

Mail Stop 6010

May 5, 2009

Dr. Lawrence Helson
President and Chief Executive Officer and Director
SignPath Pharma, Inc.
1375 California Road
Quakertown, PA 18951

**Re: SignPath Pharma, Inc.
Registration Statement on Form S-1
Filed April 7, 2009
File No. 333-158474**

Dear Dr. Helson:

We have reviewed your filing 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.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form S-1

General

1. Please note that where we provide examples to illustrate what we mean by our comments, they are examples and not exhaustive lists. If our comments are applicable to portions of the filing that we have not cited as examples, make the appropriate changes in accordance with our comments.
2. Please revise your prospectus to describe the various factors considered in determining an offering price. See Item 505 of Regulation S-K.
3. It appears that there is a substantial disparity between the public offering price and the effective cash cost to officers, directors, promoters and affiliated persons of common equity acquired by them in transactions during the past five years, or which they have the right to acquire. Please revise your prospectus to disclose the information required by Item 506(c) of Regulation S-K.
4. Please note, it is permissible to register the resale of common shares that are currently outstanding and shares that will be issued on the conversion/exercise of convertible securities that are currently outstanding. However, it is not permissible to register the resale of shares that will be issued as dividends. You may register the resale of these shares after they have been issued. Please revise your registration statement to remove the shares issuable as dividends on the preferred stock.
5. We note that you are registering the sale of up to 3,585,474 shares of common stock underlying shares of Series A preferred stock, warrants and dividends to be paid on the preferred stock. Given the size relative to the number of shares outstanding held by non-affiliates, the nature of the offering and the total amount of shares being sold by the selling security holders, the transaction appears to be a primary offering. Because you are not eligible to conduct a primary offering on Form S-3 you are not eligible to conduct a primary at-the-market offering under Rule 415(a)(4). Please revise your cover page to eliminate the statement that the shares may be sold at prevailing market prices if listed on the OTCBB, prevailing negotiated prices or at any other price. Additionally, identify the selling shareholders as underwriters.

If you disagree with our analysis, please advise the staff of the company's basis for determining that the transaction is appropriately characterized as a transaction that is eligible to be made under Rule 415(a)(1)(i). In your analysis, please address the following among any other relevant factors:

- The number of selling shareholders and the percentage of the overall offering made by each shareholder;
 - The date on which and the manner in which each selling shareholder received the shares and/or the overlying securities;
 - The relationship of each selling shareholder with the company, including an analysis of whether the selling shareholder is an affiliate of the company;
 - Any relationships among the selling shareholders;
 - The dollar value of the shares registered in relation to the proceeds that the company received from the selling shareholders for the securities, excluding amounts of proceeds that were returned (or will be returned) to the selling shareholders and/or their affiliates in fees or other payments;
 - The discount at which the shareholders will purchase the common stock underlying the preferred stock (or any related security, such as a warrant or option) upon conversion; and
 - Whether or not any of the selling shareholders is in the business of buying and selling securities.
6. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure of the dollar amount of each payment (including the value of any payments to be made in common stock) in connection with the transaction that you have made or may be required to make to any selling shareholder, any affiliate of a selling shareholder, or any person with whom any selling shareholder has a contractual relationship regarding the transaction (including any interest payments, liquidated damages, payments made to “finders” or “placement agents,” and any other payments or potential payments). Please provide footnote disclosure of the terms of each such payment. Please do not include any shares to be issued upon the conversion of the preferred stock in this disclosure.

Further, please provide us, with a view toward disclosure in the prospectus, with disclosure of the net proceeds to the issuer from the sale of the preferred stock and the total possible payments to all selling shareholders and any of their affiliates in the first year following the sale of preferred stock.

7. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure of:

- the total possible profit the selling shareholders could realize as a result of the conversion discount for the securities underlying the preferred stock, presented in a table with the following information disclosed separately:
 - the market price per share of the securities underlying the preferred stock on the date of the sale of the preferred stock;
 - the conversion price per share of the underlying securities on the date of the sale of the preferred stock, as established in the purchase and sale agreement; and
 - the total possible shares underlying the preferred stock (assuming no cash dividend payments, complete conversion of the shares of preferred stock);
 - the combined market price of the total number of shares underlying the preferred stock, calculated by using the market price per share on the date of the sale of the preferred stock and the total possible shares underlying the preferred stock;
 - the total possible shares the selling shareholders may receive and the combined conversion price of the total number of shares underlying the preferred stock calculated by using the conversion price on the date of the sale of the preferred stock and the total possible number of shares the selling shareholders may receive; and
 - the total possible discount to the market price as of the date of the sale of the preferred stock, calculated by subtracting the total conversion price on the date of the sale of the preferred stock from the combined market price of the total number of shares underlying the preferred stock on that date.

If there are provisions in the certificate of designation of preferences, rights and limitations of the Series A preferred stock that could result in a change in the price per share upon the occurrence of certain events, please provide additional tabular disclosure as appropriate. For example, if the conversion price per share is fixed unless and until the market price falls below a stated price, at which point the conversion price per share drops to a lower price, please provide additional disclosure.

8. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure of:
- the gross proceeds paid or payable to the issuer in the private placement transaction;

- all payments that have been made or that may be required to be made by the issuer that are disclosed in response to comment 6;
- the resulting net proceeds to the issuer; and
- the combined total possible profit to be realized as a result of any conversion discounts regarding the securities underlying the preferred stock issued in the private placement held by the selling shareholders or any affiliates of the selling shareholders that is disclosed in response to comment 7.

Further, please provide us, with a view toward disclosure in the prospectus, with disclosure – as a percentage – of the total amount of all possible payments as disclosed in response to comment 6 and the total possible discount to the market price of the shares underlying the preferred stock as disclosed in response to comment 7 divided by the net proceeds to the issuer from the sale of the preferred stock.

9. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure of all prior securities transactions between the issuer (or any of its predecessors) and the selling shareholders, any affiliates of the selling shareholders, or any person with whom any selling shareholder has a contractual relationship regarding the transaction (or any predecessors of those persons), with the table including the following information disclosed separately for each transaction:
 - the date of the transaction;
 - the number of shares of the class of securities subject to the transaction that were outstanding prior to the transaction;
 - the number of shares of the class of securities subject to the transaction that were outstanding prior to the transaction and held by persons other than the selling shareholders, affiliates of the company, or affiliates of the selling shareholders;
 - the number of shares of the class of securities subject to the transaction that were issued or issuable in connection with the transaction;
 - the percentage of total issued and outstanding securities that were issued or issuable in the transaction (assuming full issuance), with the percentage calculated by taking the number of shares issued and outstanding prior to the applicable transaction and held by persons other than the selling shareholders, affiliates of the company, or affiliates of the selling shareholders, and dividing

that number by the number of shares issued or issuable in connection with the applicable transaction;

- the market price per share of the class of securities subject to the transaction immediately prior to the transaction (reverse split adjusted, if necessary); and
- the current market price per share of the class of securities subject to the transaction (reverse split adjusted, if necessary).

10. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure comparing:

- the number of shares outstanding prior to the private placement transaction that are held by persons other than the selling shareholders, affiliates of the company, and affiliates of the selling shareholders; and
- the number of shares registered for resale on behalf of the selling shareholders or affiliates of the selling shareholders in the current transaction.

In this analysis, the calculation of the number of outstanding shares should not include any securities underlying any outstanding convertible securities, options, or warrants.

11. Please provide us, with a view toward disclosure in the prospectus, with the following information:

- whether the issuer has the intention, and a reasonable basis to believe that it will have the financial ability, to make all payments and dividends on the overlying securities; and
- whether – based on information obtained from the selling shareholders – any of the selling shareholders have an existing short position in the company's common stock and, if any of the selling shareholders have an existing short position in the company's stock, the following additional information:
 - the date on which each such selling shareholder entered into that short position; and
 - the relationship of the date on which each such selling shareholder entered into that short position to the date of the announcement of the private placement transaction and the filing of the registration statement (*e.g.*, before or after the announcement of the private placement transaction, before the filing or after the filing of the registration statement, etc.).

12. Please provide us, with a view toward disclosure in the prospectus, with:

- a materially complete description of the relationships and arrangements that have existed in the past three years or are to be performed in the future between the issuer (or any of its predecessors) and the selling shareholders, any affiliates of the selling shareholders, or any person with whom any selling shareholder has a contractual relationship regarding the transaction (or any predecessors of those persons) – the information provided should include, in reasonable detail, a complete description of the rights and obligations of the parties in connection with the sale of the preferred stock; and
- copies of all agreements between the issuer (or any of its predecessors) and the selling shareholders, any affiliates of the selling shareholders, or any person with whom any selling shareholder has a contractual relationship regarding the transaction (or any predecessors of those persons) in connection with the sale of the preferred stock.

If it is your view that such a description of the relationships and arrangements between and among those parties already is presented in the prospectus and that all agreements between and/or among those parties are included as exhibits to the registration statement, please provide us with confirmation of your view in this regard.

13. Please provide us, with a view toward disclosure in the prospectus, with a description of the method by which the company determined the number of shares it seeks to register in connection with this registration statement. In this regard, please ensure that the number of shares registered in the fee table is consistent with the shares listed in the “Selling Shareholders” section of the prospectus.

Summary Information, page 3

Our Company, page 3

14. Throughout the filing you refer to Meyers Associates as “The Placement Agent.” As there is no placement agent in this distribution, please remove this reference. In place of these references, you should disclose Meyers Associates’ holdings and its role in your private placement.
15. The summary should provide a balanced presentation of the information presented in the body of the filing. As currently written, your summary focuses only on your positive attributes. Please balance the discussion of your development plans with a discussion of your challenges and risks. Please include in this revised disclosure a discussion of your losses, auditor’s going concern qualification, that you will

not receive any proceeds in this offering and that you will need additional capital to fund your operations.

The Offering, page 3

16. Please expand your disclosure regarding your issued and outstanding shares to also disclose the number of convertible preferred shares and warrants are outstanding and the convertible terms of these securities.
17. You disclose that the company sold \$847,500 principal amount of 10% promissory notes and issued an aggregate of 1,365,000 shares of common stock. On page II-2, you disclose that you raised gross proceeds of \$847,500 in this financing. Please revise your disclosure here and on page 23 to clarify that the total gross proceeds of the offering was \$847,500.
18. On page 4 you state "Once a fundamental change in the Company occurs we will be required to file a post-effective amendment to the Registration Statement before any warrants can be exercised." Please note, this registration statement relates to the resale of common shares issued on the exercise of the outstanding warrants. It does not relate to the issuance of shares on the exercise of the outstanding warrants. Please revise accordingly. Additionally, please revise the risk factors "Possible redemption of warrants" and "If we do keep a registration statement current, your ability to sell the warrant shares will be limited." These risk factor discussions appear to relate to the risks relating to holding warrants as opposed to purchasing the shares issued upon the exercise of the warrants.

Risk Factors, page 3

General

19. We note that you state that "these risk factors are summary in nature and are not intended to be exhaustive or set forth all the possible risks and uncertainties that may be associated with purchasing or owning this investment." All known risks should be discussed in this section. It is not appropriate to warn readers about additional risks that are not described. Please revise to delete this disclaimer and discuss any additional risks, as necessary.
20. Please note that the foremost risks you highlight should be the most significant risks to the company. We note that on page 18, towards the end of the risk factors, you have disclosed the fact that your auditor has expressed doubt regarding your ability to continue as a going concern. This appears to be a significant risk to the company. Please consider whether this risk should be discussed at the beginning of this section. In addition, please expand this risk

factor to disclose the consequences in terms of your ability to raise capital or borrow money.

21. Based on your disclosure on page 48, it appears that investors in the offering could suffer substantial dilution if the conversion price of your Series A preferred stock resets upon the company's issuance of securities at lower than the \$0.85 per share initial conversion price. You should provide risk factor disclosure explaining the substantial risks this poses to investors.
22. We note that you disclose on page 48 that your holders of your Series A Convertible Stock have protective provisions that provide that you can not authorize, issue or increase an issued amount of any class or series of stock ranking on parity with or superior to the Series A preferred without the affirmative vote of at least two-thirds of the outstanding shares of Series A preferred. Please revise to provide a risk factor explaining the risk to the company in obtaining additional funding.

"We are a development stage company..." page 6

23. We note the bullet list of risks you articulate in this risk factor. Please consider whether any of these risks or the risks listed in the risk factor on pages 9-10 are significant enough to warrant separate risk factors.

"Concentration of ownership by the Placement Agent and its affiliates..." page 7

24. We note that you state that the Placement Agent and its employees, affiliates and principals could be deemed to beneficially own approximately 55% of the outstanding shares of the company's common stock. Please revise to separately disclose the name of the placement agent and each affiliate that owns shares of the company's common stock and the respective percent held by each such person. In addition, to the extent there are differences between this information and the information in the beneficial ownership table on page 43, please describe the differences.

"The Company's success is highly dependent on attracting and retaining..." page 8

25. We note that you refer to the possible loss of service of "one or more of [your] key full-time or part-time employees or consultants." It appears that you only have one full-time employee, your chief executive officer. Please revise to remove the inconsistency. Similarly, please clarify that you only have one current employee in the last risk factor on page 15.

“Unfavorable changes in accounting rules or interpretations.” page 9

26. As written, it appears that this risk factor would apply to every company in every industry. Please revise this discussion to tailor it to your circumstance or remove it from the registration statement.

“If we lose the services of our Chief Executive Officer...” page 9

27. This risk factor appears to be describing the same risk as “The Company’s success is highly dependent on attracting and retaining...” on page 8. Please revise this risk factor to distinguish it from the previous risk factor or consider combining them into one discussion.

“SignPath depends on intellectual property licensed from third parties...” page 10

28. Please revise this risk factor to disclose the term and termination provisions of your license agreements with The Johns Hopkins University and MD Anderson Cancer Center.
29. To the extent the company is aware of any litigation, threatened litigation or challenge to the company’s intellectual property, please revise to describe here and in the first complete risk factors on pages 14 and 15.

“We may be required to suspend or discontinue clinical trials...” page 11

30. To the extent known, please revise this risk factor to discuss any adverse effects of your product candidates.

“Our potential products face significant regulatory hurdles...” page 13

31. We note that you refer to your collaborative partners and their rights to control product development and clinical programs for products developed under the collaborations. You have disclosed that you entered into license agreements with The Johns Hopkins University and MD Anderson Cancer Center. Please revise to disclose the agreement and the collaborative partners’ rights that you refer to in this risk factor. Similarly, it appears that you refer to collaborators throughout the filing, in each location, please identify the collaborator, clarify that the reference is to a collaboration which the company intends to enter in the future or delete the reference to a collaborator.

“No manufacturing facilities.” page 13

32. Based on your disclosure on pages 35 and 37, it appears that the company has entered into manufacturing and supply agreements for liposomal curcumin and nanocurcumin for its pre-clinical requirements. Please disclose the name of the respective manufacturers and/or suppliers in this risk factor. Similarly, in the risk factor on page 16, please identify the raw material that is the subject of the risk factor, whether the company has any agreements in place for that raw material, and, if known, the name of the manufacturer and/or supplier. If you have entered into supply agreements, please file them as exhibits and describe them in an appropriate location in your document. Alternatively, provide us with an analysis supporting your determination that you are not substantially dependent on the supply agreements.

“Absence of a public market for the securities offered...” page 18

33. You state here that you may not fulfill your reporting obligations under the Exchange Act. Please state why you believe this might not happen. Would it be because of a lack of resources to prepare and file the reports? Please note that the disclosure of this risk factor does not absolve you from liability if you fail to file these reports.

“If our common stock is traded on the OTC Bulletin Board...” page 19

34. Your risk factor heading and discussion seem to imply that you will have less market visibility and lower trading volume than if your shares were not traded on the OTCBB. Please revise to clarify.

“Investors may experience substantial dilution...” page 20

35. Please expand this risk factor or create a new risk factor to quantify and explain the dilution and other risks to investors that would ensue if the various warrants, shares of preferred stock and convertible securities you mention later in the prospectus are exercised or converted, as applicable. Also, explain the potential negative effect on your stock price the existence of these securities could have.

“Mandatory conversion of preferred stock...” page 20

36. It does not appear that you have identified a risk in this risk factor. Please revise to specifically identify why these facts make this offering speculative or risky for the potential investors.

“The Company’s officers, directors and Placement Agent...” page 20

37. Please revise to identify your founder, executive officers and directors and state the amount of shares beneficially owned by each respective person.

Management’s Discussion and Analysis of Financial Condition and Results of Operations
Results of Operations for the Year Ended December 31, 2008 as compared with the Year
Ended December 31, 2007, page 23

38. Please disclose the nature and development phase of the research and development payments to Brookwood Pharmaceuticals and Johns Hopkins University.

Liquidity and Capital Resources, page 23

39. Liquidity generally should be discussed on both a long-term and short-term basis. See Instruction 5 to Item 303(a) of Regulation S-K. We note that as of December 31, 2008, the company has \$181,128 cash on hand. Please revise this section to include a detailed discussion of how long you believe this cash will support your business. In addition, it appears that the company will need additional funding shortly. Please revise to disclose whether the company has any plans for this additional funding and, if so, disclose the plans.

Critical Accounting Policies, page 25

40. It appears that you have merely selected certain accounting policies and repeated those policies here. The intent of identifying critical policies is to identify those that require material assumptions and estimates which if different assumptions and estimates were made would materially affect the financial statements. Revise this disclosure accordingly. For example, we note you identify cash and cash equivalents as a critical policy. Explain how this policy requires significant estimates. If you believe this is a critical policy expand the disclosure for this policy and all other identified policies to quantify the effect on the financial statements of changes in estimates in each year presented or explicitly state that changes in estimates were not material. If material changes in estimate have been recognized, fully explain the new information that became available and why that information could not be anticipated at the date the original estimate was made.

Use of Estimates, page 25

41. This disclosure states that the company “regularly evaluates estimates and assumptions related to valuation allowances on accounts receivable...” It does not

appear you have any accounts receivable. Please revise or advise here and in Note 2 b) - Summary of Significant accounting Policies: Use of Estimates.

Plan of Operations, page 28

42. We note that you state that your current focus is on the manufacture and preclinical development of your lead curcumin formulations and that you intend to manufacture good manufacturing practice grade SP01 and SP02. It appears from your disclosures on pages 13, 16 and 28 that you intend to obtain third party manufactures for these products. Please revise to clarify and/or remove the inconsistency.

Business, page 29

43. Please revise your business section to disclose an estimate of the amount spent during each of the last two fiscal years on research and development activities, and the extent to which the cost of such activities is borne directly by customers. See Item 101(h)(4)(x) of Regulation S-K.

Target Markets, page 30

44. In the last paragraph on page 30, you disclose various statistics. Please either clarify that these all came from the source cited in footnote 4 or identify the source of this information.

Clinical Trials, page 35

45. We note that you state that your CEO inspected the facilities at the Allgemeine Krankenhaus, in Vienna Austria, and outlined his agreement to participate in Phase I and II studies following initial toxicity data. Please clarify whether the company entered into a written or oral agreement. If an agreement was entered, please revise to describe the material terms of the agreement and file the agreement as an exhibit or provide us with an analysis supporting your determination that you are not substantially dependent on the agreement.

Potential Commercialization of Liposomal Curcumin and Nanocurcumin, page 37

46. You disclose that “both companies have agreed to proceed with this second phase of development, and the choice of which does this work will be based upon their capacity and experience.” Please name the companies that have agreed to proceed. In addition, it appears that you only plan to proceed with one of the two companies. If true, please clarify that you intend to proceed with only one company which will manufacture both liposomal curcumin and nanocurcumin.

Intellectual Property

Agreement with University of Texas MD Anderson Cancer Center, page 37

47. Please disclose the various milestone events and quantify the related milestone payments under this contract agreement.
48. Disclose how much of the \$250,000 minimum funding has been paid as of December 31, 2008. Please also disclose when you expect to fund the milestone payments and the expected sources of funds.

Agreement with The Johns Hopkins University, page 38

49. Please disclose the various milestone events and quantify the related milestone payments under this contract agreement.
50. Disclose how much of the \$100,000 of funding has been paid as of December 31, 2008. Please disclose when you expect to fund the milestone payments and the expected sources of funds. Please also disclose the minimum annual rate of royalties due under the agreement.
51. We note that you state that you have entered into a sponsored research agreement with Dr. Anirban Maitra. It appears that is separate from the JHU License Agreement. If so, please expand your disclosure to disclose all the material terms of this agreement, including any payment provisions, each parties' material obligations, the term and any termination provisions and please file a copy of this agreement. Alternatively, please provide us with an analysis that supports your apparent conclusion that you are not substantially dependent on this agreement pursuant to Item 601(b)(10) of Regulation S-K.

Management, page 39

52. Please identify each director that is independent under the applicable listing standards listed in Item 407(a)(1) of Regulation S-K. In addition, if such independence standards contain independence requirements for the committees of the board, identify each member that is not independent under such committee independence standards. See Item 407(a) of Regulation S-K.

Scientific Advisory Board, page 40

53. Please revise to describe the material terms of your consulting agreements, including any payment provisions, the range of royalties (i.e. "low single-digit royalty" or "high single-digit royalty), material obligations that must be met to keep the agreement in place, the term and any termination provisions. Also, clarify how much time your Scientific Advisory Board members will devote to

the company, as opposed to other professional endeavors. Please file copies of your consulting agreements with your Scientific Advisory Board members. Alternatively, please provide us with an analysis which supports your apparent conclusion that such agreements are not required to be filed pursuant to Item 601(b)(10) of Regulation S-K.

Executive and Consultant Compensation, page 41

54. Please expand your disclosure to provide the tables and other disclosure required by paragraphs (m) through (r) of Item 402 of Regulation S-K.
55. We note that during the calendar year 2008, Dr. Helson was paid \$49,632 of his salary, but that he was entitled to a base salary of \$200,000. Please expand your disclosure to state when you expect to pay the remaining \$150,368. Please also clarify the current amount of Dr. Helson's "all accrued compensation."

Certain Relationships and Related Transactions, page 42

56. Pursuant to Item 404(d)(1) of Regulation S-K you are required to disclose any related party transaction in which the amount involved exceeds the lesser of \$120,000 or one percent of your average total assets at year end for the last two completed fiscal years, including transactions in which the company sold or issued stock to related parties. Pursuant to Item 404(d)(2) and 404(c) of Regulation S-K you are required to disclose information regarding any promoter used in the last five years. Please revise your disclosure here to include all the information required by Item 404 of Regulation S-K for each transaction involving a related party and/or a promoter.

Principal Stockholders, page 43

57. Please revise this table to disclose the natural person(s) that has voting control over the shares owned by Meyers Associates, LP.

Description of Securities, page 46

General

58. Please disclose how many shares may be sold under Rule 144. See Item 201(a)(2)(ii) of Regulation S-K.

Series A Convertible Preferred Stock, page 47

59. Please expand your description of the Series A Convertible Preferred Stock to explain that the Series A Convertible Preferred Stock will not convert upon completion of the offering.

Financial Statements

Statements of Cash Flows, page F-5

60. Please tell us your basis for adding back accrued interest payable of \$37,909 to net cash used in operating activities when it appears that you should be deducting \$4,467 to net cash used in operating activities in 2008.

Note 1 - Nature of Operations, page F-6

61. Please disclose your plans to obtain financial support to continue as a going concern.

Note 4- Equity Transactions, page F-10

62. Please disclose the nature of the \$309,472 stock offering costs and why they are properly classified as a reduction to paid-in capital. Also, please disclose in the liquidity section of the MD&A the stock offering costs you expect to incur in this offering.
63. Please disclose the terms and conditions of your convertible preferred stock. Please tell us your basis for classifying the convertible preferred stock as permanent equity rather than as a liability. Please refer to FAS 129 and EITF D-98.
64. Please tell us what consideration was given to recording a beneficial conversion feature for the shares of Series A convertible preferred stock issued in your 2008 Private Placement. Refer to EITFs 00-27 and 98-5.
65. Please disclose how you accounted for the warrants issued with the 1,502 units sold. Tell us the accounting literature you are using to support your accounting treatment.
66. Please disclose the assumptions used to determine the value of the warrants issued with the 1,502 units sold.

Exhibits, page II-6

67. We note that your legal opinion states that you are seeking to register 4,855,370 shares of common stock. This does not appear to be consistent with your registration fee table included in the Form S-1. Please revise your legal opinion to include all shares registered in this registration statement.
68. It appears that you have included amendments to your certificate of incorporation at the end of Exhibit 3.3, which you have identified in your Exhibit Index as your Bylaws. Please revise to separately file and separately list in your Exhibit Index these amendments to your certificate of incorporation.
69. Please be aware that when you file an agreement pursuant to Item 601(b)(10) of Regulation S-K, you are required to file the entire agreement, including all exhibits, schedules, appendices and any document which is incorporated in the agreement. We note that some of the agreements, including Exhibits 10.5 and 10.6, did not include all exhibits and/or annexes. Please refile complete copies of Exhibits 10.5, 10.6 and any other exhibits that were not initially filed in full.

* * *

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 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.

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 all information required under the Securities Act of 1933 and that they have provided all information investors require for an informed investment decision. 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 they have made.

Notwithstanding our comments, in the event the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, acknowledging that:

Dr. Lawrence Helson
SignPath Pharma, Inc.
May 5, 2009
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- 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.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

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. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

You may contact Sasha Parikh at (202) 551-3627 or Gustavo Rodriguez at (202) 551-3752 if you have questions regarding comments on the financial statements and related matters. Please contact Jennifer Riegel at (202) 551-3575, Suzanne Hayes at (202) 551-3675 or me at (202) 551-3715 with any other questions.

Sincerely,

Jeffrey Riedler
Assistant Director

cc: Elliot H. Lutzker, Esq.
Phillips Nizer LLP
666 Fifth Avenue, 28th Floor
New York, New York 10103-0084