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

DIVISION OF
CORPORATION FINANCE

September 30, 2016

Kirk Look
Chief Financial Officer
Oncolytics Biotech Inc.
Suite 210, 1167 Kensington Crescent, N.W.
Calgary, Alberta, T2N 1X7

Re: Oncolytics Biotech Inc.
Form 20-F for Fiscal Year Ended December 31, 2015
Filed March 24, 2016
File No. 000-31062

Dear Mr. Look:

We have reviewed your filing and have the following 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 these comments within ten business days by providing the requested information or advise us as soon as possible when you will respond. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing your response to these comments, we may have additional comments.

The Clinical Trial Chart, page 17

1. In some instances it appears that the trial number identifies the party conducting the trial. However, the reference does not appear consistent. For example, the description of "US Phase 1b Multiple Myeloma" in exhibit 15.1, appears to describe the trial identified as REO 019 in the clinical trial chart. However, the chart does not identify USC as a sponsor. Additionally, it is not clear if COG and REO are intended to identify trial sponsors. In future filings, please clarify the trial sponsor.

Exhibit 15.1 Management's Discussion and Analysis

Clinical Trial Program

2. We note your disclosure that various other parties sponsor trials and that you supply REOLYSIN for use during the trial, intellectual capital to support the principal investigators and in some cases cost sharing. Please expand the discussion to more fully describe each party's rights and obligations under each of your third party agreements.

To the extent you have committed to provide financial support to the trial, please quantify your commitments. To the extent the third party will have royalty or other rights to any approved products, please describe these rights.

3. Please provide your analysis supporting your conclusion that none of the third party clinical trial agreements are required to be filed as an exhibit.

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 Exchange 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.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to 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.

Please contact Jeffrey Gabor at (202) 551-2544 or Suzanne Hayes at (202) 551-3675 with any questions.

Sincerely,

/s/ Suzanne Hayes

Suzanne Hayes
Assistant Director
Office of Healthcare and Insurance

cc: Jason K. Brenkert, Esq.
Dorsey & Whitney LLP