



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 4631

January 22, 2010

Via U.S. mail and facsimile

Douglas T. Sheehy
Senior Vice President, General Counsel and Secretary
Codexis, Inc.
200 Penobscot Drive
Redwood City, CA 94063

**RE: Codexis, Inc.
Form S-1 filed December 28, 2009
Form S-1/A filed January 14, 2010
File No. 333-164044**

Dear Mr. Sheehy:

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 we will issue any comments we have on your requests for confidential treatment in a separate letter or letters.

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2. We note that you have omitted information beyond that permitted by Rule 430A of Regulation C. Please provide sufficient time to process your filing once you include this omitted information and be advised that its effect on disclosure throughout the document may cause us to raise additional issues as part of our review.

Prospectus Cover Page

3. Please revise your disclosure to clarify that you and the selling stockholders are offering securities through the underwriters identified in this prospectus.

Prospectus Summary, page 1

Our Business Model, page 4

4. We note your use of the terms “APIs” and “FTEs” here and throughout your filing. Please define these terms the first time they appear in your prospectus.

Risk Factors, page 11

5. Please add a risk factor addressing the uncertainties that exist in connection with determining the material United States federal income tax consequences to non-U.S. holders and the potential impact of those uncertain on non-U.S. holders. In this regard, we note your tax disclosure beginning on page 149 that qualifies the material tax consequences with words like “generally.”

Forward-Looking Statements, page 39

6. Please tell us whether the studies by IMS Health, Datamonitor, and the U.S. Energy Information Association are publicly available or whether you commissioned these reports.

Management’s Discussion and Analysis of Financial Condition and Results..., page 47

Liquidity and Capital Resources, page 67

Financing Activities, page 69

7. Please revise your disclosure to add a description of the material covenants (both financial and non-financial) of your GE Capital Loan agreement.

8. We note your disclosure that at December 31, 2008 and September 30, 2009, you were either in compliance with the covenants of the loan and security agreement or obtained from lenders a waiver of noncompliance. Please revise your disclosure to provide a materially complete description of the waivers you received. In doing so, please disclose the period or periods covered by the waivers, as well as the nature of the non-compliance and the material terms on which the waivers were granted.

Business, page 74

9. Please disclose the amount or percentage of your total revenue contributed by any class of similar products or services (e.g., products sold to the pharmaceutical market and products sold to the biofuels market) that accounted for 10% or more of your consolidated revenue in any of the last three fiscal years. See Item 101(c)(1)(i) of Regulation S-K.

Intellectual Property, page 96

10. Under this heading, please indicate the earliest date that any of your intellectual property rights will expire. In this regard, we note your disclosure under the risk factor beginning on page 27, entitled “Our ability to compete may decline if we do not adequately protect our proprietary technologies...,” that some of your licensed patents will expire as early as 2014.

Competition, page 97

Pharmaceuticals, page 98

11. Please identify the principal methods of competition in your pharmaceuticals market. See Item 101(c)(1)(x) of Regulation S-K.

Operations, page 100

12. We note your cross-reference to Note 14 to your consolidated financial statements for information regarding your revenues and long-lived assets outside of the United States. However, this information appears instead under Note 16. Please revise your cross-reference accordingly. In addition, we note that in Note 16 you have provided information regarding your long-lived assets only for two full fiscal years rather than the three fiscal years required by Item 101(d)(1)(ii) of Regulation S-K. Please revise your disclosure accordingly.

Management, page 102

Director Compensation, page 108 and Executive Compensation, page 109

13. Please update your compensation disclosure to cover the fiscal year ended December 31, 2009. Please see paragraph 217.11 of our Compliance and Disclosure Interpretations under Regulation S-K.

Compensation Discussion and Analysis, page 109

Equity Incentive Compensation, page 117

14. We note that in February 2009, in order to best serve your retention goals, you granted “refresher” stock option grants that would vest and become exercisable on an accelerated basis relative to your past stock awards. Please expand your disclosure to address how these refresher stock option grants and their accelerated vesting and exercisability advance your retention goals. See Item 402(b)(1)(vi) of Regulation S-K.

Termination-Based Compensation, page 118

15. We note that you have entered into change in control agreements with Dr. Shaw, Mr. Breuil, and Mr. Sheehy. Please describe the “certain transactions” that may give rise to payments and benefits being paid under these agreements. See Item 402(j)(1) of Regulation S-K. We note your discussion on page 124 under the subheading entitled “Change in Control Agreements.”

Principal and Selling Stockholders, page 139

16. Please identify the natural persons who have voting and dispositive power over the shares beneficially owned by Biomedical Sciences Investment Fund Pte Ltd and by CTTV Investments LLC. See Question 140.02 of our Regulation S-K Compliance and Disclosure Interpretations.

Certain Material United States Federal Income Tax Consequences to Non-U.S. Holders,
page 149

17. You must discuss all material tax consequences. Accordingly, please delete the word “certain” from the heading and anywhere it is used in the disclosure in a manner that suggests the disclosure does not cover all of the material tax consequences, such as in the first sentence.

Part II

Item 13. Other Expenses of Issuance and Distribution, page II-1

18. Please indicate the portion of your offering expenses that will be borne by selling security holders. See Item 511 of Regulation S-K.

Item 16. Exhibits and Financial Statement Schedules, page II-3

19. Please file the following exhibits as materials contracts or explain why you have determined each to be immaterial.

- Independent Director Compensation Plan, page 108.
- 2008 and 2009 Executive Incentive Compensation Plans, page 116.
- Executive Cash Compensation Incentive Plan, page 123.
- Employee Stock Purchase Plan, page 132.
- Catalyst License and Supply Agreement with Merck, page F-23.

See Item 601(b)(10) of Regulation S-K.

* * * *

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:

- 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.

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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 Tracey McKoy, Staff Accountant, at (202) 551-3772 or Al Pavot, Staff Accountant, at (202) 551-3738 if you have questions regarding comments on the financial statements and related matters. Please contact Hagen Ganem, Staff Attorney, at (202) 551-3330 or Dietrich King, Staff Attorney, at (202) 551-3338 with any other questions.

Sincerely,

Pamela A. Long
Assistant Director

cc: Patrick A. Pohlen (via facsimile)
Latham & Watkins LLP