



DIVISION OF
CORPORATION FINANCE

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

October 17, 2012

Via E-mail

Mr. Declan Daly
Chief Financial Officer
Fibrocell Science, Inc.
405 Eagleview Boulevard
Exton, PA 19341

**Re: Fibrocell Science, Inc.
Registration Statement on Form S-1
Filed September 7, 2012
File No. 333-183794**

Dear Mr. Daly:

We have reviewed your supplemental response filed September 28, 2012 have the following comments.

Please respond to this letter by amending your registration statement and providing the requested information. Where 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.

Registration Statement on Form S-1
Supplemental Response filed September 28, 2012

1. Please refer to your response to Comment 1. You use the word "outstanding" in the first sentence of the proposed disclosure. However, it appears that these shares are issuable because they underlie the various warrant issues and convertibles set forth in the bullets. Please revise your disclosure accordingly.
2. Please refer to your response to Comment 5. Your proposed disclosure to be included in the Prospectus Summary and the "Description of Securities" section of your Form S-1 does not discuss the number of shares issued and outstanding, the number reserved for issuance under all outstanding convertibles, options, warrants, contractual obligations or otherwise and the current number authorized but unreserved. Please revise your proposed disclosure accordingly. Please also include this disclosure with respect to two additional scenarios: a 1-for-2 and a 1-for-25 reverse stock split.

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 comment, 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 Rose Zukin at (202) 551-3239 or me at (202) 551-3710 with any questions.

Sincerely,

/s/ Jeffrey P. Riedler

Jeffrey P. Riedler
Assistant Director

cc: Cavas S. Pavri
Cozen O'Connor
1900 Market Street
Philadelphia, PA 19103