



DIVISION OF  
CORPORATION FINANCE

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

July 30, 2012

Via E-mail

Mr. Kenneth Berlin  
Chief Executive Officer and President  
Rosetta Genomics Ltd.  
3711 Market Street, Suite 740  
Philadelphia, PA 19104

**Re: Rosetta Genomics Ltd.**  
**Form 20-F for the Year Ended December 31, 2011**  
**Filed April 2, 2012**  
**File No. 001-33042**

Dear Mr. Berlin:

We have completed our review of your filing. We remind you that our comments or changes to disclosure in response to our comments do not foreclose the Commission from taking any action with respect to the company or the filing and the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States. 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 Exchange Act of 1934 and all applicable rules require.

Sincerely,

/s/ Gus Rodriguez

Gus Rodriguez  
Accounting Branch Chief