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

DIVISION OF
CORPORATION FINANCE

December 9, 2011

Via E-mail

Jean Francois-Huc
President and Chief Executive Officer
BioAmber Inc.
1250 Rene Levesque West, Suite 4110
Montreal, Quebec, Canada H3B 4W8

Re: BioAmber Inc.
Registration Statement on Form S-1
Filed November 14, 2011
File No. 333-177917

Dear Mr. Huc:

We have reviewed your 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.

General

1. Please be advised that we will process this filing and any amendments without a price range. Because the price range triggers a number of disclosure matters, we will need sufficient time to process the amendment when it is included. Please understand that its effect on disclosure throughout the document may cause us to raise issues on areas upon which we have not previously commented.

2. As indicated in the comment above, we note that you have omitted certain pricing-related information as well as other information from this filing. If you intend to rely on Rule 430A, please note that Rule 430A does not allow for the omission prior to effectiveness of amounts that may be computed based on the maximum number of shares offered and the mid-point of the offering price range, or the number of shares to be offered on the cover. In addition, please confirm that you will not circulate copies of the registration

statement or the preliminary prospectus until you include an estimated price range, maximum number of shares, dollar amounts dependent upon the offering price that are based on the mid-point of the offering price range, and all other information except information you may exclude in reliance upon Rule 430A.

3. Please provide us with copies of any artwork or other graphics you intend to use in your prospectus. Please refer to Section VIII of our March 31, 2001 update to our Current Issues and Rulemaking Projects outline for additional guidance

4. Prior to the effectiveness of your registration statement, please inform us as to whether or not the amount of compensation allowable or payable to the underwriters has received clearance by FINRA.

5. We note your use of various industry and scientific statistics throughout the prospectus, such as your various statements regarding the market opportunity in the chemical industry and various subsets of the chemical industry. Where such information is based upon management's belief, please indicate that this is the case and also provide an explanation for the basis of your belief. If this information is based upon other sources, such as Global Industry Analysts or Frost & Sullivan, as cited on page 85, please provide us with copies of these sources. Please also disclose in your filing the date of these sources, where such date has not been disclosed, and whether the information represents the most recently available data and, therefore, remains reliable. Finally, please tell us whether the sources are available to the public for no or nominal fee. If the reports are not publicly available or if you commissioned the report or any part thereof, please either file consents or explain to us why you are not required to do so under Rule 436 of Regulation C and Section 7 of the Securities Act. To expedite our review, please provide us with copies of each source, clearly marked to highlight the portion or section that contains this information and cross-reference it to the appropriate location in your filing.

Table of Contents

6. Please remove the sentence in the first paragraph under the table of contents that advises investors that information is accurate only as of the date of the prospectus. This statement may suggest to investors that you are not responsible for omissions of material facts necessary to make your statements not misleading at the time of sale or contract of sale.

Prospectus Summary, page 1

Summary, page 1

7. Please ensure that your summary is balanced. While we note that you include a summary of certain risk factors on page 5, we believe that you should also disclose at the outset that you are a development stage company, that you have not yet recorded any revenue

from the sales of any products, that you had net losses of 10.8 million for the six months ended June 30, 2011, and that you expect your losses to continue.

8. We note your reference here and throughout your prospectus to various development agreements, strategic relationships and technology partnerships. To the extent that any of the referenced agreements or relationships are pursuant to non-binding agreements, such as letters of intent, please clearly identify them as such.

9. We note your disclosure in the first paragraph, and elsewhere throughout your prospectus, that you currently sell your first product to customers in a variety of chemical markets. However, we note your disclosure on page 14 that you have only sold samples that are incidental to your research and development efforts. Further, we note that you have not yet recorded revenue from such sales, and the disclosure on page 63 suggests that you have only generated $123,000 from such sales. Please revise your disclosure here and throughout your prospectus where you discuss such sales to clarify the exact scope of such sales, including that such sales were only samples, to quantify the dollar value of such sales, and to disclose that you have not yet recorded revenue from such sales. Please also specify whether such sales were one-time sales, or whether you have a supply agreement with such customers.

10. We note your statement that you have supply agreements for the sale of over 84,000 metric tons of bio-succinic acid and its derivatives. However, your disclosure on page 94 suggests that this supply agreement is part of a memorandum of understanding with Mitsui, Mitsubishi Chemical and PTT-MCC and memorializes only an intent to enter into an exclusive supply agreement and an intent to purchase the bio-succinic acid. Please revise your disclosure here, and elsewhere as appropriate, to clearly state whether the supply agreements referenced are in definitive form and obligate the parties to purchase the referenced amount of bio-succinic acid. If the agreements are not in definitive form, please clearly disclose this fact.

11. We note your statement that you expect to be able to produce bio-succinic acid that is cost-competitive based on an assumed corn price of $6.50 per barrel. Please discuss the historical and current prices of corn, including the likelihood that you will be able to secure corn at a price of $6.50 per barrel. We note in particular that you do not have long-term supply agreements in place for your planned facility in Ontario.

Our Solution, page 2

12. We note your statement that you have “reliably delivered high quality, cost competitive bio-succinic acid that meets the specifications of large chemical companies.” Please revise your disclosure to clarify what you mean by “reliably delivered,” including whether this is referencing your sales of samples. Please also provide context for the statement “large chemical companies” and put your stage and level of development in perspective when discussing your activities to date.

13. We note your reference here and elsewhere in the prospectus that your process requires less feedstock than other sugar-based processes for biochemicals other than succinic-acid. Please supplementally provide us with support for this statement.

Our Strengths, page 3

14. Because you are a development stage company, please provide a basis for your assertion of "industry leadership.

We cannot assure you that we will be able to meet the product specification requirements of our customers..., page 20

15. Please revise to indicate that the sales to customers were incidental to and in connection with your product and market development efforts.

We are currently dependent on a single manufacturing facility . . ., page 17
A significant decline in the price of petroleum and petroleum-based succinic acid . . ., page 20

16. We note your statement on page one, and elsewhere in your prospectus, that you believe that you can produce cost-competitive bio-succinic acid based on the estimated production costs at you planned facility in Ontario. However, we further note that your bio-succinic acid is currently manufactured only at your facility in France, and that production costs at this facility are substantially higher. Given your current dependence on this facility, please discuss the production cost at the facility in France. Please also disclose whether you expect to continue producing succinic acid at the facility in France after the facility in Ontario is operative. Further, we note your disclosure that if the price of oil falls below $35 per barrel, you may be unable to manufacture cost-competitive bio-succinic acid. Given that this is based on the production costs at your Ontario facility, please disclose the price of oil that is required for you to produce cost-competitive succinic acid at your facility in France.

We may not be successful in expanding our bio-succinic acid production capacity . . ., page 18

17. This risk factor addresses multiple, distinct risks, including the risks that you may not be able to operate at increased capacity, you may not be able to produce sufficient amounts of bio-succinic acid to deliver the amount contemplated by your supply agreements, you may not be able to adapt your process for new organisms that pose less contamination risk than *E. coli*, you may not be able to run your fermentation processes and second generation purification process at a single manufacturing facility, and that you may encounter difficulties when you expand the range of feedstocks you use. Please address each of these risks in a separate risk factor.

18. We note your disclosure that you have experienced certain start-up equipment and process design issues in operating you facility in France. Please identify the specific

equipment and design issues in a separate risk factor, including whether such issues have been addressed. Please also discuss any material risk that such issues may prevent you from operating this facility, or any future facility, at increased capacity.

We may incur significant costs complying with environmental laws . . . , page 23

19. To the extent known, please disclose the potential "significant costs" that may be required to secure approval of the manufacture of your future product that is not currently included on the DSL. Please also disclose the material amounts already expended to secure approval for its manufacture.

Certain key inventions in-licensed by us were made with funding received from U.S. government agencies . . . , page 32

20. We note your statement that if you do not meet certain guidelines set forth under the Bayh-Dole Act of 1980, you may lose your exclusive right to "these inventions," which could be detrimental to your business. Please disclose which specific inventions you are referring to, including how such inventions are used in your production of bio-succinic acid or for any of your future products. Further, please disclose whether you believe you currently meet the specified guidelines set forth under the Bayh-Dole Act of 1980. Please also clearly specify the specific material adverse effects on your business that may result from the failure to meet such guidelines.

Capitalization, page 43

21. On November 4, 2011, you completed a private placement for gross proceeds of $20 million pursuant to which 20,061 shares of common stock were issued. It appears that this private placement had a significant impact on your capitalization. In this regard, please include the impact of this private placement in your capitalization table. This can be done by presenting the impact of the private placement in a second column labeled as adjusted. The third final column could then reflect both the private placement and this offering in a column labeled as further adjusted. Similarly revise your pro forma presentations elsewhere in the filing as well. Please also clearly show in the notes to the capitalization table how you arrived at each adjustment amount with a discussion of any significant assumptions and estimates used to arrive at the adjustment amounts.

Unaudited Pro Forma Financial Information, page 49

22. Rather than cross-referencing to other parts of the filing, please clearly show in the notes to the pro forma financial information how you arrived at each pro forma adjustment amount, including the adjustments you made to weighted average shares of common stock outstanding. Please also disclose any significant assumptions and estimates used to arrive at the adjustment amounts.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 55

Overview, page 50

23. Please apply the comments above from the Prospectus Summary section to the extent they apply to your Overview.

24. We note that you will receive $35.0 million in loans and government grants toward the construction of your Sarnia facility, "subject to meeting certain milestones." Please also disclose the milestones that you must meet to receive such funding. Please disclose any other milestones or conditions that you must meet to receive funding for the Sarnia facility, whether from Mitsui, the government, or any other party.

Comparison of Six Months Ended June 30, 2010 and Six Months Ended June 30, 2011, page 62

Comparison of the Year Ended June 30, 2010 to the Six Months Ended December 31, 2010, page 64

Comparison of the 258 Day Period Ended June 30, 2009 to the Year Ended June 30, 2010, page 66

Research and development expenses, net

25. Please revise your disclosure so that an investor may understand the specific factors that resulted in the fluctuations in research and development expenses, apart from the consolidation of Bioamber S.A.S, into your financial statements. As an example, in your discussion of the six months ended June 30, 2010 compared to the six months ended June 30, 2011 please quantify the amount of the increase that is due to the consolidation of Bioamber S.A.S, the amount that is due to the development of your new bio-BDO and bio-adipic acid platforms, and the amount that is due to patent applications and maintenance. Please also explain the business reasons for the increase in production costs from the six months ended June 30, 2010 to the six months ended June 30, 2011.

26. Please clarify whether you sold any products in any period other than June 30, 2011, and if so, please quantify the amount of such sales by which your research and development expenses were offset for such period.

27. To the extent material, please quantify the amount of the royalty expenses that were paid in each period. We note in particular your disclosure on page 67 that certain up-front payments and minimum annual royalties amounted to $458,000. Please disclose the amount of similar payments made in the other periods used in your period-to-period comparisons so an investor may understand the significance of such payments.

Liquidity and Capital Resources, page 68

28. Please disclose whether or not you are dependent upon the offering to meet your liquidity needs for the next 12 months.

Critical Accounting Policies and Estimates

Valuation of In Process Research and Development, page 72

29. Please expand your disclosures to address how you evaluate the intangible assets recorded for in process research and development for impairment pursuant to ASC 350-30-35-18. Please ensure that your disclosures include the following:

    - The frequency of your evaluation;
    - How you evaluate for impairment, including how you determine the unit of measure to use in the evaluation pursuant to ASC 350-30-35-21 through 28; and
    - How you determine if the assets are impaired and determine the impairment amount.

    If you have determined that the estimated fair value substantially exceeds the carrying value for these assets, please disclose this determination. Please refer to Item 303 of Regulation S-K and Sections 216 and 501.14 of the Financial Reporting Codification for guidance.

Business, page 76

30. Please apply the comments above from the Prospectus Summary section to the extent they apply.

31. Please provide the information required by Item 101(c)(1)(vii) of Regulation S-K.

Our Products, page 83

32. We note your references throughout this section to your collaboration with certain companies or third-parties to evaluate the use of bio-succinic acid in certain products and applications. For example, on page 85 you state that you are "working with certain companies" to evaluate bio-succinic acid esters in personal care applications and to develop and commercialize bio-succinic esters for use as cosmetic ingredients. Please revise your disclosure to clarify the extent of your relationship with these companies and third-parties, including whether you have entered into any agreements with such companies and give consideration to filing any such agreements as exhibits to this registration statement.

33. We note your disclosure on page 84 that your "bio-based specialty chemicals are used in multiple end-markets . . ." Given that your particular bio-based specialty chemicals have not actually been used in such end-markets, please revise your disclosure to clarify that your believe your bio-based specialty chemicals could potentially be used in such markets.

34. Please clearly state the difference between "Pre-Commercialization" and "In Development."

Our Technology, page 88

35. We note the description of the advantages of your process that appear on page 89. Please clarify how your process specifically compares to other processes, including why the advantages listed here are superior to other production processes engaged in by others.

Our Manufacturing Operations, page 90

36. We note your statement that you expect your facility in France to be operating at full capacity by the second quarter of 2012. However, we note your disclosure on page 95 that during the renewal terms of your agreement with ARD for use of this facility, you are only guaranteed 60% of the facility's capacity. Please disclose specifically when the renewal period for the agreement begins, and please also address how you intend to operate at full capacity if you are only guaranteed 60% capacity.

Our Distribution Plan, page 93

37. We note your statement that you have entered into agreements with "numerous third parties" to distribute bio-succinic acid and to develop new products and access new markets. Please quantify the number of third parties with which you have entered into such agreements, and in particular specify the number that are definitive supply agreements. Please file as exhibits to the registration statement any of these agreements that are required to be filed by Item 601(b)(10) of Regulation S-K.

Our Strategic Relationships, page 93

38. Please revise your disclosure to provide a materially complete description of each of the relationships discussed in this section. For example, please disclose, to the extent material, information regarding renewal fees, licensing fees, minimum annual royalty payments, the potential range of royalty payments, milestone payments, including the total milestone payments made to date and aggregate potential milestones, and ownership of results. Further, please clarify which agreements are definitive, and which are non-binding. Please also disclose the termination date of the agreements, and to the extent that any of the non-binding letters of intent or memorandums of understanding will

terminate if no action is taken after a specified period of time, please disclose the termination date. These are just examples.

39. Please file each of the agreements referenced in this section as exhibits to the registration statement. See Item 601(b)(10) of Regulation S-K.

40. We note that you list the U.S. Department of Energy as one of your technology partners. However, your disclosure under this heading states that your license agreement is with UT-Battelle, LLC and UChicago Argonne, LLC, and these entities manage laboratories under contracts with the DOE. Please advise how the DOE is a technology partner.

Intellectual Property, page 97

41. Please provide the duration and effect of all specific patents, trademarks and licenses held, to the extent material. We note that you have only provided a range of expiration dates for three of your U.S. patents. See Item 101(c)(1)(iv) of Regulation S-K.

Facilities, page 100

42. Please file the lease agreements for the facilities referenced in this section, including any amendments or renewals of such leases. See Item 601(b)(10)(ii)(D) of Regulation S-K.

Management, page 107

43. We note your disclosure that certain of your directors were elected pursuant to the board composition provisions of your stockholders agreement. Please identify each of the directors that was elected pursuant to this agreement, and briefly describe the agreement. See Item 401(a) of Regulation S-K.

Executive and Director Compensation, page 110

Compensation Discussion and Analysis, page 110

General

44. We note that your compensation discussion and analysis reports compensation information for various periods, such as cash bonuses paid for half of the fiscal year ended June 30, 2010 and half of the bonus paid for the 12-month period ended June 30, 2011, on page 114. Further, we note that in your summary compensation table, grants of plan-based awards table and outstanding equity awards table you have annualized the compensation so that the information reported is for the 12-month period ended December 31, 2010. Please revise to furnish disclosure for your most recently completed fiscal year, July 1, 2009 to June 30, 2010, and for the stub period from July 1, 2010 to December 31, 2010 throughout your compensation discussion and analysis. In the event

that you file your amendment after December 31, 2011, please update this entire section to reflect compensation paid for the fiscal year ended December 31, 2011. See Question 217.05 of Compliance & Disclosure Interpretation for Regulation S-K.

Cash Bonus, page 113

45. We note your statement that no particular weight was given to any of the corporate objectives, or between individual and corporate objectives, in determining the cash bonus. However, we note that you did establish various targets for each of your named executive officers, as disclosed on page 114. Please revise your disclosure to explain how such targets were selected. Further, it is unclear how you calculated the amount of the cash bonuses. For example, based on Mr. Huc's base salary for fiscal year 2010, with a target of 50% of the base salary, and achievement of 95% of individual and corporate goals, it appears that he would have been paid more than 138,020. Please clarify how the cash bonuses were calculated.

New Employment Agreements, page 120

46. Please file the employment agreements listed in this section as exhibits to the registration statement. See Item 601(b)(10)(iii) of Regulation S-K.

2011 Stock Option and Incentive Plan, page 126

Performance Bonus Plan, page 127

47. Please file these compensatory plans as exhibits to the registration statement. See Item 601(b)(10)(iii) of Regulation S-K.

Director Compensation, page 128

48. Please file the agreements with Mr. Briner, Mr. Haller and Mr. Land as exhibits to the registration statement. See Item 601(b)(10)(ii)(A) of Regulation S-K.

Certain Relationships and Related Person Transactions, page 135

49. Please file your Exclusive Distributorship Agreement with Mitsui & Co., Ltd., the Transitional Work Plan Agreement and Toll Manufacturing Agreement with ARD, and the Asset Purchase Agreement and License Agreement between Bioamber S.A.S. and BioAmber International, S.à.r.l. as exhibits to the registration statement.

Financial Statements

General

50. Please update your financial statements and corresponding financial information included to comply with Rule 3-12 of Regulation S-X.

51. If a stock split will occur immediately prior to this offering, we remind you to revise your financial statements and your disclosures throughout the filing to give retroactive effect to the expected stock split. Doing this in the next amendment will save us substantial review time in future amendments. If your auditors believe that only a "draft" report can be presented, due to a pending future event such as the stock split, they can include in the filing a signed and dated preface to their "draft" report stating the reason for the "draft" report and that they expect to be in a position to issue the report in the form presented prior to effectiveness. A signed, dated, and unrestricted auditor's report must be included in the filing prior to effectiveness. See Rule 2-02 of Regulation S-X.

Notes to the Financial Statements

General

52. Please provide us with an analysis of all equity issuances since October 1, 2010 as well as any planned equity issuances. For each transaction,

    - identify the parties, including any related parties;
    - the purpose of the issuance;
    - how you accounted or will account for the issuance;
    - the nature of any consideration;
    - the fair value and your basis for determining the fair value; and
        - Indicate whether the fair value was contemporaneous or retrospective.
        - To the extent applicable, reconcile the fair values you used for equity transactions to the fair value indicated by the anticipated IPO price.
    - For equity transactions in which your Board of Directors estimated the fair value, please provide us with a detailed explanation of the significant factors, assumptions, and methodologies used in determining fair value.

We will not be able to complete our evaluation of your response until the IPO range has been disclosed.

General

53. Please include a table to show the effects of changes in your ownership interest in subsidiaries on the equity attributable to you. Please refer to ASC 810-10-50-1A(d) and ASC 810-10-55-4M for guidance.

Revenue Recognition, page F-16

54. On page 57, you disclose that you have not recorded any revenue from the sale of your products. As a development stage company, you have recorded all product sales to date as an offset to research and development expenses and will continue to do so until these products are deemed ready for commercial sale. ASC 915-605-25-1 states that GAAP which applies to established operating entities shall govern the recognition of revenue by a development stage company. In this regard, please help us better understand how you determined that it was appropriate to net the proceeds from the sale of products against research and development expenses rather than reflect as revenues.

Research and Development Tax Credits, page F-19

55. On page F-52 you discuss the differences between US GAAP and French GAAP in regards to accounting for research and development tax credits. Your accounting policy disclosures indicate that you are using French GAAP in recording these tax credits in your consolidated financial statements prepared in accordance with US GAAP. Please advise or revise your disclosures as necessary to clearly disclose your accounting policy and how it complies with US GAAP.

Note 4. Acquisition of Bioamber S.A.S., page F-22

56. On page F-50 in the historical financial statements of Bioamber S.A.S., it appears that $5 million euros was owed to Agro-industrie Recherches et Développements, S.A. at September 30, 2010. Please clarify whether the issuance of 31,644 shares was for the settlement of this liability. If so, please tell us how you determined it should be accounted for as part of the consideration transferred pursuant to ASC 805-30-30-7. Please also disclose why ARD gave you $1 million as part of your acquisition of the remaining 50% of Bioamber S.A.S.

57. Pursuant to ASC 805-10-25-10, you remeasured the previously held equity interest in Bioamber S.A.S. at the acquisition-date fair value of $6.3 million and correspondingly recorded a gain of $6.2 million. Please show us how you arrived at the gain amount.

Unaudited Pro Forma Financial Information, page F-54

58. Given that you appear to already provide this same pro forma financial information beginning on page 49, please remove this second set of duplicative pro forma financial information or explain why both are included.

Recent Sales of Unregistered Securities, page II-2

59. Please revise the disclosure in this section to disclose, on a transaction-by-transaction basis, all securities sold by you within the past three years which were not registered under the Securities Act. For example, we note that you have not included your issuance of 31,644 shares of common stock to ARD on September 30, 2010, as disclosed on page 49. For each transaction, please include all of the information required by Item 701 of Regulation S-K, including, but not limited to, identifying the person(s) to whom the securities were sold.

60. We note your disclosure regarding the November 23, 2010 private placement of the unsecured convertible promissory notes. Please advise what it means that upon conversion "of a note" you will issue a security purchase warrant allowing the noteholder to purchase 25% of the number of securities "to be received by the noteholder."

Exhibits

61. Please file all required exhibits, such as the underwriting agreement and the legal opinion, in a timely manner so that we may have time to review them before you request that your registration statement becomes effective.

Notwithstanding our comments, in the event 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;

- 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; and

- 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 respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Nudrat Salik, Staff Accountant, at 202-551-3692, or Rufus Decker, Accounting Branch Chief, at 202-551-3769 if you have questions regarding comments on the financial statements and related matters. Please contact Erin Jaskot, Staff Attorney, at 202-551-3442, or Craig Slivka, Special Counsel, at 202-551-3729 with any other questions.

Sincerely,

/s/ Craig E. Slivka, for

Pamela A. Long
Assistant Director

cc: Michael Minahan, Esq. (*via E-mail*)
Goodwin Procter LLP