar restrictions on our business activities until we believe our employees can fully resume such business activities in accordance with federal, state and local requirements and guidelines.

Our research, development and manufacturing activities are dependent on our ability to continue our work on premises at our laboratory. We also rely on third parties located in countries that are affected by the COVID-19 pandemic, including the United States, for certain research, development and manufacturing activities. Similar to how we have restricted business activities at our premises, many of these third parties have also limited their staff from working on premises as part of their response to COVID-19. While we believe we and our third party vendors, suppliers and collaborators have largely been able to continue or resume essential business activities to a certain degree, we cannot predict the impact of the progression of the COVID-19 pandemic on future results due to a variety of factors, including the health of our and their employees, our ability to maintain operations, the ability of our third party vendors, suppliers and collaborators to continue operations, any further government and/or public actions taken in response to the pandemic and ultimately the length of the pandemic.

In April 2020, as part of our effort to preserve capital, our leadership team volunteered to accept salary cuts ranging from 15% to 20% which remained in effect until September 30, 2020. We have also adopted certain other cost-cutting measures aimed at enhancing our capital position. During the nine months ended September 30, 2020, we entered into "at-the-market" sales of our common stock resulting in net proceeds of approximately $3.2 million. In September 2020, we entered into an amendment to the loan and security agreement with Oxford Finance LLC and Horizon Technology Finance Corporation, or the Loan Agreement, to extend the availability of the $10.0 million second loan tranche until the earliest of (i) the date that is thirty (30) days immediately following the date by which certain development milestones and equity financing events shall have occurred, (ii) March 31, 2021 and (iii) the occurrence of an Event of Default (as defined in the Loan Agreement). While we intend to continue to evaluate ways to enhance our liquidity and capital position, our efforts will largely depend on future developments that are highly uncertain and cannot be predicted with confidence at this time.

We plan to continue to closely monitor the COVID-19 pandemic in order to ensure the safety of our personnel and to continue advancing our research and development activities.

Components of Results of Operations

Revenue

To date, our only revenue has consisted of research cost reimbursements recognized as service revenue, all of which is attributable to the January 2020 research agreement with Takeda to develop LB-301 in CN. We have not generated any revenue from product sales and do not expect to generate any revenue from product sales for the foreseeable future.

Operating Expenses

Research and Development Expenses

Research and development expenses consist primarily of costs incurred for our research activities, including our discovery efforts and the development of our product candidates, and include:

- salaries, benefits and other related costs, including stock-based compensation expense, for personnel engaged in research and development functions;
- license maintenance fees and milestone fees incurred in connection with various license agreements;
- the costs of laboratory supplies and acquiring, developing and manufacturing preclinical study and, eventually, clinical trial materials;
- expenses incurred under agreements with contract research organizations, or CROs, contract manufacturing organizations, or CMOs, as well as academic institutions and consultants that conduct our preclinical studies and other scientific development services;
- facility-related expenses, which include direct depreciation costs and allocated expenses for rent and maintenance of facilities and other operating costs;
- costs of outside consultants, including their fees and related expenses; and
- costs related to compliance with regulatory requirements.

We expense research and development costs as incurred. Costs for external development activities are recognized based on an evaluation of the progress to completion of specific tasks. Payments for these activities are based on the terms of the individual agreements, which may differ from the pattern of costs incurred, and are reflected in our financial statements as prepaid or accrued research and development expenses.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation, for personnel in our executive, finance, corporate and business development and administrative functions. General and administrative expenses also include professional fees for legal, patent, accounting, auditing, tax and consulting services, travel expenses, and facility-related expenses, which include direct depreciation costs and allocated expenses for rent and maintenance of facilities and other operating costs.

Other Income (Expense), Net

Interest income consists primarily of interest on our cash and cash equivalents and investments. Interest expense consists of interest expense related to the aggregate $10.0 million principal amount of the Term A Loan borrowing under the loan agreement in July 2019. A portion of the interest expense on the Term A Loan is non-cash expense relating to the accretion of the debt discount and amortization of issuance costs. During the three and nine months ended September 30, 2020, we recorded $0.3 million and $0.8 million, respectively, in interest expense, of which $0.2 million and $0.7 million, respectively, related to cash interest paid and the remainder to the accretion of the debt discount and amortization of issuance costs. Other expense, net consists primarily of foreign exchange losses.

Results of Operations

Comparison of the Three Months Ended September 30, 2020 and 2019

The following table summarizes our results of operations for the three months ended September 30, 2020 and 2019:

	Three Months Ended September 30,	
	2020	2019
	(in thousands)	
REVENUE		
Service revenue	$ 926	$ —
Total revenue	926	—
OPERATING EXPENSES		
Research and development	5,492	8,858
General and administrative	3,200	2,175
Total operating expenses	8,692	11,033
Loss from operations	(7,766)	(11,033)
Other (expense) income:		
Other (expense) income, net	(273)	115
Loss before income taxes	(8,039)	(10,918)
Income tax provision	—	—
Net loss	$ (8,039)	$ (10,918)

Revenue

Our revenue for the three months ended September 30, 2020 consisted solely of the $0.9 million in research cost reimbursements recognized as service revenue under the January 2020 research agreement with Takeda.

Research and Development Expenses

The following table summarizes our research and development expenses for the three months ended September 30, 2020 and 2019:

	Three Months Ended September 30,		(Decrease) / Increase
	2020	2019	
	(in thousands)		
LB-001 external development and manufacturing costs	$ 1,714	$ 5,546	$ (3,832)
Personnel-related costs	$ 1,536	1,534	2
Other research and development costs	$ 2,242	1,778	464
Total research and development expenses	$ 5,492	$ 8,858	$ (3,366)

Research and development expenses for the three months ended September 30, 2020 were $5.5 million, compared to $8.9 million for the three months ended September 30, 2019. The decrease of approximately $3.4 million was primarily due to decreases of approximately $3.8 million in external development and manufacturing expenses for our lead product candidate, LB-001. This decrease was partially offset by an increase of $0.5 million in other research and development expenses as we increased our overall research and development activities related GeneRide and our Next Generation Capsids. While there may be fluctuations on a quarterly basis, we expect that our research and development costs will decrease during 2020, as compared to 2019, as we have already incurred a significant proportion of the LB-001 external development and manufacturing costs needed to bring LB-001 into clinical development.

General and Administrative Expenses

General and administrative expenses were $3.2 million for the three months ended September 30, 2020, compared to $2.2 million for the three months ended September 30, 2019. The increase of approximately $1.0 million was primarily driven by an increase of $0.4 in stock-based compensation expense and a $0.4 million increase in legal fees and professional services. We expect that our general and administrative expenses will remain relatively consistent for 2020, as compared to 2019, although there may be fluctuations on a quarterly basis.

Other (Expense) Income, Net

Other expense, net was $0.3 million for the three months ended September 30, 2020, compared to other income, net of $0.1 million for the three months ended September 30, 2019. The net decrease was primarily related to a decrease in interest income due to lower interest rates and lower capital resource balances as well as interest expense related to the loan agreement.

Comparison of the Nine Months Ended September 30, 2020 and 2019

The following table summarizes our results of operations for the nine months ended September 30, 2020 and 2019:

	Nine Months Ended September 30,	
	2020	2019
	(in thousands)	
REVENUE		
Service revenue	$ 2,912	—
Total revenue	2,912	—
OPERATING EXPENSES		
Research and development	18,560	22,278
General and administrative	9,421	7,331
Total operating expenses	27,981	29,609
Loss from operations	(25,069)	(29,609)
Other (expense) income:		
Other (expense) income, net	(652)	968
Loss before income taxes	(25,721)	(28,641)
Income tax provision	—	(22)
Net loss	$ (25,721)	$ (28,663)

Revenue

Our revenue for the nine months ended September 30, 2020 consisted solely of the $2.9 million in research cost reimbursements recognized as service revenue under the January 2020 research agreement with Takeda.

Research and Development Expenses

The following table summarizes our research and development expenses for the nine months ended September 30, 2020 and 2019:

	Nine Months Ended September 30,		(Decrease) / Increase
	2020	2019	
	(in thousands)		
LB-001 external development and manufacturing costs	$ 7,601	$ 12,976	$ (5,375)
Personnel-related costs	4,700	4,229	471
Other research and development costs	6,259	5,073	1,186
Total research and development expenses	$ 18,560	$ 22,278	$ (3,718)

Research and development expenses for the nine months ended September 30, 2020 were $18.6 million, compared to $22.3 million for the nine months ended September 30, 2019. The decrease of approximately $3.7 million was primarily due to a decrease of approximately $5.4 million related to external development and manufacturing expenses for our lead product candidate, LB-001. This decrease was partially offset by an increase of $1.2 million in other research and development expenses as we increased our overall research and development activities related to GeneRide and our Next Generation Capsids and a $0.5 million increase in personnel-related costs. Personnel-related costs for the nine months ended September 30, 2020 included stock-based compensation expense of $0.8 million, compared to $0.6 million for the nine months ended September 30, 2019.

General and Administrative Expenses

General and administrative expenses for the nine months ended September 30, 2020 were $9.4 million, compared to $7.3 million for the nine months ended September 30, 2019. The increase of approximately $2.1 million reflects a $1.0 million increase in personnel-related costs primarily driven by an increase in stock-based compensation expense, a $0.4 million increase in corporate and IP legal expenses and an increase of $0.3 million related to D&O insurance premiums.

Other (Expense) Income, Net

Other expense, net was $0.7 million for the nine months ended September 30, 2020, compared to other income, net of $1.0 million for the nine months ended September 30, 2019. The net decrease was primarily related to a decrease in interest income due to lower interest rates and lower capital resource balances as well as interest expense related to the loan agreement.

Liquidity and Capital Resources

Overview

Since our inception and through September 30, 2020, we have not generated any sales revenue and have incurred significant losses and negative cash flows from our operations.

As a result of the uncertainties for our business caused by the COVID-19 pandemic, we have implemented certain measures as part of our effort to preserve capital as described further under the heading “Impact of COVID-19.” As of September 30, 2020, we had cash and cash equivalents of $32.3 million, which combined with the estimated net proceeds of approximately $45.2 million under our October follow-on offering, we believe will be sufficient to fund our operating expenses and capital expenditures for at least the next twelve months from the date of issuance of the financial statements included in this Quarterly Report on Form 10-Q. While we intend to continue to evaluate ways to enhance our liquidity and capital position, our efforts will largely depend on future developments that are highly uncertain and cannot be predicted with confidence at this time.

Cash Flows

The following table summarizes our cash flows for the nine months ended September 30, 2020 and 2019:

	Nine Months Ended September 30,	
	2020	2019
	(in thousands)	
Net cash used in operating activities	$ (21,436)	$ (27,048)
Net cash provided by (used in) investing activities	17,157	(25,174)
Net cash provided by financing activities	3,311	9,988
Effect of foreign exchange rates on cash and cash equivalents	—	8
Net decrease in cash, cash equivalents and restricted cash	$ (968)	$ (42,226)

Operating Activities

During the nine months ended September 30, 2020, net cash used in operating activities was approximately $21.4 million, primarily related to our net loss adjusted for non-cash charges and changes in the components of working capital. The $5.6 million decrease in net cash used in operating activities during the nine months ended September 30, 2020 as compared to the nine months ended September 30, 2019, was primarily driven by the decrease in net loss as well as larger non-cash stock-based compensation expense.

Investing Activities

During the nine months ended September 30, 2020, net cash provided by investing activities was $17.2 million as the proceeds from our short-term investments that matured during the period were not reinvested and were instead held as cash and cash equivalents. During the nine months ended September 30, 2019, net cash used in investing activities was $25.2 million, primarily related to net short-term investments activity of $24.1 million and the purchase of property and equipment of $1.1 million.

Financing Activities

During the nine months ended September 30, 2020, net cash provided by financing activities was $3.3 million primarily driven by approximately $3.2 million in net proceeds from sales of our common stock under the open market sales agreement with Jefferies LLC and $0.1 million in proceeds related to the exercise of stock options. During the nine months ended September 30, 2019, net cash provided by financing activities was approximately $10.0 million, primarily related to net proceeds of $9.8 million under the July 2019 loan and security agreement as well as $0.1 million related to the exercise of stock options.

Funding Requirements

We expect to continue to incur a significant amount of expenses in connection with our ongoing activities for the foreseeable future. In particular, we will incur significant expenses related to the preclinical activities and clinical trials of our product candidates and any future product candidates.

We expect that our expenses will increase substantially if and as we:

- continue our research and preclinical development of any product candidates from our current or future research programs;
- initiate and conduct clinical trials for LB-001 and any other product candidates we identify and develop;
- seek to identify, assess, acquire and/or develop additional research programs and additional product candidates;
- seek marketing approvals for any product candidate that successfully completes clinical trials;
- develop, optimize, scale and validate a manufacturing process and analytical methods for any product candidates we may develop;
- establish and build out internal process and analytical development capabilities and preclinical and clinical grade production;

- obtain market acceptance of any product candidates we may develop as viable treatment options;
- address competing technological and market developments;
- maintain, expand and protect our intellectual property portfolio and provide reimbursement of third-party expenses related to our patent portfolio;
- further develop our GeneRide technology platform and our Next Generation Capsid platform;
- hire additional technical, quality, regulatory, clinical, scientific and commercial personnel and add operational, financial and management information systems and personnel, including personnel to support our process and product development, manufacturing and planned future commercialization efforts;
- make royalty, milestone or other payments under current and any future in-license agreements;
- establish and maintain supply chain and manufacturing relationships with third parties that can provide adequate products and services, in both amount, timing and quality, to support clinical development and the market demand for any product candidate for which we obtain regulatory and marketing approval;
- lease and build new facilities, including offices and labs, to support organizational growth;
- validate and build-out a commercial-scale current Good Manufacturing Practices, or cGMP, manufacturing facility; and
- establish a sales, marketing and distribution infrastructure to commercialize any product candidates for which we may obtain marketing approval.

We are unable to estimate the timing and amounts of increased capital outlays and operating expenses associated with completing the research and development of our product candidates because of the numerous risks and uncertainties associated with the development of LB-001 and any other product candidates and programs we may develop and because the extent to which we may enter into collaborations with third parties for development of LB-001 and any other product candidates we may develop is unknown. Our future funding requirements, both near and long-term, will depend on many factors, including:

- the initiation, scope, progress, timing, costs and results of drug discovery, preclinical development, laboratory testing, and planned clinical trials for LB-001, including our SUNRISE Phase 1/2 clinical trial of LB-001 in MMA, and any other product candidates;
- the outcome, timing and cost of meeting regulatory requirements established by the FDA and other comparable foreign regulatory authorities, including resolving any potential clinical holds that may be imposed on us;
- the impact of the COVID-19 pandemic on our ability to progress with our research, development, manufacturing and regulatory efforts, including our ability to initiate, advance and complete our SUNRISE Phase 1/2 clinical trial of LB-001;
- the cost of filing, prosecuting, defending and enforcing our patent claims and other intellectual property rights;
- the cost of defending potential intellectual property disputes, including patent infringement actions;
- the achievement of milestones or occurrence of other developments that trigger payments under any of our current agreements or other agreements we may enter into;
- the extent to which we are obligated to reimburse, or entitled to reimbursement of, clinical trial and other research and development costs under future collaboration agreements, if any;
- the effect of competing technological and market developments;
- the cost and timing of completion of clinical or commercial-scale manufacturing activities;
- the extent to which we in-license or acquire other products and technologies;
- our ability to establish and maintain collaborations on favorable terms, if at all;
- the cost of establishing sales, marketing and distribution capabilities for LB-001 and any other product candidates in regions where we choose to commercialize our product candidates, if approved; and
- the initiation, progress, timing and results of our commercialization of LB-001 and any other product candidates, if approved, for commercial sale.

A change in the outcome of any of these variables with respect to the development of a product candidate could mean a significant change in the costs and timing associated with the research and development of that product candidate. For example, if the FDA or another regulatory authority were to require us to conduct clinical trials beyond those that we anticipate will be required for the completion of clinical development of a product candidate, or if we experience significant trial delays due to patient enrollment or other reasons, we would be required to expend significant additional financial resources and time on the completion of clinical development. Any significant delays in our programs may also require us to reevaluate our corporate strategy, resulting in the expenditure of significant resources and time. We may never succeed in obtaining regulatory approval for our product candidates or any future product candidates.

Until such time, if ever, that we can generate product revenue sufficient to achieve profitability, we expect to finance our cash needs through offerings of securities, private equity financing, debt financings, collaborations, government contracts or other strategic transactions. The terms of financing may adversely affect the holdings or the rights of our stockholders. If we are unable to obtain funding, we may be required to delay, limit, reduce or terminate some or all of our research and product development, product portfolio expansion or future commercialization efforts.

At-the-Market Sales of Common Stock

In November 2019, we entered into an open market sale agreement with Jefferies LLC as the sales agent. Under the terms of this sale agreement, we may sell shares of our common stock, from time to time, having an aggregate value of up to $50 million through Jefferies LLC. We pay a 3% cash commission to Jefferies LLC on the proceeds from sales under the program. During the nine months ended September 30, 2020, we issued 436,477 shares of our common stock at a weighted-average price of $7.56 per share, resulting in net proceeds to us of $3.2 million. At September 30, 2020, we had $46.7 million in aggregate gross offering amount available under this sales agreement.

Amendment to Loan Agreement – Extension of Second Tranche Availability

In September 2020, we entered into an amendment to the Loan Agreement to extend the availability of the $10.0 million second loan tranche until the earliest of (i) the date that is thirty (30) days immediately following the date by which certain development milestones and equity financing events shall have occurred, (ii) March 31, 2021 and (iii) the occurrence of an Event of Default (as defined in the Loan Agreement). While we intend to continue to evaluate ways to enhance our liquidity and capital position, our efforts will largely depend on future developments that are highly uncertain and cannot be predicted with confidence at this time.

October 2020 Underwritten Offering

In October 2020, we completed a follow-on offering under our shelf registration statement on Form S-3 (File No. 333-234735) and a related prospectus supplement pursuant to which we issued an aggregate of 8,050,000 shares of common stock, which included the full exercise of the underwriters' option to purchase additional shares, at a public offering price of $6.00 per share. We received aggregate net proceeds of approximately $45.2 million from the offering after deducting underwriting discounts and commissions and other estimated offering expenses.

Contractual Obligations and Commitments

We are a smaller reporting company, as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended, for this reporting period and are not required to provide additional information on our contractual obligations and commitments pursuant to Item 303 of Regulation S-K.

Policies and Significant Judgments and Estimates

Our condensed consolidated financial statements are prepared in accordance with generally accepted accounting principles in the United States. The preparation of our condensed consolidated financial statements and related disclosures requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, costs and expenses, and the disclosure of contingent assets and liabilities in our condensed consolidated financial statements. We base our estimates on historical experience, known trends and events and various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions or conditions.

There have been no significant changes to our critical accounting policies from those described in “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” included in our Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on March 16, 2020, other than the significant accounting policy over revenue recognition under ASC 606, which is described further in Note 2 to the financial statements included in this Quarterly Report on Form 10-Q.

Emerging Growth Company Status

The Jumpstart Our Business Startups Act of 2012 permits an “emerging growth company” such as us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies until those standards would otherwise apply to private companies. We have irrevocably elected to “opt out” of this provision and, as a result, we will comply with new or revised accounting standards when they are required to be adopted by public companies that are not emerging growth companies.

Off-Balance Sheet Arrangements

We have not entered into any off-balance sheet arrangements and do not have any holdings in variable interest entities.

Recently Issued Accounting Pronouncements

Refer to Note 2 in the accompanying notes to our unaudited condensed consolidated financial statements appearing elsewhere in this Quarterly Report on Form 10-Q for a discussion of recent accounting pronouncements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

We are a smaller reporting company, as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended, for this reporting period and are not required to provide the information required under this item.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer (principal executive officer) and Chief Financial Officer (principal financial officer), evaluated the effectiveness of our disclosure controls and procedures as of September 30, 2020. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (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 September 30, 2020, our Chief Executive Officer and our Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended September 30, 2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. As a result of the COVID-19 pandemic, certain employees began working remotely in March. Notwithstanding these changes to the working environment, we have not identified any material changes in our internal control over financial reporting. We are continually monitoring and assessing the COVID-19 situation to determine any potential impact on the design and operating effectiveness of our internal controls over financial reporting.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings.

On March 18, 2020, a purported shareholder class action, *John R. Afinowicz v. LogicBio Therapeutics, Inc., et al.*, No. 2:20-cv-03009, was filed in the United States District Court for the District of New Jersey, naming us and certain of our officers as defendants. The lawsuit alleges that we made material misrepresentations and/or omissions of material fact relating to our Investigational New Drug submission for LB-001 in our public disclosures, in violation of Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 promulgated thereunder. The complaint seeks certification of a class of purchasers of our common stock during the period from December 3, 2018 through February 10, 2020. The plaintiff seeks unspecified monetary damages on behalf of the putative class and an award of costs and expenses, including attorney's fees. On May 13, 2020, the defendants moved to transfer the action from the District of New Jersey to the District of Massachusetts, and on May 18, 2020, shareholder John R. Afinowicz moved for appointment as lead plaintiff. The Court granted Defendants' motion to transfer on June 2, 2020, and the case was transferred to the District of Massachusetts (No. 1:20-cv-11158) on June 18, 2020. The motion for appointment as lead plaintiff remains outstanding. We believe that this action is without merit and intend to defend it vigorously. At this time, no assessment can be made as to the likely outcome of this lawsuit or whether the outcome will be material to us.

Item 1A. Risk Factors.

In addition to the other information set forth in this report, you should carefully consider the factors discussed in Part I, "Item 1A. Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2019 and in Part II, "Item 1A. Risk Factors" in our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2020, which could materially affect our business, financial condition or future results. The risks described in our Annual Report on Form 10-K and our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2020 may not be the only risks facing the Company. For example, in February 2020 we announced that our investigational new drug application, or IND, for LB-001 was placed on clinical hold by the FDA in order to evaluate certain clinical and preclinical aspects of our submission. While our IND clinical hold for LB-001 was lifted in August 2020, there can be no assurance that the FDA will not place this IND, or any IND relating to any other of our product candidates that we may file in the future, on clinical hold, requiring us to address any issues raised by the FDA in order to continue the applicable clinical trial. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition and/or operating results.

There have been no material changes from the risk factors previously disclosed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, filed with the SEC on March 16, 2020, and our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2020, filed with the SEC on May 11, 2020.

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

Use of Proceeds from Initial Public Offering

On October 23, 2018, we closed our IPO, in which we issued and sold 8,050,000 shares of our common stock, including 1,050,000 shares sold pursuant to the full exercise of the underwriters' option to purchase additional shares, at a public offering price of $10.00 per share for gross proceeds of $80.5 million, before deducting underwriting discounts and commissions and offering expenses payable by us. All of the shares issued and sold in the IPO were registered under the Securities Act pursuant to a Registration Statement on Form S-1 (File No. 333-227523), which was declared effective by the SEC on October 18, 2018. Jefferies LLC, Barclays Capital Inc. and William Blair & Company, L.L.C. acted as joint book-running managers of the offering and as representatives of the underwriters. Chardan Capital Markets, LLC acted as the lead manager for the offering. The offering commenced on October 18, 2018 and did not terminate until the sale of all of the shares offered.

The net offering proceeds to us, after deducting underwriting discounts and offering costs payable by us of an aggregate of approximately $8.2 million, were approximately $72.3 million. No material offering expenses were paid directly or indirectly to any of our directors or officers (or their associates) or persons owning 10.0% or more of any class of our equity securities or to any other affiliates.

There has been no material change in our planned use of the net offering proceeds from our IPO as described in our final prospectus filed with the SEC pursuant to Rule 424(b)(4) on October 22, 2018. We have been using and plan to continue to use the net proceeds from the IPO primarily to fund the development of LB-001 in MMA and for discovery and preclinical development of additional product candidates, and for working capital and general corporate purposes.

Item 6. Exhibits.

EXHIBIT 3.1	—	Fourth Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K, File No. 001-38707, filed on October 29, 2018).
EXHIBIT 3.2	—	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K, File No. 001-38707, filed on October 29, 2018).
EXHIBIT 10.1*	—	First Amendment to Loan and Security Agreement, dated April 23, 2020, by and between the Company, LogicBio Australia Pty Limited, Oxford Finance LLC and Horizon Credit II LLC.
EXHIBIT 10.2*+	—	Second Amendment to Loan and Security Agreement, dated September 28, 2020, by and between the Company, LogicBio Australia Pty Limited, Oxford Finance LLC and Horizon Credit II LLC.
EXHIBIT 10.3*+	—	Amendment No.2 to Patent & Technology License Agreement, dated September 29, 2020, by and between LogicBio Therapeutics, Inc. and The Board of Regents of The University of Texas System.
EXHIBIT 31.1*	—	Rule 13a—14(a) / 15d—14(a) Certifications — Chief Executive Officer.
EXHIBIT 31.2*	—	Rule 13a—14(a) / 15d—14(a) Certifications — Chief Financial Officer.
EXHIBIT 32.1*	—	Section 1350 Certifications.
EXHIBIT 101.INS	—	Inline XBRL Instance Document. The instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
EXHIBIT 101.SCH	—	Inline XBRL Taxonomy Extension Schema Document.
EXHIBIT 101.CAL	—	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
EXHIBIT 101.DEF	—	Inline XBRL Taxonomy Extension Definition Linkbase Document.
EXHIBIT 101.LAB	—	Inline XBRL Taxonomy Extension Label Linkbase Document.
EXHIBIT 101.PRE	—	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
EXHIBIT 104	—	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Filed herewith

\+ Pursuant to 17 C.F.R §§230.406 and 230.83, the confidential portions of this exhibit have been omitted and are marked accordingly

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.

LogicBio Therapeutics, Inc.

Dated: November 9, 2020

By: /s/ Frederic Chereau
Frederic Chereau
President and Chief Executive Officer

Dated: November 9, 2020

By: /s/ Matthias Jaffé
Matthias Jaffé
Chief Financial Officer

Exhibit 10.1

FIRST AMENDMENT TO LOAN AND SECURITY AGREEMENT

THIS FIRST AMENDMENT to Loan and Security Agreement (this "**Amendment**") is entered into as of April 23, 2020 (the "**Amendment Date**"), by and among OXFORD FINANCE LLC, a Delaware limited liability company with an office located at 133 North Fairfax Street, Alexandria, Virginia 22314 ("Oxford"), as collateral agent (in such capacity, "**Collateral Agent**"), the Lenders listed on Schedule 1.1 to the Loan Agreement (as defined below) or otherwise a party thereto from time to time including Oxford in its capacity as a Lender and HORIZON CREDIT II LLC, a Delaware limited liability company with an office located at 312 Farmington Avenue, Farmington, Connecticut 06032, as assignee of HORIZON TECHNOLOGY FINANCE CORPORATION, a Delaware corporation ("**Horizon**") (each a "**Lender**" and collectively, the "**Lenders**"), and LOGICBIO THERAPEUTICS, INC., a Delaware corporation with offices located at 99 Erie Street, Cambridge, Massachusetts 02139 ("**Parent**") and LOGICBIO AUSTRALIA PTY LIMITED (ACN 625 479 610), an Australian proprietary limited company with an address at 99 Erie Street, Cambridge, Massachusetts 02139 and a wholly owned Subsidiary of Parent ("**Australian Sub**") (Parent and Australian Sub, individually and collectively, jointly and severally, "**Borrower**").

WHEREAS, Collateral Agent, Borrower and Lenders have entered into that certain Loan and Security Agreement, dated as of July 2, 2019 (as amended, supplemented or otherwise modified from time to time, the "**Loan Agreement**") pursuant to which Lenders have provided to Borrower certain loans in accordance with the terms and conditions thereof; and

WHEREAS, Borrower desires to incur Indebtedness pursuant to, and enter into, the SBA PPP Loan (as defined herein) and in connection therewith has requested Collateral Agent and Lenders to amend certain provisions of the Loan Agreement to allow Borrower to incur such Indebtedness, and Collateral Agent and Lenders have agreed to such request; and

WHEREAS, Borrower, Lenders and Collateral Agent desire to amend certain provisions of the Loan Agreement as provided herein and subject to the terms and conditions set forth herein;

NOW, THEREFORE, in consideration of the promises, covenants and agreements contained herein, and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Borrower, Lenders and Collateral Agent hereby agree as follows:

1. Capitalized terms used herein but not otherwise defined shall have the respective meanings given to them in the Loan Agreement.

2. The following Section 6.2(d) is hereby added to the Loan Agreement:

(d)

(i) Borrower shall promptly (but no later than within two Business Days) notify Collateral Agent of execution, consummation, filing, delivery or receipt, of any agreement, instrument, application, document, amendment, modification, waiver, supplement, consent or notice with respect to the SBA PPP Loan (including, without limitation, forgiveness thereof), and with such notification provide to Collateral Agent a copy thereof.

(ii) Along with the monthly Compliance Certificate to be delivered pursuant to Section 6.2(b) of this Agreement, Borrower shall deliver to each Lender and Collateral Agent a written summary stating (A) the amount of the SBA PPP Loan outstanding as of the end of the immediately preceding month, (B) the amount of the SBA PPP Loan used in the immediately preceding month by Borrower and (C) the purposes for which the SBA PPP Loan was used in the immediately preceding month.

3. The following Section 6.15 is hereby added to the Loan Agreement:

6.15 **SBA PPP Loan**. Borrower shall:

(a) comply in all material respects with all terms and conditions of the SBA PPP Loan and all requirements of the SBA and Small Business Act related thereto and use the proceeds of the SBA PPP Loan solely for CARES Allowable Uses;

(b) ensure that the SBA PPP Loan (i) has a maturity date not less than two (2) years after the date of incurrence of the SBA PPP Loan, (ii) bears interest at a rate not greater than one percent (1%) per annum, and (iii) otherwise has terms customary for loans made pursuant to the CARES Act;

(c) keep proper records in which full, true, timely and correct entries are made of all dealings and transactions related to the SBA PPP Loan and, upon Collateral Agent's request, provide such records to Collateral Agent;

(d) promptly inform the Collateral Agent of the receipt of the funds from the SBA PPP Loan;

(e) promptly following the SBA PPP Loan Date (but in any event no later than 45 days after the eight-week period immediately following the SBA PPP Loan Date (the "**Forgiveness Application Period**")), apply for forgiveness of the maximum amount of SBA PPP Loan possible in accordance with Section 1106 of the CARES Act and provide notice of the status of any and all documentation related to such application for forgiveness to Collateral Agent and, upon Collateral Agent's request, deliver a certificate of an authorized officer of the Borrower certifying as to the amount of the SBA PPP Loan that will be forgiven pursuant to the provisions of the CARES Act;

(f) cause not less than $541,084 of the SBA PPP Loan to be forgiven by the SBA PPP Loan lender on or before October 1, 2020, (or such other amount and/or by such other time as consented to by the Required Lenders in writing); and

(g) not amend any provision in any document relating to the SBA PPP Loan in a manner adverse to the Lenders or make any prepayment under the SBA PPP Loan; provided that, during the Forgiveness Application Period, the Borrower shall be permitted, on a single occasion, to make a prepayment of the SBA PPP Loan for such amount as Borrower reasonably determines is not eligible for forgiveness in accordance with Section 1106 of the CARES Act.

4. Section 8.2(a) of the Loan Agreement is hereby amended and restated in its entirety as follows:

(a) Borrower or any of its Subsidiaries fails or neglects to perform any obligation in Sections 6.2 (Financial Statements, Reports, Certificates), 6.4 (Taxes), 6.5 (Insurance), 6.6 (Operating Accounts), 6.7 (Protection of Intellectual Property Rights), 6.9 (Notice of Litigation and Default), 6.10 (Financial Covenant), 6.11 (Landlord Waivers; Bailee Waivers), 6.12 (Creation/Acquisition of Subsidiaries), 6.13 (Further Assurances), 6.14 (Israeli Subsidiary Dissolution) or 6.15 (SBA PPP Loan) or Borrower violates any covenant in Section 7; or

5. Section 8.6 of the Loan Agreement is hereby amended and restated in its entirety as follows:

8.6 **Other Agreements**. There is a default in any agreement to which Borrower or any of its Subsidiaries is a party with a third party or parties resulting in a right by such third party or parties, whether or not exercised, to accelerate the maturity of any Indebtedness in an amount in excess of One Hundred Thousand Dollars ($100,000.00) or that could reasonably be expected to have a Material Adverse Change; or the SBA PPP Loan or any event or condition occurs that results in the SBA PPP Loan becoming due prior to its scheduled maturity or that enables or permits the holder or holders thereof to declare the SBA PPP Loan to be due, or to require the prepayment, repurchase, redemption or defeasance thereof, prior to its scheduled maturity or the SBA withdraws or terminates its guarantee of Borrower's payment of the SBA PPP Loan or there is any other default in any agreement related to the SBA PPP Loan;

6. Section 13.1 of the Loan Agreement is hereby amended by amending and restating the following definition therein as follows:

"**Permitted Indebtedness**" is:

(a) Borrower's Indebtedness to the Lenders and Collateral Agent under this Agreement and the other Loan Documents;

(b) Indebtedness existing on the Effective Date and disclosed on the Perfection Certificate(s);

(c) Subordinated Debt;

(d) unsecured Indebtedness to trade creditors incurred in the ordinary course of business;

(e) Indebtedness consisting of capitalized lease obligations and purchase money Indebtedness, in each case incurred by Borrower or any of its Subsidiaries to finance the acquisition, repair, improvement or construction of fixed or capital assets of such person, provided that (i) the aggregate outstanding principal amount of all such Indebtedness does not exceed One Hundred Thousand Dollars ($100,000.00) at any time and (ii) the principal amount of such Indebtedness does not exceed the lower of the cost or fair market value of the property so acquired or built or of such repairs or improvements financed with such Indebtedness (each measured at the time of such acquisition, repair, improvement or construction is made);

(f) Indebtedness incurred as a result of endorsing negotiable instruments received in the ordinary course of Borrower's business;

(g) extensions, refinancings, modifications, amendments and restatements of any items of Permitted Indebtedness (a) through (e) above, provided that the principal amount thereof is not increased or the terms thereof are not modified to impose materially more burdensome terms upon Borrower, or its Subsidiary, as the case may be; and

(h) Indebtedness under the SBA PPP Loan (subject to Section 6.15 of this Agreement).

7. Section 13.1 of the Loan Agreement is hereby amended by adding the following definitions thereto in alphabetical order:

"**CARES Act**" means the Coronavirus Aid, Relief, and Economic Security Act, and applicable rules and regulations.

"**CARES Allowable Uses**" means use of proceeds of the SBA PPP Loan for: (i) payroll costs, (ii) costs related to the continuation of group health care benefits during periods of paid sick, medical or family leave, and insurance premiums, (iii) mortgage interest payments (but not mortgage prepayments or principal payments), (iv) rent payments, (v) utility payments, and/or (vi) interest payments on any other debt obligations that were incurred before Feb. 15, 2020, in each case as the use is described as an "allowable use" in Section 1102 of the CARES Act.

"**SBA**" means the U.S. Small Business Administration.

"**SBA PPP Loan**" means the unsecured loan incurred by the Parent from Silicon Valley Bank under 15 U.S.C. 636(a)(36) (as added to the Small Business Loan Act by Section 1102 of the CARES Act) in the aggregate amount of Seven Hundred Forty One Thousand and Eighty Four Dollars ($741,084), on the SBA PPP Loan Date.

"**SBA PPP Loan Date**" is the date on which the Borrower receives the funds from the SBA PPP Loan.

"**Small Business Loan Act**" means the Small Business Act (15 U.S. Code Chapter 14A – Aid to Small Business).

8. Exhibit C (Compliance Certificate) to the Loan Agreement is hereby amended and restated in its entirety as set forth on Exhibit A hereto.

9. Limitation of Amendment.

   a. The amendments set forth above are effective for the purposes set forth herein and shall be limited precisely as written and shall not be deemed to (a) be a consent to any amendment, waiver or modification of any other term or condition of any Loan Document, or (b) otherwise prejudice any right, remedy or obligation which Lenders or Borrower may now have or may have in the future under or in connection with any Loan Document, as amended hereby.

   b. This Amendment shall be construed in connection with and as part of the Loan Documents and all terms, conditions, representations, warranties, covenants and agreements set forth in the Loan Documents, are hereby ratified and confirmed and shall remain in full force and effect.

10. To induce Collateral Agent and Lenders to enter into this Amendment, Borrower hereby represents and warrants to Collateral Agent and Lenders as follows:

   a. Immediately after giving effect to this Amendment (a) the representations and warranties contained in the Loan Documents are true, accurate and complete in all material respects as of the date hereof (except to the extent such representations and warranties relate to an earlier date, in which case they are true and correct as of such date), and (b) no Event of Default has occurred and is continuing;

   b. Borrower has the power and due authority to execute and deliver this Amendment and to perform its obligations under the Loan Agreement, as amended by this Amendment;

   c. The organizational documents of Borrower delivered to Collateral Agent on the Effective Date, and updated pursuant to subsequent deliveries by or on behalf of the Borrower to the Collateral Agent, remain true, accurate and complete and have not been amended, supplemented or restated and are and continue to be in full force and effect;

   d. The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, do not contravene (i) any material law or regulation binding on or affecting Borrower, (ii) any material contractual restriction with a Person binding on Borrower, (iii) any material order, judgment or decree of any court or other governmental or public body or authority, or subdivision thereof, binding on Borrower, or (iv) the organizational documents of Borrower;

   e. The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, do not require any order, consent, approval, license, authorization or validation of, or filing, recording or registration with, or exemption by any governmental or public body or authority, or subdivision thereof, binding on Borrower, except as already has been obtained or made;

   f. The documents (including, without limitation, Borrower's application for the SBA PPP Loan) evidencing the SBA PPP Loan delivered by Borrower to Collateral Agent prior to the date hereof are true, accurate and complete, were duly authorized by Borrower, and the loan evidenced thereby has been approved by the SBA and is a loan made under 15 U.S.C. 636(a)(36) (as added to the Small Business Act by Section 1102 of the CARES Act). Borrower is fully compliant with the provisions of the SBA PPP Loan, Borrower has not made any misrepresentations (or omissions) in its application for the SBA PPP Loan or in any document submitted by Borrower in connection with its application for the SBA PPP Loan, and Borrower fulfills the eligibility requirements for the SBA PPP Loan;

g. Borrower has not relied on Collateral Agent or any Lender or any statement of Collateral Agent or any Lender in its decision to apply for the SBA PPP Loan;

h. The SBA PPP Loan and all documents and agreements entered into in connection therewith do not and will not violate any other agreement of Borrower; and

i. This Amendment has been duly executed and delivered by Borrower and is the binding obligation of Borrower, enforceable against Borrower in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, liquidation, moratorium or other similar laws of general application and equitable principles relating to or affecting creditors' rights.

11. Except as expressly set forth herein, the Loan Agreement shall continue in full force and effect without alteration or amendment.

12. The Borrower hereby remises, releases, acquits, satisfies and forever discharges the Lenders and Collateral Agent, their agents, employees, officers, directors, predecessors, attorneys and all others acting or purporting to act on behalf of or at the direction of the Lenders and Collateral Agent **("Releasees**"), of and from any and all manner of actions, causes of action, suit, debts, accounts, covenants, contracts, controversies, agreements, variances, damages, judgments, claims and demands whatsoever, in law or in equity, which any of such parties ever had, now has or, to the extent arising from or in connection with any act, omission or state of facts taken or existing on or prior to the date hereof, may have after the date hereof against the Releasees, for, upon or by reason of any matter, cause or thing whatsoever relating to or arising out of the Loan Agreement or the other Loan Documents on or prior to the date hereof and through the date hereof. Without limiting the generality of the foregoing, the Borrower waives and affirmatively agrees not to allege or otherwise pursue any defenses, affirmative defenses, counterclaims, claims, causes of action, setoffs or other rights they do, shall or may have as of the date hereof, including the rights to contest: (a) the right of Collateral Agent and each Lender to exercise its rights and remedies described in the Loan Documents; (b) any provision of this Amendment or the Loan Documents; or (c) any conduct of the Lenders or other Releasees relating to or arising out of the Loan Agreement or the other Loan Documents on or prior to the date hereof.

13. This Amendment shall be deemed effective as of the Amendment Date upon (a) the due execution and delivery to Collateral Agent of this Amendment by each party hereto, and (b) Borrower's payment of all Lenders' Expenses incurred through the date hereof, which may be debited (or ACH'd) from the Designated Deposit Account in accordance with Section 2.3(d) of the Loan Agreement.

14. This Amendment may be executed in any number of counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute one and the same instrument.

15. This Amendment and the rights and obligations of the parties hereto shall be governed by and construed in accordance with the laws of the State of New York.

[*Balance of Page Intentionally Left Blank*]

IN WITNESS WHEREOF, the parties hereto have caused this First Amendment to the Loan Agreement to be executed as of the date first set forth above.

BORROWER:

LOGICBIO THERAPEUTICS, INC.

By /s/ Matthias Jaffe
Name: Matthias Jaffe
Title: CFO

LOGICBIO AUSTRALIA PTY LIMITED

By /s/ Matthias Jaffe
Name: Matthias Jaffe
Title: Director / Company Secretary

By /s/ Frederic Chereau
Name: Frederic Chereau
Title: Director

COLLATERAL AGENT AND LENDER:

OXFORD FINANCE LLC

By /s/ Colette H. Featherly
Name: Colette H. Featherly
Title: Senior Vice President

LENDER:

HORIZON CREDIT II LLC

By /s/ Robert D. Pomeroy, Jr.
Name: Robert D. Pomeroy, Jr.
Title: CEO

EXHIBIT A

EXHIBIT C

Compliance Certificate

TO: OXFORD FINANCE LLC, as Collateral Agent and Lender
HORIZON TECHNOLOGY FINANCE CORPORATION, as Lender

FROM: LOGICBIO THERAPEUTICS, INC.

The undersigned authorized officer ("**Officer**") of LOGICBIO THERAPEUTICS, INC. ("**Parent**"), hereby certifies on behalf of itself and the other Borrower that in accordance with the terms and conditions of the Loan and Security Agreement by and among Parent, LOGICBIO AUSTRALIA PTY LIMITED, Collateral Agent, and the Lenders from time to time party thereto (the "**Loan Agreement**;" capitalized terms used but not otherwise defined herein shall have the meanings given them in the Loan Agreement),

(a) Borrower is in complete compliance for the period ending _____ with all required covenants except as noted below;

(b) There are no Events of Default, except as noted below;

(c) Except as noted below, all representations and warranties of Borrower stated in the Loan Documents are true and correct in all material respects on this date and for the period described in (a), above; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date.

(d) Borrower, and each of Borrower's Subsidiaries, has timely filed all required tax returns and reports, Borrower, and each of Borrower's Subsidiaries, has timely paid all foreign, federal, state, and local taxes, assessments, deposits and contributions owed by Borrower, or Subsidiary, except as otherwise permitted pursuant to the terms of Section 5.8 of the Loan Agreement;

(e) No Liens have been levied or claims made against Borrower or any of its Subsidiaries relating to unpaid employee payroll or benefits of which Borrower has not previously provided written notification to Collateral Agent and the Lenders.

Attached are the required documents, if any, supporting our certification(s). The Officer, on behalf of Borrower, further certifies that the attached financial statements are prepared in accordance with Generally Accepted Accounting Principles (GAAP) and are consistently applied from one period to the next except as explained in an accompanying letter or footnotes and except, in the case of unaudited financial statements, for the absence of footnotes and subject to year-end audit adjustments as to the interim financial statements.

Please indicate compliance status since the last Compliance Certificate by circling Yes, No, or N/A under "Complies" column.

	Reporting Covenant	Requirement	Actual	Complies		
1)	Financial statements	Monthly within 30 days		Yes	No	N/A
2)	Annual (CPA Audited) statements	Within 120 days after FYE		Yes	No	N/A
3)	Annual Financial Projections/Budget (prepared on a monthly basis)	Annually (within 30 days of FYE), and when revised		Yes	No	N/A
4)	A/R & A/P agings	If applicable		Yes	No	N/A
5)	8-K, 10-K and 10-Q Filings	If applicable, within 5 days of filing		Yes	No	N/A
6)	Compliance Certificate	Monthly within 30 days		Yes	No	N/A
7)	IP Report	When required		Yes	No	N/A
8)	Total amount of Borrower's cash and cash equivalents at the last day of the measurement period		$_____	Yes	No	N/A
9)	Total amount of Borrower's Subsidiaries' cash and cash equivalents at the last day of the measurement period		$_____	Yes	No	N/A
10)	Total amount of SBA PPP Loan proceeds received by Borrower		$_____			
11)	Total amount of SBA PPP Loan proceeds used by Borrower in the last month		$_____			
12)	Total amount of SBA PPP Loan proceeds remaining		$_____			

Deposit and Securities Accounts
(Please list all accounts; attach separate sheet if additional space needed)

	Institution Name	Account Number	New Account?		Account Control Agreement in place?		Excluded Account	
1)			Yes	No	Yes	No	Yes	No
2)			Yes	No	Yes	No	Yes	No
3)			Yes	No	Yes	No	Yes	No
4)			Yes	No	Yes	No	Yes	No

Financial Covenants (please attached a separate sheet showing detailed calculations)

	Covenant	Requirement	Actual	Compliance	
1)	Account Balance (subject to ACAs)	Note less than the lesser of (i) One Hundred Five percent (105.00%) of the aggregate principal amount of outstanding Term Loans and (ii) the amount of Borrower's and all of its Subsidiaries' aggregate consolidated cash and Cash Equivalent assets (i.e., $[____])	[$_____]	Yes	No

Other Matters

1)	Have there been any changes in management since the last Compliance Certificate?	Yes	No
2)	Have there been any transfers/sales/disposals/retirement of Collateral or IP prohibited by the Loan Agreement?	Yes	No
3)	Have there been any new or pending claims or causes of action against Borrower that involve more than One Hundred Thousand Dollars ($100,000.00)?	Yes	No
4)	Have there been any amendments of or other changes to the capitalization table of Borrower and to the Operating Documents of Borrower or any of its Subsidiaries? If yes, provide copies of any such amendments or changes with this Compliance Certificate.	Yes	No
5)	Since the last Compliance Certificate, do you anticipate any impending product shortages or supply chain disruptions? If yes, please explain.	Yes	No
6)	Are there major components from suppliers that are single sourced? If yes, please explain.	Yes	No
7)	Does the Borrower's Business Continuity Plan address potential business interruptions and provide a plan to resume business operations?	Yes	No
8)	Have there been any changes to insurance policies providing coverage for business interruption since the last Compliance Certificate? If yes, please explain.	Yes	No

Exceptions

Please explain any exceptions with respect to the certification above: (If no exceptions exist, state "No exceptions." Attach separate sheet if additional space needed.)

LOGIBIO THERAPEUTICS, INC., on behalf of itself and the other Borrower

By _____
Name: _____
Title: _____

Date:

LENDER USE ONLY

Received by: _____ Date: _____

Verified by: _____ Date: _____

Compliance Status: Yes No

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO LOGICBIO THERAPEUTICS, INC. IF PUBLICLY DISCLOSED

SECOND AMENDMENT TO LOAN AND SECURITY AGREEMENT

THIS SECOND AMENDMENT to Loan and Security Agreement (this "**Amendment**") is entered into as of September 28, 2020 (the "**Amendment Date**"), by and among OXFORD FINANCE LLC, a Delaware limited liability company with an office located at 133 North Fairfax Street, Alexandria, Virginia 22314 ("Oxford"), as collateral agent (in such capacity, "**Collateral Agent**"), the Lenders listed on Schedule 1.1 to the Loan Agreement (as defined below) or otherwise a party thereto from time to time including Oxford in its capacity as a Lender and HORIZON CREDIT II LLC, a Delaware limited liability company with an office located at 312 Farmington Avenue, Farmington, Connecticut 06032, as assignee of HORIZON TECHNOLOGY FINANCE CORPORATION, a Delaware corporation ("**Horizon**") (each a "**Lender**" and collectively, the "**Lenders**"), and LOGICBIO THERAPEUTICS, INC., a Delaware corporation with offices located at 99 Erie Street, Cambridge, Massachusetts 02139 ("**Parent**") and LOGICBIO AUSTRALIA PTY LIMITED (ACN 625 479 610), an Australian proprietary limited company with an address at 99 Erie Street, Cambridge, Massachusetts 02139 and a wholly owned Subsidiary of Parent ("**Australian Sub**") (Parent and Australian Sub, individually and collectively, jointly and severally, "**Borrower**").

WHEREAS, Collateral Agent, Borrower and Lenders have entered into that certain Loan and Security Agreement, dated as of July 2, 2019 (as amended, supplemented or otherwise modified from time to time, the "**Loan Agreement**") pursuant to which Lenders have provided to Borrower certain loans in accordance with the terms and conditions thereof; and

WHEREAS, Borrower, Lenders and Collateral Agent desire to amend certain provisions of the Loan Agreement as provided herein and subject to the terms and conditions set forth herein;

NOW, THEREFORE, in consideration of the promises, covenants and agreements contained herein, and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Borrower, Lenders and Collateral Agent hereby agree as follows:

1. Capitalized terms used herein but not otherwise defined shall have the respective meanings given to them in the Loan Agreement.

2. Section 13.1 of the Loan Agreement is hereby amended by amending and restating the following definitions therein as follows:

"**Second Draw Period**" is the period commencing on the date of the occurrence of the Second Draw Period Commencement Date and ending on the earliest of (i) the date that is thirty (30) days immediately following the Second Draw Period Commencement Date, (ii) March 31, 2021 and (iii) the occurrence of an Event of Default; provided, however, that the Second Draw Period shall not commence if on the Second Draw Period Commencement Date an Event of Default has occurred and is continuing.

"**Milestone Event"** is the enrollment of the first patient in the Phase I/II clinical trial for Borrower's drug candidate LB-001, on or before March 31, 2021 and the receipt of written notice from Borrower signed by (i) the Parent's then head of clinical development (who as of September 28, 2020 is Daniel Gruskin), in his or her capacity as the head of Parent's clinical development and (ii) the Parent's then CEO and Director (who on the Effective Date is Fred Chereau) in his or her capacity as both the CEO and Director of the Parent, in form and substance reasonably acceptable to Lenders, notifying the Lenders of the Milestone Event on or before the aforementioned date.

3. Section 13.1 of the Loan Agreement is hereby further amended by adding the following definitions thereto in alphabetical order:

"**Equity Event**" is the receipt by Borrower on or after the September 8, 2020 and on or before December 31, 2020 of unrestricted net cash proceeds of not less than [***] from the issuance and sale by Borrower of its equity securities.

"**Second Draw Period Commencement Date**" is the earliest date by which both the Equity Event and the Milestone Event shall have occurred.

4. Limitation of Amendment.

   a. The amendments set forth above are effective for the purposes set forth herein and shall be limited precisely as written and shall not be deemed to (a) be a consent to any amendment, waiver or modification of any other term or condition of any Loan Document, or (b) otherwise prejudice any right, remedy or obligation which Lenders or Borrower may now have or may have in the future under or in connection with any Loan Document, as amended hereby.

   b. This Amendment shall be construed in connection with and as part of the Loan Documents and all terms, conditions, representations, warranties, covenants and agreements set forth in the Loan Documents, are hereby ratified and confirmed and shall remain in full force and effect.

5. To induce Collateral Agent and Lenders to enter into this Amendment, Borrower hereby represents and warrants to Collateral Agent and Lenders as follows:

   a. Immediately after giving effect to this Amendment (a) the representations and warranties contained in the Loan Documents are true, accurate and complete in all material respects as of the date hereof (except to the extent such representations and warranties relate to an earlier date, in which case they are true and correct as of such date), and (b) no Event of Default has occurred and is continuing;

   b. Borrower has the power and due authority to execute and deliver this Amendment and to perform its obligations under the Loan Agreement, as amended by this Amendment;

   c. The organizational documents of Borrower delivered to Collateral Agent on the Effective Date, and updated pursuant to subsequent deliveries by or on behalf of the Borrower to the Collateral Agent, remain true, accurate and complete and have not been amended, supplemented or restated and are and continue to be in full force and effect;

   d. The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, do not contravene (i) any material law or regulation binding on or affecting Borrower, (ii) any material contractual restriction with a Person binding on Borrower, (iii) any material order, judgment or decree of any court or other governmental or public body or authority, or subdivision thereof, binding on Borrower, or (iv) the organizational documents of Borrower;

   e. The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, do not require any order, consent, approval, license, authorization or validation of, or filing, recording or registration with, or exemption by any governmental or public body or authority, or subdivision thereof, binding on Borrower, except as already has been obtained or made; and

   f. This Amendment has been duly executed and delivered by Borrower and is the binding obligation of Borrower, enforceable against Borrower in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, liquidation, moratorium or other similar laws of general application and equitable principles relating to or affecting creditors' rights.

6. Except as expressly set forth herein, the Loan Agreement shall continue in full force and effect without alteration or amendment.

7. The Borrower hereby remises, releases, acquits, satisfies and forever discharges the Lenders and Collateral Agent, their agents, employees, officers, directors, predecessors, attorneys and all others acting or purporting to act on behalf of or at the direction of the Lenders and Collateral Agent **("Releasees**"), of and from any and all manner of actions, causes of action, suit, debts, accounts, covenants, contracts, controversies, agreements, variances, damages, judgments, claims and demands whatsoever, in law or in equity, which any of such parties ever had, now has or, to the extent arising from or in connection with any act, omission or state of facts taken or existing on or prior to the date hereof, may have after the date hereof against the Releasees, for, upon or by reason of any matter, cause or thing whatsoever relating to or arising out of the Loan Agreement or the other Loan Documents on or prior to the date hereof and through the date hereof. Without limiting the generality of the foregoing, the Borrower waives and affirmatively agrees not to allege or otherwise pursue any defenses, affirmative defenses, counterclaims, claims, causes of action, setoffs or other rights they do, shall or may have as of the date hereof, including the rights to contest: (a) the right of Collateral Agent and each Lender to exercise its rights and remedies described in the Loan Documents; (b) any provision of this Amendment or the Loan Documents; or (c) any conduct of the Lenders or other Releasees relating to or arising out of the Loan Agreement or the other Loan Documents on or prior to the date hereof.

8. This Amendment shall be deemed effective as of the Amendment Date upon (a) the due execution and delivery to Collateral Agent of this Amendment by each party hereto, and (b) Borrower's payment of all Lenders' Expenses incurred through the date hereof, which may be debited (or ACH'd) from the Designated Deposit Account in accordance with Section 2.3(d) of the Loan Agreement.

9. This Amendment may be executed in any number of counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute one and the same instrument.

10. This Amendment and the rights and obligations of the parties hereto shall be governed by and construed in accordance with the laws of the State of New York.

[*Balance of Page Intentionally Left Blank*]

IN WITNESS WHEREOF, the parties hereto have caused this Second Amendment to the Loan Agreement to be executed as of the date first set forth above.

BORROWER:

LOGICBIO THERAPEUTICS, INC.

By: /s/ Frederic Chereau
Name: Frederic Chereau
Title: CEO

LOGICBIO AUSTRALIA PTY LIMITED

By: /s/ Matthias Jaffe
Name: Matthias Jaffe
Title: Director / Company Secretary

By: /s/ Frederic Chereau
Name: Frederic Chereau
Title: Director

COLLATERAL AGENT AND LENDER:

OXFORD FINANCE LLC

By: /s/ Colette H. Featherly
Name: Colette H. Featherly
Title: Senior Vice President

LENDER:

HORIZON CREDIT II LLC

By: /s/ Gerald A. Michaud
Name: Gerald A. Michaud
Title: President

Exhibit 10.3

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO LOGICBIO THERAPEUTICS, INC. IF PUBLICLY DISCLOSED

Amendment No. 2 to Patent & Technology License Agreement

This Amendment No. 2 to Patent & Technology License Agreement ("Amendment Two") is made and entered into as of September 29, 2020 (the "Effective Date") by and between LogicBio Therapeutics, Inc. a Delaware corporation, having a principal place of business at 65 Hayden Avenue, Floor 2, Lexington, MA 02421 ("LogicBio") and The Board of Regents ("Board") of The University of Texas System ("System", an agency of the State of Texas whose address is 210 West 7th Street, Austin, Texas 78701, on behalf of The University of Texas Southwestern Medical Center ("UT Southwestern"), a component institution of System, whose address is 5323 Harry Hines Boulevard, Dallas, Texas 75390-9094.

WHEREAS, the parties entered into a Patent & Technology License Agreement effective as of May 7, 2018, as amended by Amendment No. 1 on October 14,2019 ("Agreement")

WHEREAS, the parties desire to modify the Agreement to reflect the understandings they have reached with respect to their relationship; and

WHEREAS, capitalized terms used in this Amendment Two but not otherwise defined shall have the meaning ascribed to such terms in the Agreement.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, the parties hereto agree as follows:

1. **Amendments**. Section 2.7(b) is hereby deleted and replaced with the following:

(b) fulfill the following milestone events by the deadlines indicated:

Diligence Milestone Events	**Deadlines**
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]

If the obligations under this Section 2.7 are not fulfilled, Licensor may treat such failure as a breach in accordance with Section 7.3(b). For the avoidance of doubt, initiation of a clinical trial means the dosing of the first patient in said clinical trial.

Notwithstanding the foregoing, if Licensee believes that, despite using commercially reasonably efforts, it will not achieve any Diligence Milestone Event set forth in this Section 2.7 by the relevant deadline, it may notify Licensor in writing thereof in advance of the deadline. Licensee shall include with such notice a reasonable explanation of the reasons for such failure. If Licensee so notifies Licensor and such explanation is acceptable to Licensor (in its reasonable discretion), or, in any event, if such failure to meet the Diligence Milestone Event is due to circumstances beyond Licensee's reasonable control (such as patent infringement or regulatory issues), then the Parties shall negotiate in good faith an initial extension of the deadlines for said Diligence Milestone Event and all later Diligence Milestone Events (the "Initial Extended

Milestones") so that Licensee shall not be deemed to be in breach of achieving said Diligence Milestone Event by its deadline. In the event that Licensee believes that, despite using commercially reasonable efforts, it will not achieve one or more such Initial Extended Milestones, then Licensee may notify Licensor in writing thereof in advance of the relevant deadline and the Parties shall negotiate in good faith a second extension of deadlines for said Diligence Milestone Event and all later Diligence Milestone Events (the "Second Extended Milestones") so that Licensee shall not be deemed to be in breach of achieving said Diligence Milestone Event by its deadline. Upon agreement of the Parties with respect to the deadlines for such Second Extended Milestones, Licensee shall make a non-creditable payment of one-half of the Milestone Fee of the Milestone Event corresponding to said Diligence Milestone Event.

2. **Miscellaneous**. Except as expressly modified and amended by this Amendment Two, all other terms, conditions and provisions of the Agreement shall remain in full force and effect as provided therein, and in all other respects is ratified and confirmed by the parties.

3. **Execution.** This Amendment Two may be executed (including by industry standard electronic signature software) in multiple counterparts, each of which shall be deemed an original, but all of which taken together shall constitute one and the same instrument. A party may evidence its execution and delivery of this Amendment Two by transmission of a signed copy of the Amendment Two via facsimile, email, or other reliable electronic means, which transmission shall be deemed to have the same legal effect as delivery of an original signed copy of this Amendment Two.

[Remainder of Page Intentionally Left Blank; Signature Page Follows]

IN WITNESS WHEREOF, the parties have caused this Amendment Two to be executed by their duly authorized representatives as of the date set forth in the introductory paragraph of this Amendment Two.

LOGICBIO THERAPEUTICS, INC.

By: /s/ Bryan Yoon
Bryan Yoon
Chief Admin. Officer & General Counsel

Date: 9/29/2020

BOARD OF REGENTS OF THE UNIVERSITY OF TEXAS SYSTEM

By: /s/ Claire Aldridge
Claire Aldridge, Ph.D.
Associate Vice President,
Commercialization and Business Development

Date: 9/29/2020

Exhibit 31.1

Certification of Principal Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of Sarbanes-Oxley Act of 2002

I, Frederic Chereau, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of LogicBio Therapeutics, 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 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 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: November 9, 2020

By: /s/ Frederic Chereau
Frederic Chereau
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

Certification of Principal Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of Sarbanes-Oxley Act of 2002

I, Matthias Jaffé, certify that:

1. 1.I have reviewed this Quarterly Report on Form 10-Q of LogicBio Therapeutics, 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 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 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: November 9, 2020

By: /s/ Matthias Jaffé
Matthias Jaffé
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 on Form 10-Q of LogicBio Therapeutics, Inc. (the "Company") for the quarter ended September 30, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned officers of the company, hereby certifies, pursuant to Section 1350 of Chapter 63 of Title 18, United States Code, that to the best of his knowledge:

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

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

Dated: November 9, 2020

/s/ Frederic Chereau
Frederic Chereau
President and Chief Executive Officer

Dated: November 9, 2020

/s/ Matthias Jaffé
Matthias Jaffé
Chief Financial Officer