



DIVISION OF
CORPORATION FINANCE

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

October 20, 2010

Avi Barak
Chief Executive Officer and Director
BioCancell Therapeutics, Inc.
Beck Science Center
8 Hartom St, Har Hotzvim
Jerusalem 97775
Israel 972-2-548-6555

**Re: BioCancell Therapeutics, Inc.
Registration Statement on Form S-1, Amendment No. 6
Filed October 7, 2010
File No. 333-162088**

Dear Mr. Barak:

We have reviewed your response letter dated October 7, 2010 and amended 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. We note your response to comment 1. Rule 15c2-4(b) requires that the money be promptly deposited in the account of an agent or trustee for the potential investors or transmitted to a bank which has agreed in writing to hold the funds in escrow for the benefit of the potential investors until all contingencies are satisfied. Please tell us how your offering structure satisfies Rule 15c2-4 and provide us with a copy of any agreement setting forth the parameters under which funds will be held. Please note that the language on page 74 indicating that funds will be held on your behalf is not consistent with the requirement in Rule 15c2-4 that funds be held for the benefit of potential investors.
2. We note your response to comment 2 and disagree with your argument that a price range does not provide meaningful information to bidders as a bona fide price range should provide bidders with information as to what the final price is likely to be. You should

consider your concerns about the likelihood of investors overbidding when setting your price range. An auction without a price range does not comply with our staff positions relating to auctions. We may have further comments based on your price range. Please provide the price range as soon as practicable. In addition, tell us if you intend to price only within the range or if you view Rule 430A as an avenue to price above the range, within the parameters of the rule.

Use of Proceeds, page 20

3. The second paragraph indicates this is a best efforts offering with “no minimum dollar amount.” The minimum dollar amount should be the minimum bid price times the minimum number of units offered. Please revise. Also, in this paragraph you reference a heading “If 25% of the Units are sold” but there is no such heading in the table.
4. The last paragraph on this section is confusing because the total proceeds should never be “less than those indicated in the table.” The table currently shows the minimum and maximum proceeds. If the minimum is not met, you will not close the offering. Please revise.

Plan of Distribution, page 73

5. We note your response to comments 3 and 4 and your revised disclosure on page 73. Please further revise your disclosure to indicate the point at which the bids will become irrevocable and how you intend to communicate offering milestones, such as the filing of a request for effectiveness, the granting of effectiveness and a final notice of an opportunity to withdraw bids. Please note, that bidders must have a meaningful opportunity to withdraw bids following the effectiveness of the registration statement. Additionally, please revise the references to the bids as “binding” in the summary of the auction process. You should clarify that the bids are revocable and indicate at what point they become irrevocable. See Securities Act Sections CDI 139.26.
6. Your response to comment 5 indicates that you “published” a shelf prospectus in Israel after receiving preliminary approval for all securities specified in the shelf prospectus. However, your response also indicates that you have not submitted a shelf report and or a listing application. Please explain the terms “shelf prospectus” and “shelf report” as they are used in the context of offerings on the TASE. Please explain the difference between and significance of publishing a shelf prospectus and submitting a shelf report. Please explain the process of receiving approval of securities for listing on the TASE. Your explanation should explain how you received preliminary approval and whether the warrants were specified in the October 28, 2009 shelf prospectus. If they were not, please tell us why you believe the preliminary approval will result in an expedited review process.

7. In the first paragraph under “Determination of Unit Price” you state “the principal factor” in establishing the offering price will be the offering price per unit resulting from the highest price at which bids were placed for purchase of all units. The fourth paragraph of this section clarifies that the price is determined by the bids and you have no ability to arbitrarily choose. Please revise the first paragraph to clarify the determination of price is established strictly through the auction process at the highest price at which you may sell all units.

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 the information the Securities Act of 1933 and all applicable Securities Act rules require. 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 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.

Avi Barak
BioCancell Therapeutics, Inc.
October 21, 2010
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You may contact Michael Rosenthal at (202) 551-13674, Suzanne Hayes at (202) 551-3675 or me at (202) 551-3751 with any other questions.

Sincerely,

Jeffrey Riedler
Assistant Director

cc: Dr. Shachar Hadar, Adv.
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