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

DIVISION OF
CORPORATION FINANCE

November 15, 2018

Matthew Kane
President and Chief Executive Officer
Precision BioSciences, Inc.
302 East Pettigrew St., Suite A-100
Durham, NC 27701

Re: Precision BioSciences, Inc.
Draft Registration Statement on Form S-1
Submitted on October 19, 2018
CIK No. 0001357874

Dear Mr. Kane:

We have reviewed your draft registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

Draft Registration Statement on Form S-1

Prospectus Summary, page 1

1. We note your statements of industry leadership on pages 1 and 3. Given the early stage of your development and the competition in this space, please tell us the basis for your leadership claims. Also, revise the "Overview" section on page 1 to clarify that your operations are preclinical in nature.

2. We note numerous performance claims on pages 1-4, and elsewhere in the prospectus, concerning I-Crel nucleases generally and your ARCUS neucleases and platform. Given your risk factor disclosures on page 15 concerning the differences between animal and

human DNA and on page 31 concerning off-target editing in humans, it is not clear what basis you have to make these performance claims. For instance, and without limitation, we refer to your disclosures concerning I-Crel's ability to achieve "a high level of on-target editing" and your ability to redirect ARCUS nucleases "without compromising its editing abilities." Accordingly, please revise to clarify the basis for performance claims and balance the Summary presentation to highlight challenges you face as you advance into clinical development. To avoid confusion, please also consider placing disclosures concerning the attributes of I-Crel under a heading separate from one that addresses the attributes of your proprietary ARCUS nucleases.

3. We refer to your table on page 3 depicting your product development pipeline. Please revise to remove the unidentified *in vivo* gene correction platform candidate or tell us why you believe the inclusion of this unidentified program candidate is appropriate. Also, revise your presentation so that all text contained in the table is legible.

4. We refer to the final paragraph on page 3 and your disclosure on page 90 concerning the Servier collaboration agreement. Please revise your Summary discussion on page 3 to explain briefly your role in the development of each antigen target selected by Servier. Also clarify here, and elsewhere in the prospectus, whether Servier has selected any antigen targets in addition to the CD19 target.

5. Please revise the Summary to explain briefly the following terms at first use or in close proximity thereto: "immunotherapy", "CAR T Cells", "allogeneic", "*in vivo*" and "base 3' overhangs".

6. We refer to the second paragraph on page 4 concerning your Food and Agriculture segment. Please revise to explain briefly how your business model is "differentiated." With reference to your risk factor discussion on page 12, please revise to briefly discuss the potential timeline for commercialization of product candidates in this segment.

Risk Factors

We expect to take advantage..., page 15

7. Your risk factor disclosure on page 15 discusses your intention to take advantage of a research tax incentive program in Australia; however, your Business discussion does not address any operations or plans concerning Australia. Accordingly, please revise your Business discussion or advise.

Use of Proceeds, page 80

8. With reference to your product pipeline table on page 3 and your R&D expense table on page 92, please revise the Use of Proceeds section to identify the approximate amount of proceeds, if any, intended for each clinical and preclinical candidate. For each candidate, indicate whether the offering funds are intended to be used to reach a particular stage of development. To the extent that offering funds will not be sufficient to complete a

particular stage of development, please also explain the need for additional funding to complete that stage of development.

Management's discussion and analysis of financial condition and results of operations
Critical accounting policies and use of estimates
Stock-based compensation, page 104

9. Once you have an estimated offering price or range, please explain to us how you determined the fair value of the common stock underlying your equity issuances and the reasons for any differences between the recent valuations of your common stock leading up to this offering and the estimated offering price. This information will help facilitate our review of your accounting for equity issuances including stock compensation and beneficial conversion features.

Business
Our ARCUS genome editing platform, page 115

10. We refer to the final sentence in the first paragraph under the heading. Please revise to disclose how many ARCUS nucleases you have patented to date and discuss, as applicable, any uncertainty concerning whether an engineered nuclease is patentable.

Our product development platform approach , page 117

11. We refer to your disclosures on pages 123 and 124 concerning the four product candidates in your CAR T cell development pipeline. In this section you disclose conclusions without providing information concerning the studies or the results that formed the basis for your conclusions. Accordingly, please substantially revise this section to explain the studies, including who conducted them, their scope and design, and the primary and secondary endpoints, if any.

Our food and agriculture program, page 127

12. With reference to your footnote disclosure on page 3, please revise the Business discussion to discuss the development stages for food and agricultural products. Discuss, as applicable, whether there is any regulatory significance or implications tied to achievement of the various field stages. In this regard, we note that your disclosure on page 149 discusses the process for submitting petitions requesting a determination of non-regulated status.

Ultra-low saturated fatty acid canola oil..., page 130

13. We note your disclosure here and elsewhere in the prospectus highlighting your achievement of significantly lower levels of saturated fatty acids in edited canola oil varieties. Please tell us, and revise, as applicable, to discuss the challenges you face in development of these canola oil varieties, including, as applicable, whether you have

observed any less desirable traits. For instance, please tell us whether the optimized varieties have shown altered levels of other fats or whether the varieties have altered cooking properties (*e.g.*, a materially different smoke point).

License and Collaboration Agreements, page 132

14. We note your disclosure on F-28 that you entered into a research, collaboration and license agreement with the University of Pennsylvania that includes three gene knockout programs and up to three gene knockin or gene repair programs in which the company will provide funding to the University of Pennsylvania and receive a license to certain technology invented under the agreement. Please expand your License and Collaboration Agreement disclosure to describe the material terms of the agreement, including financial and termination provisions. Additionally, please file this agreement as an exhibit or provide an analysis supporting a determination that you are not required to file it pursuant to Item 601(b)(10) of Regulation S-K.

License and Collaboration Agreements
Servier, page 132

15. Please revise to discuss Servier's obligations, if any, to develop and commercialize a candidate following exercise of a commercial option. Discuss, as applicable, whether the agreement contains development and commercialization milestones that must be achieved by specific deadlines.

16. We note your disclosure on page 132 that you are eligible to earn tiered royalties on net sales of optioned products ranging from mid single-digit to low double-digit percentages. The upper bound of the range is very broad and therefore does not provide investors with a meaningful understanding of the potential royalty payments. Accordingly, please revise so that the range for the upper bound is discernible within 10 percentage points.

Competition, page 135

17. Please revise your discussion of competitive conditions by describing the current landscape for patent protections in your industry. In this regard, we note that across several risk factors on pages 52 to 63 you highlight risks stemming from existing third-party patents and patent applications. We further note your 2014 patent litigation settlement with Cellectis. In your discussion of the competitive landscape, identify specific patents and patent applications, if material, as well as their holders/applicants.

Notes to consolidated financial statements
Note 1: Description of business and summary of significant accounting policies
Share-based compensation, page F-12

18. It appears that your policy to recognize the grant-date fair value of stock options granted

to non-employees over the requisite service period is consistent with the guidance applicable to employee grants under ASC 718. Please tell us how your policy complies with the equity-based payments to non-employees guidance in ASC 505-50.

Recent accounting pronouncements not yet adopted, page F-12

19. Please revise your disclosure on page F-13 regarding the new revenue recognition standards under ASC 606 to specifically discuss your consideration of the transition method to be applied under ASC 606-10-65-1d.

Note 13: Collaboration and license agreements, page F-26

20. Please address the following comments related to your agreement with Les Laboratories Servier:
    - Tell us why you recognized only $5.8 million and $4.8 million of revenue under this agreement in 2017 and 2016, respectively, when you disclose on page 94 that you recognize the $105.0 million upfront fee ratably over the 9.5 year performance period which would imply recognition of approximately $11.1 million on an annual basis.
    - Revise your disclosure to clearly identify each deliverable and separate unit of accounting, the arrangement consideration allocated to each separate unit of accounting and how you will account for each. See ASC 605-25-50-2. In this regard, although you indicate on the top of page F-27 that "certain development milestones related to early-stage activities" are nonsubtantive and are combined with the development license into a single unit of accounting, you do not appear to discuss the accounting for substantive milestones or the option exercise fees under the arrangement.
    - Revise your disclosure to disclose a description and the amount of each milestone within the $1.6 billion of potential consideration disclosed at the bottom of page F-26 as well as whether each is substantive as required by ACS 605-28-50-2.

Note 15: Subsequent events, page F-28

21. Please revise your disclosure here and in your contractual obligations and commitments disclosure on page 101 to indicate the magnitude of your commitment under the research, collaboration and license agreement with the University of Pennsylvania. Otherwise, tell us why such disclosure is not warranted.

General

22. Please provide us proofs of all graphics, visual, or photographic information you will provide in the printed prospectus prior to its use, for example in a preliminary prospectus. Please note that we may have comments regarding this material.

23. Please supplementally provide us with copies of all written communications, as defined in

Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications.

You may contact Mark Brunhofer at (202) 551-3638 or Mary Mast at (202) 551-3613 if you have questions regarding comments on the financial statements and related matters. Please contact Jeffrey Gabor at (202) 551-2544 or Joseph McCann at (202) 551-6262 with any other questions.

Sincerely,

Division of Corporation Finance
Office of Healthcare & Insurance