



DIVISION OF
CORPORATION FINANCE

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

September 27, 2011

Via Email

Mr. Patrick G. Rooney
Chief Executive Officer
Positron Corporation
7715 Loma Ct., Suite A
Fishers, IN 46038

**Re: Positron Corporation
Amendment No. 1 to Form 10-K for the Year Ended December 31, 2010
Filed September 15, 2011
Form 10-Q for the Quarter Ended June 30, 2011
Filed August 15, 2011
File No. 000-24092**

Dear Mr. Rooney:

We have reviewed your response filed September 15, 2011 and have the following additional 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 within ten business days by amending your filings, by providing the requested information, or by advising us when you will provide the requested response. 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 filings and the information you provide in response to these comments, we may have additional comments.

Form 10-K/A for the fiscal year ended December 31, 2010 filed September 15, 2011

Non-Employee Director Compensation, page 27

1. We note from your response to prior comment 1 that Mr. Okamura and Dr. Nicholls were awarded stock options and then surrendered those stock options. If true, please include the substance of your response to prior comment 1 in your filing. Please include the exact dates and amounts of the grants and the dates the options were surrendered for each director. We note, in this regard, that a majority of these equity awards had an expiration

date in December 2010 per the outstanding equity awards table on page 26 of your Form 10-K/A for the fiscal year ended December 31, 2009 filed on September 26, 2011. Please also tell us when those directors will make the appropriate Section 16 filings relating to the acquisition and disposition of those securities. To the extent that the appropriate Forms under Section 16 of the Exchange Act were not timely filed related to those acquisitions and dispositions, please make the disclosure required by Regulation S-K Item 405 in your filing under the heading "Section 16(a) Beneficial Ownership Reporting Compliance." Please also tell how and when Mr. Okamura and Dr. Nicholls acquired the options for Series B preferred stock indicated in the beneficial ownership table on page 27 and why those options should not be considered compensation.

2. Further to above, to the extent that your executive officers also participated in your reorganization, please revise where appropriate to discuss their participation. We note, in this regard, your disclosure of outstanding equity awards of your executive officers as of December 31, 2009 on page 26 of your Form 10-K/A for the fiscal year ended December 31, 2009 filed on September 26, 2011 and that these awards are no longer outstanding as of December 31, 2010 according to your outstanding equity awards table on page 24 of this filing. To the extent that the appropriate Forms under Section 16 of the Exchange Act were not timely filed related to the acquisitions and dispositions of the securities outstanding as of December 31, 2009, please make the disclosure required by Regulation S-K Item 405 in your filing under the heading "Section 16(a) Beneficial Ownership Reporting Compliance."

Item 12. Security Ownership of Certain Beneficial Owners . . . , page 27

3. Please reconcile your disclosure in the table that Solaris Opportunity Fund, L.P. beneficially owns 1,142,714.4 shares of your Series B preferred stock with your disclosure in footnote (c) that Solaris Opportunity Fund, L.P. owns 1,073,000 shares of Series B preferred stock. Please also tell us where the "12,274,140 shares owned directly" by Solaris mentioned in footnote (c) is reflected in your table.
4. Please provide us the calculations supporting your disclosure of the percentage of common stock and percentage of Series B preferred stock beneficially owned by Solaris Opportunity Fund, L.P. and Imagin Diagnostic Centres, Inc. and of the percentage of common stock beneficially owned by each of your officers and directors and "All Directors and Executive Officers as a Group."
5. Please reconcile your disclosure in the table of the number of common shares beneficially owned by Sachio Okamura, Dr. Anthony C. Nicholls and Timothy M. Gabel with your disclosure in footnotes (f), (h), and (j). For example, we note (1) your disclosure in the table that Mr. Okamura beneficially owns 25,000 shares of common stock and your disclosure in footnote (f) that he beneficially owns 25,000 shares of Series B preferred stock which are convertible into 2,500,000 shares of common stock; (2) your disclosure in the table that Dr. Nicholls beneficially owns 15,000 shares of common stock and your

disclosure in footnote (h) that he beneficially owns 15,000 shares of Series B preferred stock which are convertible into 1,500,000 shares of common stock; and (3) your disclosure in the table that Mr. Gabel beneficially owns 365,000 shares of common stock and your disclosure in footnote (j) that he beneficially owns 365,000 shares of Series B preferred stock which are convertible into 36,500,000 shares of common stock. To the extent you make changes to the number of shares beneficially owned by these individuals, please also revise the percentages in the last column as appropriate.

6. The number of common shares beneficially owned by Patrick G. Rooney through Solaris Opportunity Fund, L.P. should also be included in the shares disclosed as beneficially owned by Mr. Rooney in his individual capacity and should be included in the share count under "All Directors and Executive Officers as a Group" with appropriate footnote disclosure in each instance. Please revise.

Signatures, page 39

7. In your amendment, please include the second paragraph and the signatures of the required persons in the required capacities in accordance with General Instruction D to Form 10-K.

Form 10-Q as of June 30, 2011

Note 12. Related Party Transactions, page 12

8. We note your response to prior comment 7. Please revise your future filings to disclose in more detail the nature of this accounts receivable and to fully address why you believe that this accounts receivable is fully collectible as of each reporting date based upon the guidance in 310-10-30 and 35 of the FASB Accounting Standards Codification.

You may contact Tara Harkins, Staff Accountant, at (202) 551-3639 or me at (202) 551-3643 if you have any questions regarding comments on the financial statements and related matters. Please contact Aslynn Hogue, Staff Attorney, at (202) 551- 3841, or Tim Buchmiller, Reviewing Attorney, at (202) 551- 3635 if you have questions on any other comments. In this regard, do not hesitate to contact Martin James, Senior Assistant Chief Accountant, at (202) 551-3671.

Sincerely,

/s/ Kevin L. Vaughn

Kevin L. Vaughn
Accounting Branch Chief