Mail Stop 6010

July 14, 2006

Lloyd H. Malchow
President and Chief Executive Officer
SenoRx, Inc.
11 Columbia, Suite A
Aliso Viejo, California 92656

Re: SenoRx, Inc.
Amendment No. 1 to Registration Statement on Form S-1
Filed June 26, 2006
File No. 333-134466

Dear Mr. Malchow:

We have reviewed your registration statement and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Our Business, page 1

1. Balance the disclosure in the last paragraph under this caption to also disclose net losses for the periods for which you report revenues.

Recent Developments, page 3

2. Disclose in the filing whether the FDA has confirmed that you do not need further approval for this modification to your product. Also disclose the basis for your belief that the modification will not affect the operation of your device.

The Offering, page 5

3. Revise your disclosure to indicate when the reverse split is effective.

4. Please refer to prior comments 6 and 7. We note that when you include pricing information, you will revise the number of shares of common stock to be

outstanding after the offering to include the number of shares issuable upon the automatic conversion of the May 2006 notes. As such, you will remove your reference in the last bullet point at the bottom of page 5 indicating that the this amount excludes those shares.

5. Please refer to prior comment 7. Please state, consistent with page F-28, that this amount is your pro forma number of shares issued and outstanding as of March 31, 2006.

6. Please reconcile the number of shares issuable (255,304) upon exercise of outstanding warrants at an exercise price of $6.86 per share on page 5 with the number of warrants outstanding as of December 31, 2005 on page F-22 of 893,572 at an exercise price of $1.96 per share.

Dilution, page 24

7. Please refer to prior comment 13. Please reconcile the total consideration of $47,945,362 received from existing stockholders with your financial statements. Please also tell us why the total consideration for the notes excludes the payment of $1.8 million of interest owing on the notes. Refer to prior comment 40.

8. Please refer to prior comment 14. Since you now reflect the notes within the table at the top of page 25, please tell us why you include a discussion of the possible conversion of the notes in the paragraph following the table and in the last bullet point after the table.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 28

9. Revise the first sentence under the caption "Overview" in response to previous comment 3.

Results of Operations, page 30

Three Months Ended March 31, 2006 Compares to Three Months Ended March 31, 2005, page 30

10. Please refer to prior comment 17. We note from the table on page F-34 that biopsy capital equipment product sales decreased 13%. This amount includes "consoles and other pieces (non-disposable) of the EnCor and SenoCor products." As such, this decrease appears to be net of an increase in sales of your EnCor related products. Please quantify the decrease in sales of SenoCor related capital equipment and disclose why these sales are declining. Please also quantify the

impact that the growth in the EnCor console installed base of customers had on your sales. Refer to Item 303(b)(2) of Regulation S-K and the instructions thereto, SAB Topic 13.B, Release 33-8350 and FRC 501.04.

11. Please reconcile the sum of the individually identified changes in net revenues of $1.2 million with the actual change thereof of $1.0 million.

Year ended December 31, 2005 compared to year ended December 31, 2004, page 31

12. Please refer to prior comment 20. The amount of the change in sales of disposable probes and consoles for EnCor equals the total change in these line items on page F-25. As such, it appears that there was no change in sales of your SenoCor disposables or equipment products between periods. We similarly note that the change in sales of disposable probes between the three months ended March 31, 2005 and 2006 for EnCor equals the total change in that line item on page F-34 indicating that SenoCor disposable sales continue to be unchanged. The prior disclosure included in your S-1 filed May 25, 2006 disclosed that SenoCor sales decreased $400,000 between 2004 and 2005. Please quantify and discuss the reasons for significant changes, if any, in your sales of the SenoCor products.

13. Please reconcile your statement regarding the loss of revenues in Gamma Finder sales due to delays in production by a supplier (page 31) with your disclosure on page F-8 that there has been no loss of revenues due to your single-source supplier relationships. Please also reconcile with your response to prior comment 52 on page 22 of your response letter that sales of EnCor were delayed due to shortages of key components.

14. Please refer to your response to prior comment 52. We note the following two bullet points from your response:

- During the second and third quarters of fiscal 2005, the Company implemented design modifications and delayed the full commercial launch of its flagship EnCor product due to delays in implementation of certain product enhancements and shortages of key console components.

- In September 2005, knowledge of the FDA warning letter caused concern with customers, future investors or potential acquirers of the Company. Sales volumes continued at or below the March 2005 levels, and the cost of the Suros litigation defense negatively impacted projected cash needs.

Please revise MD&A to provide a similar discussion of the reasons for changes in your revenues. Please refer to Refer to Item 303(b)(2) of Regulation S-K and the instructions thereto, SAB Topic 13.B and Release 33-8350.

Year ended December 31, 2004 compared to year ended December 31, 2003, page 32

15. Please refer to prior comment 21. Please respond to the following comments:

- You previously disclosed that there was a $1.5 million increase in sales due to the limited launch of your EnCor system in the fourth quarter of 2004. The current disclosure includes no discussion of the impact of these sales. Please disclose the amount of revenue included in 2004 due to the launch of EnCor and, if significantly different than your prior disclosure, please tell us the reasons for the change. Also consider your disclosure on page 31 that there was a $5.2 million increase in EnCor sales in 2005.

- You previously disclosed that tissue marker sales increased $1.3 million due in part to the launch of Gel Mark Ultra and Gel Mark UltraCor. Your current disclosure states that these sales only increased $0.5 million. Please disclose the amount of revenue included in 2004 due to the launch of those two products and, if significantly different than your prior disclosure, please tell us the reasons for the change.

- You previously disclosed that Gamma Finder sales increased $1.3 million in conjunction with the first full year of sales. You currently disclose that Gamma Finder sales decreased $0.2 million. With a view towards disclosure, please tell us the reasons for the change in the amount of revenues related to this product.

Liquidity and Capital Resources, page 33

16. Please refer to prior comment 22. Please confirm that the cumulative gross profit of $25.0 million from the sale of your products since inception in January 1998 (page 33) includes the cumulative gross profit since 2001 of $27.5 million derived from page 26. That is, it appears that you had negative gross profit in 1998 – 2000 of approximately $2.5 million.

17. We note that you expect to generate cash from the sale of your product offerings even though you will continue to use cash in your operating activities. Please tell us how you calculate the amount of cash generated from the sale of product offerings for each period and reconcile this amount to the amount of cash used in operating activities. Discuss whether this measure is a non-GAAP measure as

defined in Item 10(e) of Regulation S-K. Tell us why it is appropriate to refer to this measure as a source of cash.

18. Please refer to prior comment 24. Under Item 303(a)(5) you should include long-term liabilities reflected in your balance sheet under GAAP as one of the items in the contractual obligations table. Since the back-end interest payment is a long-term liability reflected in your balance sheet under GAAP, it appears that this item should be included in the table. Please either include this item in the table, or explain to us why the item is properly not included in accordance with the rules for that Item.

Evolution of Breast Biopsy Procedures, page 44

Surgical Biopsy, page 44

19. We note your response to prior comment 31 and reissue the comment. Please revise your disclosure to provide the accuracy rate for surgical biopsy as well as alternative biopsy methods, including needle biopsy and vacuum-assisted biopsy.

Related Party Transactions, page 75

20. Reconcile the disclosure on page 75 regarding the extent of the affiliation of the three purchasers of the promissory notes with that in footnote 6 on page F-37. We note that you will disclose the number of shares each of these three investors will receive once you establish a price range for this offering.

Principal Stockholders, page 77

21. When you establish a price range, revise to also reflect the shares to be issued upon conversion of the promissory notes.

Financial Statements, page F-1

Note 1 – General and Significant Accounting Policies, page F-8

Inventory, page F-8

22. You disclose that inventory is stated at standard cost. Under Chapter 4 of ARB 43, standard costs are not appropriate under U.S. GAAP for pricing inventory unless those costs are "adjusted at reasonable intervals to reflect current conditions so that at the balance-sheet date standard costs reasonably approximate costs computed under one of the recognized bases." If true, you should clearly disclose this relationship. See footnote 3 to Chapter 4.

Revenue Recognition and Deferred Revenue, page F-10

23. Refer to prior comment 49. Based on Century Medical's past history of activity, please tell us how management concluded that an estimate of $175,000 as current was reasonable. Describe any known trends, demands, commitments, events or uncertainties that may indicate that purchases made by Century will increase in 2006.

24. Please refer to prior comment 49. Please tell us and disclose the circumstances under which you may be obligated to refund the advances from Century Medical. Please also tell us why you believe it is appropriate to refer to these amounts as "deferred revenue" since the amounts appear to be a customer advance.

25. Please refer to your response to prior comment 49. We note that deferred revenue includes $153,072 as of March 31, 2006 for amounts associated with warranties. Please tell us the significant terms of these maintenance agreements. Please discuss the basis for your measurement of and accounting for these agreements and address how you considered EITF 00-21, Revenue Arrangements with Multiple Deliverables and FTB 90-1, Accounting for Separately Priced Extended Warranty and Product Maintenance Contracts.

26. Please refer to prior comment 48. Please tell us how you allocate the revenues from these sales into the five revenue product groupings on page F-25.

Note 8 – Warrants, page F-22

27. Refer to prior comment 45. Please expand your disclosure in this note to indicate how you calculated the intrinsic value of $294,000 based on the number of warrants issued in connection with the employment arrangement in the table. Also, as previously requested, please disclose the nature of this transaction in the notes to the financial statements.

Note 11. Segment Information, page F-25

28. We note that the amounts for your revenues from each product class included in the table on page F-25 for the year ended December 31, 2003 changed as follows:

- Biopsy disposable products increased from $477,034 to $1,448,214.
- Biopsy capital equipment products decreased from $1,686,415 to $25,033.
- Marker products increased from $2,640,250 to $8,348,651.
- Excision products increased from $9,172 to $234,577.

- Adjunct and other products decreased from $5,464,045 to $220,441.

Please tell us the significant reasons for these changes and highlight any differences between products included in each group for the years ended December 31, 2005, 2004 and 2003.

Interim Financial Statements

Note 6. Subsequent Events, page F-36

29. Please refer to prior comment 55. With respect to our prior comment regarding other embedded derivatives in the instrument, our comment was issued with a view towards disclosure. We note that you currently only disclose that the instrument has one embedded feature. Please tell us why you believe it is appropriate to not identify other embedded derivative features of the instrument.

30. Please refer to prior comment 55. We note that under SFAS 155 you are measuring the promissory notes at fair value. Your response indicates that you will determine fair value in the future by adding the initial proceeds of the notes ($8 million), plus interest due on the notes ($1.8 million) plus the value of the beneficial conversion feature ($2 million). Please tell us why you plan to record the interest on the notes as a change in the fair value of the notes and not as interest expense.

Exhibits

31. Please include a currently dated and signed consent from your independent accountants prior to requesting effectiveness.

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As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested supplemental information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

You may contact at David Burton at (202) 551-3626 or Kate Tillan, Assistant Chief Accountant, at (202) 551-3604 if you have questions regarding comments on the financial statements and related matters. Please contact Donald C. Hunt at (202) 551-3647 or me at (202) 551-3800 with any other questions.

Sincerely,

Peggy Fisher
Assistant Director

cc (via fax): David Saul, Esq., Wilson Sonsini Goodrich & Rosati, P.C.