



DIVISION OF  
CORPORATION FINANCE

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549-4631

October 24, 2011

Via U.S. Mail

Mr. Johan M. (Thijs) Spoor  
Chief Executive Officer  
FluoroPharma Medical, Inc.  
500 Boylston Street, Suite 1600  
Boston, MA 02116

**Re: FluoroPharma Medical, Inc.  
Pre-effective Amendment 5 to Registration Statement on Form S-1  
Filed October 18, 2011  
File No. 333-175647**

Dear Mr. Spoor:

We reviewed the filing and have the comment below.

Financial Statements, page 60

1. Provide the report of the independent public accounting firm as required by Rule 2-02 of Regulation S-X.

Closing

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 that the Securities Act 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 that they have made.

Notwithstanding our comments, if 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.

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- 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 the adequacy and accuracy of the disclosure in the filing.
- 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 responsibilities under the Securities Act and the Securities Exchange Act as they relate to the proposed public offering of the registered securities.

You may contact Edward M. Kelly, Senior Counsel, at (202) 551-3728 or me at (202) 551-3765 with any questions.

Very truly yours,

/s/ Pamela A. Long

Pamela A. Long  
Assistant Director

cc: Via facsimile  
Marc J. Ross, Esq.  
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