



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

DIVISION OF  
CORPORATION FINANCE

Mail Stop 3030

April 15, 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. 2 to Registration Statement on Form S-1  
Filed March 28, 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 March 21, 2016 letter.

Prospectus Summary, page 1

1. We are unable to agree with your response to prior comment 5 given the tests appear to be in order to pursue regulatory clearance for your system rather than for marketing. Please revise your disclosure to highlight the limited nature of certain of the referenced studies and trials.

Business, page 26

2. Please tell us why you do include in this section disclosure required by Item 101(a) of Regulation S-K regarding your relationship with Electroplate, Inc.

Darrin R. Uecker  
Pulse Biosciences, Inc.  
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Page 2

Exhibits

3. We are unable to agree with your response to prior comment 13 given the agreement was performed in part after you filed the registration statement on December 22, 2015. File as an exhibit the research and funding agreement mentioned on page 40.

Exhibit 5.1

4. The opinion that you file to satisfy your obligations under Regulation S-K Item 601(b)(5) may not assume conclusions of law that are a necessary requirement of the ultimate opinion nor may it assume any of the material facts underlying the opinion or facts that are readily ascertainable. We note the last two sentences of the second paragraph of the exhibit that you filed. Please file an opinion that is revised as appropriate.

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.