



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

DIVISION OF  
CORPORATION FINANCE

Mail Stop 3030

March 21, 2016

Via E-mail

Darrin R. Uecker  
President and Chief Executive Officer  
Pulse Biosciences, Inc.  
849 Mitten Road, Suite 104  
Burlingame, California 94010

**Re: Pulse Biosciences, Inc.  
Amendment No. 1 to Registration Statement on Form S-1  
Filed March 7, 2016  
File No. 333-208694**

Dear Mr. Uecker:

We have reviewed your amended 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 amending your registration statement and providing the requested information. 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 any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments. Unless we note otherwise, our references to prior comments are to comments in our January 18, 2016 letter.

Prospectus Summary, page 1

1. Please provide us with copies of the documents mentioned in the footnotes on pages 1-3 and in the footnotes that now appear on pages 26-30 as we requested in the second sentence of prior comment 4.
2. We note your response to prior comment 5. Revise the disclosure in the first full paragraph on page 2 to disclose which footnotes throughout your document are related to studies and papers authored by Dr. Nuccitelli. Also, ensure that you have disclosed the relationship between you and the authors mentioned in the footnotes throughout your document. For example, we note the reference to "Nuccitelli P." in footnote (3) on page 2, footnote (19) on page 28 and footnote (30) on page 30.

3. We note your response to prior comment 7. Please revise the disclosure about “pre-clinical data” mentioned in the second paragraph on page 1 to remove any implication that the data is the result of your studies. Also, revise the disclosure about “Animal studies” mentioned in the second paragraph on page 26, “Animal trials have suggested” mentioned in the penultimate paragraph on page 27 and “Existing animal data suggest” mentioned in the last paragraph on page 27 to remove any implication that the data is the result of your studies.
4. Refer to your discussion of 510(k) clearance on page 4. Please revise further so an investor may understand why there might exist a “predicate device” for these purposes, in light of your disclosure elsewhere that you believe your device is the first or only device to perform the functions described in your prospectus.
5. We note your response to our prior comment 9. Please revise further to discuss the limited nature of certain of the referenced studies and trials. For example, we note the limited subject pool of several of the studies.

Because we and one of our licensors have used federal funding, page 11

6. We note your response to prior comment 13. Please remove the disclosure in the sixth sentence in this risk factor that mitigates the risk.

License and Other Agreements, page 37

7. We note your response to prior comment 17. Please tell us with specificity where the provision concerning the milestone mentioned in the fifth paragraph of this section appears in your license agreement with ODURF and EVMS.

Executive Employment Agreements, page 68

8. Please tell us why you did not include in this filing the disclosure regarding Dr. Richard Nuccitelli that appeared on page 71 of your prior filing.

Related Party Transactions, page 70

9. Please tell us with specificity where you included the disclosure in response to prior comment 26 regarding proceeds of this offering to be used to pay the amounts owed to the related parties.

Principal Stockholders, page 72

10. Refer to footnote (2). Tell us how you determined it was appropriate to exclude the shares underlying options from the table.

Darrin R. Uecker  
Pulse Biosciences, Inc.  
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Page 3

Underwriting Discounts and Expenses, page 88

11. Tell us whether you considered whether the rights offering should be valued and included in underwriting compensation.

Report of Independent Registered Accounting Firm, page F-2

12. We note that the report of your independent auditor is not signed. Please amend your filing to include a signed audit report. Refer to Rule 2-02(a)(2) of Regulation S-X and Item 302 of Regulation S-T which provides guidance on including signatures in electronic filings.

Exhibits

13. We note your response to prior comment 29. Please file as an exhibit the research and funding agreement mentioned on page 39.

You may contact David Burton at (202) 551-3640 or Kevin Kuhar, Accounting Branch Chief, at (202) 551-3662 if you have questions regarding comments on the financial statements and related matters. Please contact Tom Jones at (202) 551-3602 or me at (202) 551-3528 with any other questions.

Sincerely,

/s/ Amanda Ravitz

Amanda Ravitz  
Assistant Director  
Office of Electronics and Machinery

cc: Andrew Hudders, Esq.