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): February 19, 2021

Precision BioSciences, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**001-38841**	**20-4206017**
(State or other jurisdiction of incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

302 East Pettigrew St., Suite A-100, Durham, North Carolina 27701
(Address of principal executive offices) (Zip Code)

(919) 314-5512
(Registrant's telephone number, including area code)

N/A
(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 $0.000005 per share	DTIL	The Nasdaq Global Select 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 February 19, 2021, Precision BioSciences, Inc. (the "Company") announced the publication of a paper in *Molecular Therapy* describing three-year follow-up data (the "Molecular Therapy Data") showing long-term stable reduction of low-density lipoprotein ("LDL") cholesterol levels in nonhuman primates ("NHPs") following *in vivo* gene editing of the PCSK9 gene with its proprietary ARCUS genome editing platform. A copy of this press release is furnished as Exhibit 99.1 to this Current Report on Form 8-K (the "Form 8-K") and incorporated into this Item 7.01 by reference.

The information contained in this Item 7.01 (including Exhibit 99.1) of the Form 8-K 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 of that Section, nor shall it be deemed to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific reference in such filing.

Item 8.01. Other Events.

On February 19, 2021, the Company announced that the study titled, "Long-term Stable Reduction of Low-density Lipoprotein in Nonhuman Primates Following *In Vivo* Genome Editing of PCSK9" was published online in *Molecular Therapy* and was led by James M. Wilson, MD, Ph.D., a professor of Medicine and director of the Penn Gene Therapy Program and the Penn Orphan Disease Center, and Lili Wang, Ph.D., a research director in the Penn Gene Therapy Program and research associate professor of Medicine at the Perelman School of Medicine at the University of Pennsylvania.

Researchers at the University of Pennsylvania delivered a gene encoding an ARCUS nuclease by adeno-associated virus to inactivate the PCSK9 gene and inhibit protein expression, which would normally prevent receptors from removing excess LDL (or "bad" cholesterol) in the liver. NHPs have been monitored for more than three years and have continued to show a sustained reduction in LDL cholesterol levels while maintaining stable gene editing without any obvious adverse effects. After the one-time vector administration more than three years ago, NHPs treated with ARCUS have experienced stable reductions up to 85% in PCSK9 protein levels and a 56% reduction of LDL cholesterol levels.

Forward-Looking Statements

This Form 8-K contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements contained in this Form 8-K that do not relate to matters of historical fact should be considered forward-looking statements, including statements regarding the potential results and uses of the Company's in vivo gene editing programs and ARCUS-based gene editing technology, including, without limitation, with respect to effects upon the PCSK9 gene and LDL cholesterol levels. In some cases you can identify forward-looking statements by terms such as "aim," "anticipate," "believe," "could," "expect," "should," "plan," "intend," "estimate," "target," "mission," "goal," "may," "will," "would," "should," "could," "target," "potential," "project," "predict," "contemplate," "potential," or the negative thereof and similar words and expressions.

Forward-looking statements are based on management's current expectations, beliefs and assumptions and on information currently available to us. Such statements are subject to a number of known and unknown risks, uncertainties and assumptions, and actual results may differ materially from those expressed or implied in the forward-looking statements due to various important factors, including, but not limited to: our ability to become profitable; our ability to procure sufficient funding and requirements under our current debt instruments and effects of restrictions thereunder; risks associated with raising additional capital; our operating expenses and our ability to predict what those expenses will be; our limited operating history; the success of our programs and product candidates in which we expend our resources; our limited ability or inability to assess the safety and efficacy of our product candidates; our dependence on our ARCUS technology; the initiation, cost, timing, progress, achievement of milestones and results of research and development activities, preclinical or greenhouse studies and clinical or field trials; public perception about genome editing technology and its applications; competition in the genome editing, biopharmaceutical, biotechnology and agricultural biotechnology fields; our or our collaborators' ability to identify, develop and commercialize product candidates; pending and potential liability lawsuits and penalties against us or our collaborators

related to our technology and our product candidates; the U.S. and foreign regulatory landscape applicable to our and our collaborators' development of product candidates; our or our collaborators' ability to obtain and maintain regulatory approval of our product candidates, and any related restrictions, limitations and/or warnings in the label of an approved product candidate; our or our collaborators' ability to advance product candidates into, and successfully design, implement and complete, clinical or field trials; potential manufacturing problems associated with the development or commercialization of any of our product candidates; our ability to obtain an adequate supply of T cells from qualified donors; our ability to achieve our anticipated operating efficiencies at our manufacturing facility; delays or difficulties in our and our collaborators' ability to enroll patients; changes in interim "top-line" and initial data that we announce or publish; if our product candidates do not work as intended or cause undesirable side effects; risks associated with applicable healthcare, data protection, privacy and security regulations and our compliance therewith; the rate and degree of market acceptance of any of our product candidates; the success of our existing collaboration agreements, and our ability to enter into new collaboration arrangements; our current and future relationships with and reliance on third parties including suppliers and manufacturers; our ability to obtain and maintain intellectual property protection for our technology and any of our product candidates; potential litigation relating to infringement or misappropriation of intellectual property rights; our ability to effectively manage the growth of our operations; our ability to attract, retain, and motivate key executives and personnel; market and economic conditions; effects of system failures and security breaches; effects of natural and manmade disasters, public health emergencies and other natural catastrophic events; effects of the outbreak of COVID-19, or any pandemic, epidemic or outbreak of an infectious disease; insurance expenses and exposure to uninsured liabilities; effects of tax rules; risks related to ownership of our common stock; and other important factors discussed under the caption "Risk Factors" in our Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2020, as any such factors may be updated from time to time in our other filings with the SEC, which are accessible on the SEC's website at www.sec.gov and the Investors & Media page of our website at investor.precisionbiosciences.com.

All forward-looking statements speak only as of the date of this Form 8-K and, except as required by applicable law, we have no obligation to update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
99.1	Precision BioSciences, Inc. Press Release, dated February 19, 2021

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.

PRECISION BIOSCIENCES, INC.

Date: February 19, 2021

By: /s/ Dario Scimeca
Dario Scimeca
General Counsel

Precision Announces 3-Year Pre-clinical Study Results Showing Long-term Durability and Safety of ARCUS *In Vivo* Gene Editing to Cut LDL Cholesterol Levels in Nonhuman Primates

Study Led by Gene Therapy Program at the University of Pennsylvania Published in Molecular Therapy

DURHAM, N.C., February 19, 2021 (GLOBE NEWSWIRE) -- Precision BioSciences, Inc. (Nasdaq: DTIL) a clinical stage biotechnology company, today announced the publication of a paper in *Molecular Therapy* describing three-year follow-up data showing long-term stable reduction of low-density lipoprotein (LDL) cholesterol levels in nonhuman primates (NHPs) following *in vivo* gene editing of the *PCSK9* gene with its proprietary ARCUS® genome editing platform.

The study, "Long-term Stable Reduction of Low-density Lipoprotein in Nonhuman Primates Following *In Vivo* Genome Editing of PCSK9" was published online in *Molecular Therapy* and was led by James M. Wilson, MD, Ph.D., a professor of Medicine and director of the Penn Gene Therapy Program and the Penn Orphan Disease Center, and Lili Wang, Ph.D., a research director in the Penn Gene Therapy Program and research associate professor of Medicine at the Perelman School of Medicine at the University of Pennsylvania.

"Building on the work we previously published in *Nature Biotechnology* in 2018, which was the first demonstrated use of any gene editing technology to create a clinically relevant reduction of gene expression of the *PCSK9* protein in nonhuman primates, these latest pre-clinical results showed that targeted *in vivo* gene disruption with ARCUS has had a lasting therapeutic effect after a single dose, and provide pivotal data for safety considerations that support advancement towards clinical translation," said Dr. Wilson. "These results not only contribute to the growing evidence of gene editing for potential therapeutic use, but specifically showed that ARCUS nuclease gene editing could be a very promising new approach leading to treatments for heart disease patients that do not tolerate commonly used PCSK9 inhibitors."

Researchers at the University of Pennsylvania delivered a gene encoding an ARCUS nuclease by adeno-associated virus (AAV) to inactivate the *PCSK9* gene and inhibit protein expression, which would normally prevent receptors from removing excess LDL (or "bad" cholesterol) in the liver. NHPs have been monitored for more than three years and have continued to show a sustained reduction in LDL cholesterol levels while maintaining stable gene editing without any obvious adverse effects. After the one-time vector administration more than three years ago, NHPs treated with ARCUS have experienced stable reductions of up to 85% in PCSK9 protein levels and a 56% reduction of LDL cholesterol levels.

"To our knowledge, this is the longest duration gene editing data in a large animal model. The data demonstrates that a single administration of an ARCUS nuclease could represent a potential one-time, permanent treatment for familial hypercholesteremia," commented Derek Jantz, Ph.D., co-author of the paper and Chief Scientific Officer at Precision BioSciences. "ARCUS has attributes that we believe significantly differentiate it from RNAi or conventional AAV gene therapy approaches, as well as CRISPR gene editing approaches. At more than three years out, we are seeing a stable gene edit that is being inherited by subsequent generations of hepatocytes, and evidence thus far supports that this is a

permanent change. We look forward to continued monitoring of these animals and applying these learnings to our other *in vivo* gene editing programs."

About ARCUS
ARCUS® is a proprietary genome editing technology discovered and developed by scientists at Precision BioSciences. It uses sequence-specific DNA-cutting enzymes, or nucleases, that are designed to either insert (knock-in), remove (knock-out), or repair DNA of living cells and organisms. ARCUS is based on a naturally occurring genome editing enzyme, I-CreI that evolved in the algae *Chlamydomonas reinhardtii* to make highly specific cuts in cellular DNA. Precision's platform and products are protected by a comprehensive portfolio including more than 70 patents to date.

About Precision BioSciences, Inc.
Precision BioSciences, Inc. is a clinical stage biotechnology company dedicated to improving life (DTIL) with its wholly proprietary ARCUS® genome editing platform. ARCUS is a highly specific and versatile genome editing platform that was designed with therapeutic safety, delivery, and control in mind. Using ARCUS, the Company's pipeline consists of multiple "off-the-shelf" CAR T immunotherapy clinical candidates and several *in vivo* gene correction therapy candidates to cure genetic and infectious diseases where no adequate treatments exist. For more information about Precision BioSciences, please visit www.precisionbiosciences.com.

Forward Looking Statements
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our and our collaborators' development of product candidates; our or our collaborators' ability to obtain and maintain regulatory approval of our product candidates, and any related restrictions, limitations and/or warnings in the label of an approved product candidate; our or our collaborators' ability to advance product candidates into, and successfully design, implement and complete, clinical or field trials; potential manufacturing problems associated with the development or commercialization of any of our product candidates; our ability to obtain an adequate supply of T cells from qualified donors; our ability to achieve our anticipated operating efficiencies at our manufacturing facility; delays or difficulties in our and our collaborators' ability to enroll patients; changes in interim "top-line" and initial data that we announce or publish; if our product candidates do not work as intended or cause undesirable side effects; risks associated with applicable healthcare, data protection, privacy and security regulations and our compliance therewith; the rate and degree of market acceptance of any of our product candidates; the success of our existing collaboration agreements, and our ability to enter into new collaboration arrangements; our current and future relationships with and reliance on third parties including suppliers and manufacturers; our ability to obtain and maintain intellectual property protection for our technology and any of our product candidates; potential litigation relating to infringement or misappropriation of intellectual property rights; our ability to effectively manage the growth of our operations; our ability to attract, retain, and motivate key executives and personnel; market and economic conditions; effects of system failures and security breaches; effects of natural and manmade disasters, public health emergencies and other natural catastrophic events effects of the outbreak of COVID-19, or any pandemic, epidemic or outbreak of an infectious disease; insurance expenses and exposure to uninsured liabilities; effects of tax rules; risks related to ownership of our common stock and other important factors discussed under the caption "Risk Factors" in our Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2020, as any such factors may be updated from time to time in our other filings with the SEC, which are accessible on the SEC's website at www.sec.gov and the Investors & Media page of our website at investor.precisionbiosciences.com. All forward-looking statements speak only as of the date of this press release and, except as required by applicable law, we have no obligation to update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise.

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