

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

FORM 8-K

**CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934**

Date of Report (Date of earliest event reported): October 18, 2021

LOGICBIO THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

001-38707
(Commission
File Number)

47-1514975
(IRS Employer
Identification No.)

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

02421
(Zip Code)

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

Not Applicable
(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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	The Nasdaq Global Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

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.

Item 7.01 Regulation FD Disclosure.

On October 18, 2021, LogicBio Therapeutics, Inc. (“LogicBio” or the “Company”) issued the press release furnished as Exhibit 99.1 to this Current Report on Form 8-K and incorporated herein by reference.

The information in this Item 7.01 of this Current Report on Form 8-K and Exhibit 99.1 hereto shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), or otherwise subject to the liabilities under that Section. The information contained in this Item 7.01 and Exhibit 99.1 hereto shall not be incorporated by reference into any filing with the U.S. Securities and Exchange Commission (the “SEC”) made by LogicBio under the Securities Act of 1933, as amended, or the Exchange Act, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

Item 8.01 Other Events.

On October 18, 2021, LogicBio announced early results from its Phase 1/2 SUNRISE clinical trial evaluating LB-001, the Company’s investigational, single-administration, genome editing therapy based on its proprietary GeneRide™ platform, in pediatric patients with methylmalonic acidemia (“MMA”). The early results showed measurable levels of albumin-2A, a technology-related biomarker indicating site-specific gene insertion and protein expression. Detection of albumin-2A is an indication that the Company has achieved the first ever *in vivo* genome editing in children.

The Company also announced that, following an evaluation of the safety data from the first two patients enrolled in the SUNRISE trial, the independent Data Safety Monitoring Board (“DSMB”) overseeing the trial recommended continuation of the SUNRISE trial without modification.

Per the FDA-cleared protocol, albumin-2A detection together with the DSMB continuation recommendation enables LogicBio to begin enrolling two patients in the higher dose (1×10^{14} vg/kg) cohort (with ages ranging three to twelve years old), and two patients in the lower age (six months to two years old) cohort at the lower dose (5×10^{13} vg/kg) of LB-001.

The Company remains on track to present additional interim data by the end of 2021.

Cautionary Note Regarding Forward-Looking Statements.

Statements in this Current Report on Form 8-K regarding LogicBio’s strategy, plans, prospects, expectations, beliefs, intentions and goals are forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995, as amended, including but not limited to statements regarding early clinical results and the significance and interpretation thereof; and the expected timing of announcing additional interim clinical data in the SUNRISE trial. The terms “indication,” “on track” and similar references are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Each forward-looking statement is subject to risks and uncertainties that could cause actual results to differ materially from those expressed or implied in such statement, including the risk that existing preclinical and clinical data, including early clinical data from a trial, may not be predictive of the results of ongoing or later clinical trials; the risk that clinical trials may not be successful or may be discontinued or delayed for any reason; the potential direct or indirect impact of the COVID-19 pandemic on our business, operations, and the markets and communities in which we and our partners, collaborators and vendors operate; manufacturing risks; risks associated with management and key personnel changes and transitional periods; the actual funding required to develop and commercialize product candidates, including for safety, tolerability, enrollment, manufacturing or economic reasons; the timing and content of decisions made by regulatory authorities; the actual time it takes to initiate and complete preclinical and clinical studies; the competitive landscape; changes in the economic and financial conditions of LogicBio; and LogicBio’s ability to obtain, maintain and enforce patent and other intellectual property protection for LB-001 and any other product candidates. Other risks and uncertainties include those identified under the heading “Risk Factors” in LogicBio’s Annual Report on Form 10-K for the year ended December 31, 2020 and other filings that LogicBio may make with the U.S. Securities and Exchange Commission in the future. These forward-looking statements (except as otherwise noted) speak only as of the date of this Current Report on Form 8-K, and LogicBio does not undertake, and specifically disclaims, any obligation to update any forward-looking statements contained in this Current Report on Form 8-K.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

<u>Exhibit No.</u>	<u>Exhibit Description</u>
99.1	Press Release issued by LogicBio Therapeutics, Inc. on October 18, 2021.
104	Cover Page Interactive Data File (embedded with Inline XBRL document)

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 hereunto duly authorized.

Date: October 18, 2021

LOGICBIO THERAPEUTICS, INC.

By: /s/ Cecilia Jones

Name: Cecilia Jones

Title: Chief Financial Officer



LogicBio Therapeutics Announces Early Clinical Trial Results Demonstrating First-Ever *In Vivo* Genome Editing in Children

- *Early data from Phase 1/2 clinical trial in pediatric patients with methylmalonic acidemia showed measurable levels of a biomarker indicating site-specific gene insertion and protein expression*
- *Based on safety data from first two patients, independent Data Safety Monitoring Board recommended continuation of trial, enabling enrollment of children as young as six months and dose escalation*
- *Company remains on track to report additional interim clinical data by end of 2021*

LEXINGTON, Mass., October 18, 2021 – LogicBio Therapeutics, Inc. (Nasdaq:LOGC), a clinical-stage genetic medicine company, today announced clinical trial results demonstrating the first-ever *in vivo* genome editing in children. Early data from the company’s Phase 1/2 SUNRISE clinical trial showed measurable levels of albumin-2A, a technology-related biomarker indicating site-specific gene insertion and protein expression. The SUNRISE trial is evaluating the safety, tolerability and preliminary efficacy of LB-001, the company’s investigational, single-administration genome editing therapy, in pediatric patients with methylmalonic acidemia (MMA).

These results follow a recommendation from the independent Data Safety Monitoring Board (DSMB) overseeing the SUNRISE trial to continue the study without modification. The DSMB’s recommendation was based on an evaluation of the safety data from the first two patients enrolled in the trial. Per the FDA-cleared protocol, albumin-2A detection together with the DSMB continuation recommendation enables LogicBio to begin enrolling two patients in the higher dose (1×10^{14} vg/kg) cohort (with ages ranging three to twelve years old) and two patients in the lower age (six months to two years old) cohort at the lower dose (5×10^{13} vg/kg) of LB-001.

“We are very excited to have achieved this significant milestone in the field of genetic medicine,” said Fred Chereau, president and chief executive officer of LogicBio. “These early data indicate that we can precisely edit hepatocytes *in vivo* to treat a genetic liver disease with a single intravenous infusion using our proprietary GeneRide™ technology. Today’s announcement is a demonstration that homologous recombination genome editing without the use of nucleases is a potential alternative to genome editing technologies in development that use nucleases, such as CRISPR. The ability to insert the correct version of a gene in a cell’s genome without nucleases is an important step to unlocking the potential of GeneRide™ to treat a larger number of genetic diseases.”

SUNRISE is a first-in-human, open-label, multi-center, 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. LB-001 is designed to non-disruptively insert a corrective copy of the MMUT gene into the albumin locus to drive lifelong therapeutic levels of MMUT expression in the liver. LB-001 is based on the company’s proprietary GeneRide technology, which uses homologous recombination, a natural DNA repair process, to enable precise editing of the genome without the need for exogenous nucleases and promoters that have been associated with an increased risk of immune response and cancer.

“MMA is a rare, life-threatening genetic disorder for which there are no treatments addressing the underlying cause of the disease. By demonstrating for the first time ever that *in vivo*, nuclease-free genome editing in pediatric patients is achievable, we are one step closer to bringing a safe and effective genetic medicine to children suffering from MMA and, potentially, other early onset genetic diseases where early intervention is critical to achieve optimal health outcomes.” said Daniel Gruskin, MD, chief medical officer of LogicBio. “I would like to thank the patients, their families and the investigators who are participating in this landmark trial. We look forward to continuing to progress the clinical study to better understand the biochemical and clinical effect of this genome editing therapy.”

The Company remains on track to present additional interim data by the end of 2021.

About the SUNRISE Trial

The SUNRISE trial is an open-label, multi-center, Phase 1/2 clinical trial designed to assess the safety and tolerability of a single intravenous infusion of LB-001 in pediatric patients with methylmalonic acidemia (MMA) characterized by methylmalonyl-CoA mutase gene (MMUT) mutations. Seven leading centers in the United States and one in Saudi Arabia are expected to participate in the trial. With the aim of evaluating LB-001 at an early age, the SUNRISE trial initially enrolled 3-12 year old patients and, following a recommendation from the trial’s independent Data Safety Monitoring Board and detection of a biomarker indicating site-specific gene insertion, is permitted to enroll infants as young as 6 months old. The SUNRISE trial is designed to enroll up to 8 patients and evaluate a single administration of LB-001 at two dose levels.

About LB-001

LB-001 is an investigational, first-in-class, single-administration, genome editing therapy for early intervention in methylmalonic acidemia (MMA) using LogicBio’s proprietary GeneRide™ drug development platform. GeneRide technology utilizes a natural DNA repair process called homologous recombination that enables precise editing of the genome without the need for exogenous nucleases and promoters that have been associated with an increased risk of immune response and cancer. LB-001 is designed to non-disruptively insert a corrective copy of the methylmalonyl-CoA mutase (MMUT) gene into the albumin locus to drive lifelong therapeutic levels of MMUT expression in the liver, the main site of MMUT expression and activity. LB-001 is delivered to hepatocytes intravenously via liver-targeted, engineered recombinant adeno-associated virus vector (rAAV-LK03). Preclinical studies found that LB-001 was safe and demonstrated transduction of hepatocytes, site-specific genomic integration, and transgene expression. LB-001-corrected hepatocytes in a mouse model of MMA demonstrated preferential survival and expansion (selective advantage), thus contributing to a progressive increase in hepatic MMUT expression over time. LB-001 resulted in improved growth, metabolic stability, and survival in MMA mice. The U.S. Food and Drug Administration (FDA) granted fast track designation, rare pediatric disease designation and orphan drug designation for LB-001 for the treatment of MMA. In addition, the European Medicines Agency (EMA) granted orphan drug designation for LB-001 for the treatment of MMA.

About Methylmalonic Acidemia (MMA)

Methylmalonic acidemia (MMA) is a rare and life-threatening genetic disorder affecting approximately 1 in 50,000 newborns in the United States. In the most common form of MMA, a mutation in a gene called methylmalonyl-CoA mutase (MMUT) prevents the body from properly processing certain fats and proteins. As a result, toxic metabolites accumulate in the liver, in muscle tissue and in the brain. Symptoms include vomiting, lethargy, seizures, developmental delays and organ damage. There is no approved medical therapy addressing the underlying cause of the disease. To manage the symptoms, patients go on a severely restrictive, low-protein, high-calorie diet, often through a feeding tube. Even with aggressive management, these patients often experience life-threatening metabolic crises that can require recurrent hospitalizations and cause permanent neurocognitive damage. Because of this risk for irreversible damage, early intervention is critical and newborns are screened for MMA in every state in the United States.

About LogicBio Therapeutics

LogicBio Therapeutics is a clinical-stage genetic medicine company pioneering genome editing and gene delivery platforms to address rare and serious diseases from infancy through adulthood. The Company's genome editing platform, GeneRide™, is a new approach to precise gene insertion harnessing a cell's natural DNA repair process potentially leading to durable therapeutic protein expression levels. The Company's gene delivery platform, sAAV™, is an adeno-associated virus (AAV) capsid engineering platform designed to optimize gene delivery for treatments in a broad range of indications and tissues. The Company is based in Lexington, MA. For more information, visit www.logicbio.com, which does not form a part of this release.

Forward-Looking Statements

Statements in this press release regarding LogicBio's strategy, plans, prospects, expectations, beliefs, intentions and goals are forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995, as amended, including but not limited to statements regarding early clinical results and the significance and interpretation thereof; homologous recombination genome editing without the use of nucleases as a potential alternative to genome editing technologies in development that use nucleases, such as CRISPR; the potential of the GeneRide™ platform, including the potential for genetic medicines based on the platform to be treatment options for genetic diseases; progressing the SUNRISE trial; the expected timing of announcing additional interim clinical data in the SUNRISE trial; the potential benefits of LB-001; and the sites expected to participate in the SUNRISE trial. The terms "demonstrating," "indicate," "look forward," "on track," "potential" and similar references are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Each forward-looking statement is subject to risks and uncertainties that could cause actual results to differ materially from those expressed or implied in such statement, including the risk that existing preclinical and clinical data, including early clinical data from a trial, may not be predictive of the results of ongoing or later clinical trials; the risk that clinical trials may not be successful or may be discontinued or delayed for any reason; the potential direct or indirect impact of the COVID-19 pandemic on our business, operations, and the markets and communities in which we and our partners, collaborators and vendors operate; manufacturing risks; risks associated with management and key personnel changes and transitional periods; the actual funding required to develop and commercialize product candidates, including for safety, tolerability, enrollment,

manufacturing or economic reasons; the timing and content of decisions made by regulatory authorities; the actual time it takes to initiate and complete preclinical and clinical studies; the competitive landscape; changes in the economic and financial conditions of LogicBio; and LogicBio's ability to obtain, maintain and enforce patent and other intellectual property protection for LB-001 and any other product candidates. Other risks and uncertainties include those identified under the heading "Risk Factors" in LogicBio's Annual Report on Form 10-K for the year ended December 31, 2020 and other filings that LogicBio may make with the U.S. Securities and Exchange Commission in the future. These forward-looking statements (except as otherwise noted) speak only as of the date of this press release, and LogicBio does not undertake, and specifically disclaims, any obligation to update any forward-looking statements contained in this press release.

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