



DIVISION OF
CORPORATION FINANCE

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

June 9, 2011

Dr. David R. Elmaleh
Chairman
FluoroPharma Medical, Inc.
500 Boylston Street, Suite 1600
Boston, MA 02116

Re: FlouoroPharma Medical, Inc.
Current Report on Form 8-K dated February 14, 2011
Filed May 16, 2011
File No. 333-147193

Form 10-K for the period ended December 31, 2010
Filed March 16, 2011
File No. 333-147193

Form 10-Q for the period ended March 31, 2011
Filed May 16, 2011
File No. 333-147193

Dear Dr. Elmaleh:

We have reviewed your filing and have the comments below. In some of our comments, we may ask you to provide us information so that we may better understand your disclosure.

Please respond to this letter within 10 business days by providing the requested information, or by advising us when you will provide the requested response. If you do not believe that our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing the information you provide in response to these comments, we may have additional comments.

General

1. The EDGAR system reflects May 16, 2011 as "Date of report (Date of earliest event reported)." Please revise.

2. Please update the EDGAR company profile of FPM to include its current business address and mailing address.

Intellectual Property, page 11

3. Please state the date on which the United States patent was granted for catalytic radiofluorination and the date on which the patent expires.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 35

4. We note the phrase "within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended." Since FPM is a penny stock issuer, FPM is ineligible to rely on the safe harbor provision of the Private Securities Litigation Reform Act of 1995 for forward looking statements. See Section 27A(b)(1)(C) of the Securities Act and Section 21E(b)(1)(C) of the Exchange Act. Please delete the phrase or make clear that FPM is ineligible to rely on the safe harbor provision because it is a penny stock issuer.

Recent Accounting Pronouncements, page 37

5. With regard to your discussion of FASB 160, EITF 07-1 and EITF 07-5, you disclosed that you are currently assessing the impact that these accounting pronouncements may have on your financial position, results of operations and cash flows. Given that these pronouncements were effective as of the date of your financial statements, please revise your filing to disclose the impact of these pronouncements.

Critical Accounting Policies

Research and Development Costs, page 42

6. On page 26, you indicate that you have been awarded approximately \$797,000 in grants and have recognized approximately \$206,000 of such awards as revenue. Given that you have no reported revenue amounts, please revise your disclosure as necessary. Please revise your accounting policy to disclose how you account for these research grants. Refer to ASC 730-20 and ASC 810-30.

Results of Operations, page 43

7. Please update your filing to discuss your results of operations for the three months ended March 31, 2011 compared to March 31, 2010. Refer to Item 2 of Form 10.

Unregistered Sales of Equity Securities

Registration Rights, page 54

8. Please disclose whether there are any maximum cash penalties under the registration rights agreement, if applicable. Please also disclose any additional penalties resulting from delays in registering your notes. Refer to FASB ASC 825-20-50-1.

Directors and Executive Officers, Promoters and Control Persons, page 46

9. Describe briefly the business experience of Messrs. Johan M. (Thijs) Spoor and Walter Witoshkin during the past five years. See Item 5.02(c)(2) of Form 8-K and Item 401(e) of Regulation S-K. Further, disclose in Dr. David R. Elmaleh's biographical paragraph that he founded FPI in 2003.

Employment Agreement with Executive Officers, page 48

10. Provide a brief description of the terms and conditions of Dr. David R. Elmaleh's employment agreement, including the amounts payable under the agreement. See Item 5.02(e) of Form 8-K. Also file the employment agreement as an exhibit in FPM's next periodic report under the Exchange Act. See Item 601(b)(10) of Regulation S-K.
11. We note the disclosure on page 23 that FPM's performance is substantially dependent on the performance of its senior management and key scientific and technical personnel, particularly Dr. David R. Elmaleh and Mr. Johan M. (Thijs) Spoor, and that FPM has entered into employment agreements. If FPM has entered into an employment agreement with Mr. Spoor, provide a brief description of the terms and conditions of the employment agreement, including the amounts payable to Mr. Spoor under the agreement. See Item 5.02(e) of Form 8-K. Further, file the employment agreement as an exhibit in FPM's next periodic report under the Exchange Act. See Item 601(b)(10) of Regulation S-K.

Certain Relationships and Related Transactions, page 50

12. We note the disclosure that FPM uses office space leased by a company in which Dr. David R. Elmaleh, its chairman and chief scientific officer, has an ownership interest and that FPM does not have a written agreement governing the use. If FPM is party to an oral contract that would be required to be filed as an exhibit under Item 601(b)(10) of Regulation S-K if it were written, FPM should provide a written description of the contract as an exhibit in FPM's next periodic report under the Exchange Act. For guidance, you may wish to refer to Question 146.04 in the Regulation S-K section of our

“Compliance and Disclosure Interpretations” available on the Commission’s website at <http://www.sec.gov>.

13. We note the disclosure that FPI entered into an exclusive license agreement with Dr. David R. Elmaleh as of August 16, 2005. File the exclusive license agreement as an exhibit in FPM’s next periodic report under the Exchange Act. See Item 601(b)(10) of Regulation S-K.
14. We note the disclosure that Dr. David R. Elmaleh receives a portion of royalty payments paid to Massachusetts General Hospital by FPI under a license agreement. If since the beginning of FPM’s last fiscal year or any currently proposed transaction in which FPM was or is to be a participant and the amount involved exceeds \$120,000 and in which Dr. Elmaleh had or will have a direct or indirect material interest, disclose the approximate dollar value of the amount involved in the transaction and the approximate dollar value of the amount of Dr. Elmaleh’s interest in the transaction which is to be computed without regard to the amount of profit or loss. See subparagraphs (3) and (4) of Item 404(a) of Regulation S-K and the instructions to Item 404(a). Further, file the license agreement as an exhibit in FPM’s next periodic report under the Exchange Act. See Item 601(b)(10) of Regulation S-K.
15. Identify each of the directors and officers who converted deferred compensation in the private placement offering, and disclose the amount of deferred compensation that each director and officer converted.

Common Stock, page 53

16. Disclose whether holders of FPM’s common stock have cumulative rights in the election of directors.

Exhibit 2.1

17. Refile the exhibit with a list briefly identifying the contents of all omitted schedules, together with an agreement to furnish supplementally a copy of any omitted schedule to the Commission upon request. See Item 601(b)(2) of Regulation S-K.

Item 9.01 – Financial Statements

General

18. Please revise to include financial statements for the interim period ended March 31, 2011 for FluoroPharma, Inc. These financial statements may be unaudited. Refer to Item 9.01 of Form 8-K and Rule 8-03 of Regulation S-X.
19. Please clearly disclose the significant terms of the Series A Preferred Stock, including any rights and obligations of the holders of this stock. For example, your disclosures on page 32 indicate that the holders of the preferred stock will be paid a one-time dividend. Please also disclose the amount of this expected dividend, when you expect to pay the dividend, and what source of cash will be used to pay for the dividend.

6. Liability Settlements, page F-12

20. You disclosed that QuantRx agreed to convert all outstanding receivables in the aggregate amount of \$1,568,567 into 1,148,275 shares of Class A common stock, with a fair value of \$287,069. You indicate that in connection with this settlement, you recognized a gain on debt settlement of \$1,281,498. Please disclose whether QuantRx is a related party. Please also disclose how you determined the fair value of the stock issued as consideration. Refer to ASC 505-50.

8. Commitments and Contingencies

License Agreements, page F-13

21. In the second quarter of 2009, you renegotiated three of your technology licenses with Massachusetts General Hospital into one exclusive technology license. The renegotiated license stipulates that you meet certain obligations, including, but not limited to, raising an aggregate \$2 million in capital by the second quarter of 2010 and meeting certain development milestones relating to clinical trials and filings with the FDA. Please disclose whether you have met the obligations stipulated by the license agreement. If not, please disclose the potential impact of Massachusetts General Hospital cancelling or making non-exclusive certain licenses.

Pro Forma Unaudited Consolidated Financial Statements for the Year Ended December 31, 2010, page P1

22. Please revise your pro forma information to also include pro forma financial for the interim period ended March 31, 2011 and update your pro forma balance sheet to include

a balance sheet as of March 31, 2011. Refer to paragraph (b)(1) of Item 9.01 of Form 8-K.

23. Please clarify how you arrived at the adjustment amounts for common stock based on the description provided in note (3). It is also not clear what you are referring to when you state that the pro forma adjustments to common stock include FluoroPharma, Inc. adjustments.
24. It appears that your pro forma financial information is giving pro forma effect to multiple transactions, including the Qualified Financing and the recapitalization transaction. Please include the adjustments related to the recapitalization transaction in a separate column.

Pro Forma Balance Sheet, page P1

25. Please help us understand why you did not eliminate the accumulated deficit of \$120,205 of FluoroPharma Medical Inc., the accounting acquirer, in accordance with ASC 805-40-45-1.
26. In note (1) to your pro forma balance sheet, you indicate that you included a pro forma adjustment to cash to reflect the gross proceeds of a bridge loan. Please help us understand why a corresponding pro forma adjustment was not made to your pro forma liabilities.
27. To help us better understand the impact of the recapitalization transaction, please provide us with a statement of stockholders' equity that begins from January 1, 2011. Please provide us with explanations for the adjustments made to retroactively reflect the recapitalization transaction, as appropriate.

Pro Forma Income Statement, page P2

28. Please revise your pro forma financial information to include the following:
- Provide both basic and diluted earnings per share information;
 - Provide the calculations used to determine your earnings per share;
 - Include a reconciliation between the historical and pro forma weighted average shares used in computing basic and diluted EPS; and
 - Disclose any shares not included for anti-dilution reasons. Refer to ASC 260-10-50-1c.
29. Please revise your disclosure to include a note that clearly explains your pro forma provision for income taxes.

Dr. David R. Elmahel
June 9, 2011
Page 7

30. Please tell us what consideration you gave to including an adjustment to interest expense for the impact of the bridge loans included in your pro forma financial information.

Form 10-K for the period ended December 31, 2010

Financial Statements

Report of Independent Registered Public Accounting Firm, page F1

31. Please advise or make arrangements with your independent registered public accounting firm to have them revise their audit opinion to also reference the related statement of operations, stockholders' equity and cash flows for the period January 25, 2007(Inception) to December 31, 2010.

Form 10-Q for the period ended March 31, 2011

Item 4. Controls and Procedures, page 12

32. We note that your certifying officers concluded that your disclosure controls and procedures were effective as of March 31, 2011 and that, as of December 31, 2010, the conclusion was that your disclosure controls and procedures were not effective. Given that you state that there were no changes in internal control over financial reporting, it is not apparent how your certifying officers reached the conclusion they did for the period ended March 31, 2011. Please advise.

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 Exchange Act of 1934 and all applicable Exchange 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.

In responding to our comments, please provide a written statement from the company acknowledging that:

- The company is responsible for the adequacy and accuracy of the disclosure in the filing.
- Staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing.

Dr. David R. Elmahel
June 9, 2011
Page 8

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

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,

Jay E. Ingram
Legal Branch Chief

cc: By facsimile to (212) 930-9725 and U.S. Mail
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