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

DIVISION OF
CORPORATION FINANCE

September 13, 2013

Via E-mail
Mr. William G. Kachioff
Chief Financial Officer
Biocept, Inc.
5810 Nancy Ridge Drive
San Diego, CA 92121

Re: Biocept, Inc.
Draft Registration Statement on Form S-1
Submitted August 19, 2013
CIK No. 0001044378

Dear Mr. Kachioff:

We have reviewed your draft 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 providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. 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 the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

General

1. Please supplementally provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications. Similarly, please supplementally provide us with any research reports about you that are published or distributed in reliance upon Section 2(a)(3) of the Securities Act of 1933 added by Section 105(a) of the Jumpstart Our Business Startups Act by any broker or dealer that is participating or will participate in your offering.

2. Please include all information that is not subject to Rule 430A, including the number of shares and a bona fide estimate of the range of the maximum offering price for the shares.

As the price range you select will affect disclosure in several sections of the filing, we will need sufficient time to process your amendments once a price range is included and the material information now appearing blank throughout the document has been provided. Please understand that the effect of the price range on disclosure throughout the document may cause us to raise issues on areas not previously commented on.

3. Please file all exhibits, including your legal opinion, as soon as practicable. We must review these documents before the registration statement is declared effective, and we may have comments on these documents once they are filed.

4. Please provide us with any gatefold information such as pictures, graphics or artwork that will be used in the prospectus. For guidance, see Securities Act Forms, Compliance and Disclosure Interpretation, Question 101.02.

Summary, page 1

5. From your disclosure, it appears that the only test you currently offer is your OncoCEE-BR breast cancer test. However, you state on page 4 that your "tests enable detailed analysis…" Your risk factor disclosure also suggests that you offer more than one cancer diagnostic test. For example, the first risk factor on page 13 indicates that you currently derive substantially all of your revenues from your cancer diagnostics tests. We also note your disclosure in the second risk factor on page 13 that you have engaged in limited sales and marketing activities for the cancer diagnostic tests you offer. Please revise your summary, risk factors and where appropriate to reflect, if true, that you currently offer only one cancer diagnostic test.

6. Please revise the introductory paragraphs to clearly indicate the number of tests you currently sell and the number and timeframes to commercialization for other tests that are close to being launched. It appears that you currently have one test, for breast cancer, which is commercially available; you expect to have another, for lung cancer, to be sold beginning in the second half of 2014; and you expect to start selling tests for prostate, melanoma and other cancers at a rate of 1-2 per year for the next 3 years. Please revise accordingly.

7. In this regard, please revise the introductory paragraphs and where appropriate to address the extent to which your historical revenues have been generated other than by your breast cancer or another commercially available test. We note the statement on your website that you "offer services to other laboratory testing providers, academic institutions, research organizations, biopharmaceutical companies, and clinical trial support."

8. Consider deleting or simplifying paragraphs of detailed, industry jargon to make it easier for the reader to understand what you currently (and expect to) do to generate revenues. See, for example, the second and third full paragraphs on page 6.

9. Please revise to clarify the bases for statements that your test is more personalized compared to other available tests, provides more information or a more complete profile, and so forth. Similarly revise pages 67 and 68.

10. Please revise the list of risks on page 7 to provide quantitative and other clarification to clearly and concisely describe the risk. For example, please quantify your accumulated deficit instead of referring to a "significant" cumulative net loss, state that your current cash resources are insufficient to fund your operations without this offering instead of stating that you will need to raise additional capital, and state that you hired your CEO in August 2013.

11. We note your bulleted list of shares that are excluded from the shares to be outstanding after the offering on page 9 does not reconcile to similar lists within your capitalization and dilution disclosures on pages 42 and 44, respectively. Please update the disclosures as appropriate.

Risk Factors, page 12

12. We note the first risk factor on page 12 regarding your status as an early stage company and the last risk factor on page 16 regarding your management transition. Consider further clarifying your CEO's limited experience as an executive officer and the relatively short time your CEO and CFO have been in those roles.

13. It is unclear why you do not provide risk factor disclosure regarding your reliance on significant technology or licenses owned at least in part by others, such as Aegea. Please revise or advise.

14. We note your disclosure on page 46 that over 75% of your revenue in 2012 was generated through your arrangement with Clarient Diagnostics Services, Inc. If the company expects that a significant portion of its revenues will continue to be generated through the arrangement with Clarient, please add risk factor disclosure to this effect.

Because of certain Medicare billing rules, we may not receive reimbursement …, page 25

15. We note your disclosure that "[a]ll of the molecular diagnostic tests … received such positive coverage determinations" and that you "received a negative coverage determination … for [your] CTC enumeration tests." Please revise to discuss the status of Medicare coverage for each of the current and planned tests included in the tabular disclosure on page 70. For example only, please discuss whether the current and planned

tests would be subject to positive or negative Medicare coverage determinations, whether any such coverage determinations are national or local coverage determinations, the limitations, if any, on the coverage implied by any positive coverage determination, such as geographic or patient population limitations, and whether you have submitted coverage determination requests to Palmetto GBA or Noridian for any of the current or planned tests. Similarly revise the Coverage and Reimbursement for Our Tests section on page 84.

16. Please revise the subheading and text of the risk factor to clarify why it is important that you receive a positive coverage determination.

17. We note your disclosure that as of September 1, 2013, Noridian will be the Medicare Administrative Contractor for California. Please disclose whether you have received any indication from Noridian regarding coverage for your tests.

State-imposed genetic testing and privacy laws will affect our operations …, page 30

18. Please disclose if you are currently subject to any state genetic testing laws. If so, please briefly describe such laws and the impact such laws have on your operations and revise the disclosure beginning on page 87 as appropriate.

Use of Proceeds, page 41

19. We note your disclosure here and in the first risk factor on page 38 that you "will have broad discretion in the application of the net proceeds" and that you "may apply the net proceeds of this offering differently than [you] currently anticipate." You may reserve the right to change the use of proceeds, provided that such reservation is due to certain contingencies that are discussed specifically and the alternatives to such use in that event are specified. See Instruction 7 to Item 504 of Regulation S-K. Please revise your disclosure to specifically discuss the contingencies that would cause you to apply the net proceeds of this offering differently than you currently anticipate and specify the alternative uses of the net proceeds in that event.

20. We note your disclosure on page 97 that under the terms of the salary reduction and contingent payment agreements, you must satisfy the deferred salary amounts from the proceeds of this offering. If so, please disclose in this section that net proceeds are intended to be used for this purpose and disclose the approximate amount intended to be used for such purpose.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 47

21. Please revise to further clarify the reasons underlying material changes in your results of operations. For example, where you state that changes were caused "primarily" by a reduction in headcount or the volume of commercial tests, it is unclear to what extent prices, changes in non-headcount expenses or other factors materially affected your results. Provide quantitative clarification where multiple factors materially affected your results of operations.

22. Please revise to address the extent to which your average price per test changed from period to period.

Revenues, page 47

23. Please expand this section to clarify that after May 2013, you are now responsible for billing third-party payors and also explain how that change is expected to affect your recognized revenue and estimated collectible accounts receivable.

Results of Operations, page 51

Cost of Revenues, page 51

24. We note your cost of revenues increased 145.1% for the six months ended June 30, 2012 compared to the six months ended June 30, 2013. Please quantify and disclose the number of tests ordered for each period presented. Alternatively, explain to us why you believe such information should not be disclosed.

Description of Business, page 58

25. Please revise to quantify your average price per test and discuss the degree to which the amount you receive depends on the payor or other factors, including those addressed in "Coverage and Reimbursement for Our Tests" on page 84. We also note the statement on page 83 that "reimbursement rates can vary…"

26. Please revise the table on page 70 to include columns addressing the status of the tests and, where they are not commercially available, the approximate amount of time to reach commercialization.

27. Please revise to reconcile the discussion of "competitive advantages" on page 67 with your "Competition" disclosure on page 78.

Test Development Process, page 73

28. Please clarify how clinical utility studies fit into your test development process. Please also clarify where the OncoCEE-BR test, the OncoCEE-LU test and any other tests you anticipate launching in fiscal year 2013 or fiscal year 2014 are in your test development process.

29. Please revise the reference to several components from sole suppliers on page 80 to identify the components and suppliers. See Item 101(h)(4)(v) of Regulation S-K.

Third-Party Payor Reimbursement, page 83

30. We note statements regarding Medicare reimbursement. However, it is unclear if these statements are made generically about the industry or are meant to indicate that Medicare beneficiaries, you or other parties are reimbursed specifically for your tests. We also note the statements on page 84 and elsewhere that you received a negative coverage determination. Please revise to clarify the extent of your Medicare coverage. In this regard, we note the following statements on your website. "Biocept is a Medicare participating provider. In compliance with federal statutes, Biocept will bill Medicare directly except inpatient hospital clients. Additionally, Medicare and other patients will be responsible for any deductible or co-pay outlined by their insurance plan."

Legislative and Regulatory Changes Impacting Clinical Laboratory Tests, page 85

31. We note your disclosure on page 86 that Palmetto GBA recently issued a Local Coverage Decision under which Palmetto "will not cover any molecular diagnostic tests, including [your] tests, unless the test is expressly included in a National Coverage Determination issued by CMS or a Local Coverage Determination or coverage article issued by Palmetto." Please discuss whether your molecular diagnostic tests have been expressly included in a National Coverage Determination issued by CMS or a Local Coverage Determination or coverage article issued by Palmetto or Noridian and, if so, specify which tests.

Other States' Laboratory Testing, page 89

32. We note the statement that, other than "New York, Florida, and Rhode Island, [you] have obtained licenses" in states that require licensure of out-of-state laboratories. With a view to clarifying disclosure, advise us why your website page "Licenses and Certificates" lists only California, Florida, Maryland, Pennsylvania and Rhode Island.

Properties, page 89

33. Please revise your disclosure in this section to discuss the warrants issued to your landlord in connection with the September 2012 lease amendment. Please also discuss any amounts owed for rent in arrears.

Management, page 90

34. Please disclose the name and principal business of any corporation or organization in which Mr. Gerhardt was employed as a certified public accountant in the past five years. Please also disclose the principal occupation and employment of Mr. Arnold from October 2009 until May 2010 and the name and principal business of any corporation or organization in which he was employed during that time. Refer to Item 401(e)(1) of Regulation S-K.

35. Please revise to indicate the field in which Mr. Nall received his B.S. degree.

Summary Compensation Table, page 95

36. Please revise footnote 1 to refer to the narrative disclosure where the material terms of the Salary Reduction and Contingent Payment Agreement are discussed. Refer to Instruction 2 to Items 402(n)(2)(iii) and (iv) of Regulation S-K.

Outstanding Equity Awards, page 97

37. Please revise the market price of units that are unvested column to disclose the aggregate market value of the number of unvested securities underlying the restricted stock units. Refer to Item 402(p)(2)(viii).

Employee Stock Plans, page 101

38. Please provide the information required by Item 201(d) of Regulation S-K.

Certain Relationships and Related Party Transactions, page 106

Claire K. T. Reiss, page 107

39. For each transaction, please indicate Mrs. Reiss' position(s) or relationship(s) with, or ownership in, the affiliated entity that is a party to or has an interest in each transaction. Refer to Item 404(a)(2) of Regulation S-K.

40. For the note and warrant purchase agreement reflecting certain prior and possible future borrowings totaling up to $7.0 million, please disclose the aggregate amount of principal

and accrued interest outstanding for amounts borrowed from Mrs. Reiss or entities affiliated with her as of the latest practicable date. Similarly revise the disclosure regarding amounts borrowed from SMAC, Hale BioPharma Ventures LLC, Ms. Wilson and Mr. Gerhardt.

41. For the July 2013 amendment to a $1.4 million promissory note, please disclose the aggregate amount of principal and accrued interest outstanding as of the latest practicable date.

Edward Neff, page 108

42. For the each financing arrangement with SMAC, please disclose the dollar value of the amount involved, the largest aggregate amount of principal outstanding during the period for which disclosure is provided, the amount thereof outstanding as of the latest practicable date, the amount of principal paid during the periods for which disclosure is provided, the amount of interest paid during the period for which disclosure is provided and the rate or amount of interest payable pursuant to the financing arrangements. Refer to Item 404(a)(5) of Regulation S-K.

Index to Financial Statements, page F-1

43. The index page includes a reference to a pro forma statement of shareholders' deficiency as of June 30, 2013. Please advise where this pro forma statement is presented.

Notes to Financial Statements, page F-8

Note 3. Summary of Significant Accounting Policies, page F-9

Unaudited Pro Forma Information, page F-9

44. Since a registrant cannot control whether a registration statement will be declared effective by the Commission, please advise how you determined that the sale of the IPO shares is a factually supportable event or revise to delete the effect of the offering from the pro forma presentation here, from Summary Financial Data on page 11, and from Selected Historical Financial Data on page 45.

45. We note your reference on page 9 to a not-yet quantified reverse stock split that will be effected before the completion of this offering. We also note that this reverse stock split is not included in the list of pro forma equity transactions that will be disclosed in the registration statement. Please note that if the reverse stock split will not occur at or prior to effectiveness, it cannot be presented retrospectively in the historical financial statements. Please tell us why the reverse stock split was omitted from the pro forma

presentation and how you plan to disclose the split in the registration statement or revise the pro forma section accordingly.

46. Unless each item described in the Note will be disclosed separately in the pro forma balance sheet, revise the Note to present the dollar amount of each item.

Note 5. Notes Payable, page F-15

47. We note you have included 42,245,834 shares of preferred stock in the statement of shareholder's deficit for the period ended June 30, 2013 as "Shares to be issued for conversion of notes payable and accrued interest." Please provide the following:

- Explain to us why you have presented these shares as "to be issued" equity as of June 30, 2013 and provide reference to the authoritative guidance which you used to base your presentation.
- Tell us your accounting treatment and journal entries recorded for the conversion of the notes payable to Series A preferred stock, including your consideration of ASC 470-20 and ASC 470-60.
- Expand your disclosures here and in Note 8 to clarify the meaning of the "to-be issued shares" and the reasons for this classification.

Note 16. Subsequent Events (Unaudited), page F-30

48. Please disclose the date through which you have evaluated the subsequent events for the annual and interim financial statements presented, and whether that date is either the date the financial statements were issued or available to be issued. Refer to ASC 855-10-50-1.

Part II Information Not Required in Prospectus

Item 17. Undertakings, page II-7

49. Please provide all applicable undertakings. See Item 512(a)(5)(ii) and 512(f) of Regulation S-K.

If you intend to respond to these comments with an amended draft registration statement, please submit it and any associated correspondence in accordance with the guidance we provide in the Division's October 11, 2012 announcement on the SEC website at http://www.sec.gov/divisions/corpfin/cfannouncements/drsfilingprocedures101512.htm.

Please keep in mind that we may publicly post filing review correspondence in accordance with our December 1, 2011 policy (http://www.sec.gov/divisions/corpfin/cfannouncements/edgarcorrespondence.htm). If you intend to use Rule 83 (17 CFR 200.83) to request confidential treatment of information in the

correspondence you submit on EDGAR, please properly mark that information in each of your confidential submissions to us so we do not repeat or refer to that information in our comment letters to you.

You may contact Myra Moosariparambil at (202) 551-3796 or Tia Jenkins at (202) 551-3871 if you have questions regarding comments on the financial statements and related matters. Please contact Tiffany Piland at (202) 551-3589 or James Lopez at (202) 551-3536 with any other questions.

Sincerely,

/s/ James Lopez (for)

John Reynolds
Assistant Director

cc: Michael Brown, Esq.