



DIVISION OF
CORPORATION FINANCE

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

July 25, 2011

Via U.S. Mail

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

Re: FlouroPharma Medical, Inc.
Amendment 1 to Current Report on Form 8-K dated May 16, 2011
Filed July 12, 2011
Annual Report on Form 10-K for the fiscal year ended December 31, 2010
Filed March 16, 2011
File No. 333-147193

Dear Dr. Elmaleh:

We reviewed the above-captioned filings and have the following comments.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 32

Results of Operations, page 40

1. It appears that professional fees represent a significant portion of your operating expenses. Please revise your results of operations to discuss the reasons for the changes in your professional fees line item for all periods presented.

Unregistered Sales of Equity Securities, page 50

Registration Rights, page 54

2. We note your response to comment eight in our letter dated June 9, 2011. Please revise your disclosure in a similar manner to your response to state that there are no cash penalties under the registration rights agreement and no penalties resulting from delays in registering the securities sold in the private placement offering.

Item 9.01 – Financial Statements
General

3. We note your response to comment 19 in our letter dated June 9, 2011. Please tell us how you account for these shares of preferred stock and attached warrants, including what consideration you gave to whether there is a beneficial conversion feature. You state that the conversion price is set at \$.83 per share, subject to adjustment as provided in the certificate of designation. Please clearly disclose in what situations the conversion price would be adjusted. If applicable, please address your consideration of ASC 815-40-15 in accounting for the preferred stock.

6. Liability Settlements, page F-11

4. We note your response to comment 20 in our letter dated June 9, 2011. Please explain to us the nature of the relationship you have with QuantRx and correspondingly how you determined that it was appropriate to record a gain on debt settlement of \$1,281,498. You indicate that the fair value of the stock issued as consideration was based on the prevailing market rate of all stock transactions in that time period. Please tell us to which stock transactions you are referring. Please also tell us when these transactions took place. Please tell us how you determined that the fair value used was reasonable.

8. Commitments and Contingencies, page F-12

License Agreements, page F-12

5. We note your response to comment 21 in our letter dated June 9, 2011. Please revise your disclosure to indicate that you have not met the obligations stipulated by the license agreement. Please also disclose that the agreement remains in full force and that Massachusetts General Hospital has waived the requirement to raise an aggregate of \$2 million in capital. Please also disclose the date that the requirement was waived and through which date it was waived. Please disclose the potential impact of Massachusetts General Hospital no longer waiving this requirement and cancelling or making non-exclusive certain licenses.

Johan M. (Thijs) Spoor
FluoroPharma Medical, Inc.
July 25, 2011
Page 3

Pro Forma Unaudited Consolidated Financial Statements for the Year Ended December 31, 2010 and the Three Months Ended March 31, 2011, page F-1

Pro Forma Balance Sheet, page F-1

6. Please revise your pro forma consolidated financial statements to remove the pro forma balance sheet as of December 31, 2010.

Pro Forma Income Statement, page F-2

7. We note your response to comment 28 in our letter dated June 9, 2011. Please revise your pro forma financial information to include the following:
 - Please revise your pro income statement to include both basic and diluted earnings per share information. Please label your pro forma income statement accordingly.
 - Please provide the calculations used to determine your earnings per share.
 - Please include reconciliation between the historical and pro forma weighted average shares used in computing basic and diluted earnings per share. Your current disclosure does not show how you arrive at your pro forma weighted average number of common shares outstanding of 14,205,038.
8. We note your response to comment 30 in our letter dated June 9, 2011. It is not clear how you arrived at the adjustments to interest expense based on the description in the corresponding note. It appears that the adjustment consists of multiple components. Please clearly identify each component and how you arrived at the component amount.

Notes to Pro Forma Financial Statements December 31, 2010, page F-3

9. With regard to Note J, please tell us where the impact of this adjustment is included in your pro forma financial statements. It appears that your financial statements are not appropriately labeled to include Note J. Please revise your pro forma financial statements accordingly.
10. With regard to Note L, you indicate that this adjustment reflects the elimination of historical activity of FluoroPharma Medical, Inc. and only the income statement of FluoroPharma, Inc. will remain. Please address the appropriateness of removing the historical activity of FluoroPharma Medical, Inc. from your pro forma income statement.

Johan M. (Thijs) Spoor
FluoroPharma Medical, Inc.
July 25, 2011
Page 4

Form 10-K for the Period Ended December 31, 2010

Financial Statements

Report of Independent Registered Public Accounting Firm, page F-1

11. We note your response to comment 31 in our letter dated June 9, 2011. As previously requested, please make arrangements with your independent registered public accounting firm to have it revise its audit opinion to reference also the related statement of operations, stockholders' equity, and cash flows for the period January 25, 2007 (Inception) to December 31, 2010.

You may contact Ernest M. Greene, Staff Accountant, at (202) 551-3733 or Nudrat S. Salik, Staff Accountant, at (202) 551-3692 if you have questions on the financial statements and related matters. You may contact Edward M. Kelly, Esq. at 202-551-3728 or me at (202) 551-3397 if you have any other questions.

Sincerely,

/s/ Jay Ingram

Jay E. Ingram
Legal Branch Chief

cc: Via Facsimile
Marc J. Ross, Esq.
Marcelle S. Balcombe, Esq.
Sichenzia Ross Friedman Ference LLP
61 Broadway, 32nd Floor
New York, NY 10006