



DIVISION OF  
CORPORATION FINANCE

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

September 14, 2011

Via E-mail

Mr. Michael K. Wilhelm  
President and Chief Executive Officer  
IR Biosciences Holdings, Inc.  
8777 E. Via de Ventura  
Suite 280  
Scottsdale, AZ 85258

**Re: IR Biosciences Holdings, Inc.**  
**Form 10-K for the Fiscal Year Ended December 31, 2010**  
**Filed May 24, 2011**  
**File No. 033-05384**

Dear Mr. Wilhelm:

We issued comments to you on the above captioned filing on August 10, 2011. As of the date of this letter, these comments remain outstanding and unresolved. We expect you to contact us by September 28, 2011 to provide a substantive response to these comments or to advise us why you are unable to respond and when you will be able to do so.

If you do not respond to the outstanding comments or contact us by September 28, 2011, we will, consistent with our obligations under the federal securities laws, decide how we will seek to resolve material outstanding comments and complete our review of your filings and your disclosure. Among other things, we may decide to release publicly, through the agency's EDGAR system, all correspondence, including this letter, relating to the review of your filings, consistent with the staff's decision to release publicly comment letters and response letters relating to disclosure filings it has reviewed. You can find more information about the staff's decision to release filing correspondence at <http://www.sec.gov/news/press/2004-89.htm> and <http://www.sec.gov/news/press/2005-72.htm>.

You may contact Christine Allen, Staff Accountant, at (202) 551-3652 or Melissa N. Rocha, Accounting Branch Chief, at (202) 551-3854 if you have questions regarding the comments. In this regard, do not hesitate to contact me at (202) 551-3679.

Sincerely,

/s/ Jim B. Rosenberg

Jim B. Rosenberg  
Senior Assistant Chief Accountant