



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 3030

September 3, 2009

VIA U.S. MAIL

Andrew S. Maslan
Chief Financial Officer
Cytomedix, Inc.
416 Hungerford Drive, Suite 330
Rockville, Maryland 20850

Re: Cytomedix, Inc.
Form 10-K for the year ended December 31, 2008
Filed March 31, 2009
File No. 001-32518

Dear Mr. Maslan:

We have completed our review of your Form 10-K and related filings and do not, at this time, have any further comments.

Sincerely,

Jeff Jaramillo
Accounting Branch Chief