



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

DIVISION OF
CORPORATION FINANCE

Mail Stop 3030

January 18, 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.
Registration Statement on Form S-1
Filed December 22, 2015
File No. 333-208694**

Dear Mr. Uecker:

We have reviewed your 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.

Calculation of Registration Fee Table

1. Please revise footnote 1 to the table to identify the specific subsection of Rule 416 of the Securities Act of 1933 relied upon and to track the language of that subsection.

Prospectus Cover Page

2. Please highlight your relationship with MDB Capital Group, LLC mentioned in the last paragraph on page 8.

Prospectus Summary, page 1

3. Please revise your prospectus summary disclosure on pages 1-6 to avoid repetition of the detail that you include later in your prospectus. For example, we note that much of the

disclosure and related footnotes in the summary appear in the disclosure and footnotes beginning on page 26 and elsewhere in your prospectus.

4. Please tell us whether you commissioned any of the third-party data presented in your prospectus. Also, provide us with copies of the documents mentioned in the footnotes on pages 1-4.
5. Regarding the authors mentioned in the footnotes throughout your prospectus, please disclose the relationship between you and the authors. For example, we note the references in several footnotes on pages 1-3 to “Nuccitelli R” and your disclosure on page 71 that Dr. Richard Nuccitelli is your Chief Science Officer and your disclosure in footnote (10) on page 75.
6. Please revise the disclosure in the summary to highlight your disclosure that appears on page 48 that the report of the independent registered public accounting firm on your consolidated financial statements contains an explanatory paragraph regarding your ability to continue as a going concern. Also, disclose your accumulated deficit as of September 30, 2015. In addition, expand your Risk Factors section to include a risk factor to highlight the explanatory paragraph and your accumulated deficit.
7. If the pre-clinical evidence that you mention in the second paragraph on page 1 and at the bottom of page 2 is the not the result of your studies, revise to remove any implication to the contrary. In this regard, tell us about any relationships you had with the studies, including whether you commissioned the studies.
8. Please revise the disclosure about the studies mentioned at the bottom of page 2 to clearly state, if true, that the studies are animal trials. In this regard, we note your disclosure at the bottom of page 27 about animal studies.
9. With a view toward balanced disclosure as to what your technology has shown in pre-clinical studies, tell us whether your studies have revealed any material disadvantages.
10. Please clearly explain each step you must take to reach commercialization of your technology to address the billion dollar markets mentioned on pages 2-4. Also, disclose any material hurdles before you are able to address these markets. If such information is appropriate for your prospectus summary, carefully consider the information that is the most significant, and briefly highlight that information in the summary and include more detailed disclosure elsewhere in your prospectus.

Emerging Growth Company, page 7

11. 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.

Risk Factors, page 9

12. Please include a risk factor to highlight the risk concerning the amount of your goodwill and intangible assets compared to your total assets.

We are subject to regulation in respect of our research and federal funding, page 12

13. Please present as a separate risk factor the risk concerning “March-In rights” mentioned in the last sentence of this risk factor.

If we fail to maintain proper and effective internal controls, page 17

14. Please tell us the authority on which you relied to determine the December 2016 date mentioned in the last paragraph of this risk factor.

Our Technology, page 29

15. Please revise the disclosure on page 29 to explain the significance of the phrase “electric field strengths of 10-100 kV/cm.” Also, revise the disclosure on page 30 to explain the terms “pyknosis” and “caspase activation” so that they can be understood by an investor not in your industry.

Clinical Trial Results, page 34

16. With a view toward balanced disclosure as to what your technology has shown in clinical studies, tell us whether your studies have revealed any material disadvantages.

License and Other Agreements, page 37

17. Please expand the disclosure in the last paragraph on page 37 to identify the “certain milestones.”
18. Please expand the disclosure in the first paragraph on page 38 to disclose the term of the license agreement.
19. Please expand the disclosure in this section to discuss the material terms of the license agreement and the amended license agreement with AIM.

Management's Discussion and Analysis of Financial Condition and Results of Operations

Major Transactions in 2014, page 45

20. For the acquisitions of ThelioPulse, BioElectroMed and NanoBlate, you disclose here and on page F-15 in Note 3 that the company utilized the assistance of an outside valuation firm to assist in identifying and evaluating the fair value of the assets acquired. Please revise to clarify the nature and extent of the valuation firm's involvement and management's reliance on the work of the valuation firm. Please refer to Question 141.02 of the Compliance and Disclosure Interpretations on Securities Act Sections, which can be found at <http://www.sec.gov/divisions/corpfin/guidance/sasinterp.htm>.

Unaudited Pro Forma Condensed Consolidated Balance Sheet, page 59

Pro Forma Adjustments, page 60

21. Please revise adjustment number 4 to more clearly describe the conversion of the notes to common stock, similar to the disclosure provided in the second paragraph of page F-54.
22. Please revise adjustment number 7 to disclose that it also includes the allocation of acquisition purchase price adjustments.

Unaudited Pro Forma Condensed Consolidated Statement of Operations, page 63

23. We note that the amounts presented for Pulse Biosciences during the period of May 19, 2014 (inception) through December 31, 2014 do not agree to the audited consolidated statement of operations for the same period presented on page F-4. Please revise the pro forma statement of operations to agree to the historical audited Pulse Biosciences statement of operations. Please also revise the summarized pro forma information presented on page 46 to comply.

Management, page 65

24. Please expand the disclosure on page 66 to include the business experience of Mr. Levinson from January 2011 to January 2015.

Executive Compensation, page 70

25. Please update your executive compensation disclosure for the year ended December 31, 2015. Also, update your director compensation disclosure on page 71 for the year ended December 31, 2015.

Related Party Transactions, page 73

26. Please tell us whether the proceeds of this offering will be used to pay the amounts owed to the related parties discussed in this section.

Principal Stockholders, page 74

27. Please disclose the natural person or persons who exercise the sole or shared voting and/or dispositive powers with respect to the shares held by the entities mentioned in the table on page 74.

Estimated Use of Proceeds, page 76

28. Please revise to quantify the amount of proceeds to be allocated to each purpose cited in the bullet points on page 76. Also, if the proceeds of this offering would not provide sufficient funds to complete the purposes that you have highlighted, please provide the disclosure required by Instruction 3 to Regulation S-K Item 504.

Exhibits

29. Please file as exhibits the license agreement and the research and funding agreements mentioned on page 38 and the lease agreement mentioned on page 44.

Exhibit 10.12

30. Please file as separate exhibits the license agreement and the two amendments to the agreement as three separate exhibits to the registration statement.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement, please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for

Darrin R. Uecker
Pulse Biosciences, Inc.
January 18, 2016
Page 6

the adequacy and accuracy of the disclosure in the filing; and

- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact David Burton at (202) 551-3626 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.