



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

DIVISION OF  
CORPORATION FINANCE

*Via U.S. Mail and Facsimile (617/523-1231)*

April 1, 2011

Richard P. Eno  
President and Chief Executive Officer  
Metabolix, Inc.  
21 Erie Street  
Cambridge, MA 02139

**Re: Metabolix, Inc.  
Registration Statement on Form S-3  
Filed March 10, 2011  
File No. 333-172725**

Dear Mr. Eno:

We have limited our review of your registration statement to those issues we have addressed in our 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. 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.

Form S-3

General

1. Please be advised that you must either file your definitive proxy statement or amend your Form 10-K for the fiscal year ended December 31, 2010 to include Part III information and clear any outstanding Staff comments on your Form 10-K and proxy statement before you may request to accelerate the effectiveness of your registration statement. See Question 123.01 of the Securities Act Forms Compliance and Disclosure Interpretations which is available on our website and may be found at <http://www.sec.gov/divisions/corpfin/guidance/safinterp.htm>.

Calculation of Registration Fee table

2. We note that your preferred stock purchase rights are described on page 10. Please revise the registration statement, including the Calculation of Registration Fee table and the prospectus cover page to include the preferred stock purchase rights. Please refer to Question 116.16 of the Securities Act Forms Compliance and Disclosure Interpretations, which is available on our website and may be found at <http://www.sec.gov/divisions/corpfin/guidance/safinterp.htm>.

Signatures, page 20

3. Please revise to also include the signature of the principal accounting officer.

Legal Opinion, Exhibit 5.1

4. Please have counsel revise its opinion to opine on the preferred stock purchase rights.
5. Please remove the requirement that the opinion be interpreted by the Legal Opinion Principles issued by the Committee on Legal Opinions of the American Bar Association's Business Law Section.
6. Please confirm to us that when a takedown occurs, you will file an amended opinion and it will not include assumptions about the total number of authorized shares or the Future Authorization and Issuance of securities. Please note that an unqualified legality opinion is required with every takedown of securities registered under this registration statement. You may file the clean opinions pursuant to Rule 462(d) of the Securities Act of 1933 or on Form 8-K.

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;

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- 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.

Please contact Sherry Haywood, Staff Attorney at (202) 551-3345 or, in her absence, me at (202) 551-3760 with any questions.

Sincerely,

Pamela Long  
Assistant Director

cc: Christopher J. Denn, Esq. (*Via Facsimile 617/523-1231*)  
Joseph C. Theis, Esq.  
Goodwin Procter LLP  
Exchange Place  
Boston, Massachusetts 02109