May 19, 2016

Oncolytics Biotech® Inc. Reports Preliminary Data from Randomized Phase II Study of REOLYSIN® in Non-Small Cell Lung Cancer

--Randomized REOLYSIN® Data Correlates Genetic Status to Patient Outcomes--

CALGARY, May 19, 2016 /PRNewswire/ - Oncolytics Biotech Inc. ("**Oncolytics**" or the "**Company**") (TSX: ONC) (OTCQX: ONCYF) (FRA: ONY) today announced preliminary data from a randomized, Phase II clinical study of REOLYSIN®. Patients with non-squamous cell histology were treated with REOLYSIN® given in combination with pemetrexed (Arm A) versus pemetrexed alone (Arm B). Patients with squamous cell histology were treated with REOLYSIN® given in combination with docetaxel (Arm C) versus docetaxel alone (Arm D). The study is being sponsored by the National Cancer Institute of Canada ("**NCIC**") Clinical Trials Group ("**CTG**") at Queen's University in Kingston, Ontario. The preliminary analysis includes data from an NCIC study summary report, and follows the release of an abstract to be presented at the American Society of Clinical Oncology ("**ASCO**") Annual Meeting, which will run from June 3-7, 2016 in Chicago, IL.

Highlights

	Median Progression Free Survival (months)			Median Overall Survival (months)[1]		
	Test Arms (Arm A+C) (95% CI)	**Control Arms (Arm B+D) (95% CI)**	**Hazard Ratio (95% CI)**	**Test Arms (Arm A+C) (95% CI)**	**Control Arms (Arm B+D) (95% CI)**	**Hazard Ratio (95% CI)**
EGFR[2]	5.16 (0.76-8.71) (n=8)	4.63 (1.51-7.03) (n=5)	0.54 (0.13-2.22)	18.66 (1.38-26.84) (n=8)	7.49 (4.63-16.79) (n=5)	0.37 (0.08-1.71)
TP53[2]	4.07 (2.63-6.21) (n=24)	2.40 (1.28-2.99) (n=21)	0.58 (0.31-1.08)	8.74 (6.83-13.93) (n=23)	6.14 (3.02-8.18) (n=21)	0.55 (0.28-1.07)
Female Patients	3.98 (2.66-5.39) (n=41)	2.84 (1.51-4.34) (n=34)	0.59 (0.36-0.98)	8.38 (5.36-10.38) (n=41)	7.59 (5.59-10.45) (n=34)	0.85 (0.49-1.46)
Male Patients	2.56 (1.45-3.94) (n=36)	2.69 (2.46-4.24) (n=41)	1.34 (0.83-2.14)	7.66 (4.37-10.94) (n=36)	7.26 (4.86-10.78) (n=41)	1.0 (0.60-1.68)
Overall	2.96 (2.56-4.17) (n=77)	2.83 (2.50-3.98) (n=75)	0.93 (0.66-1.31)	8.12 (5.85-9.40) (n=77)	7.39 (5.72-9.43) (n=75)	0.94 (0.64-1.37)

Source: *Report of Statistical Analysis for NCIC CTG Protocol Number IND.211*

[1] This was an interim analysis, as 38 (25.0%) patients out of a total of 152 patients were alive at the time of data cut-off. Survival outcomes noted could change at final analysis.

[2] Mutated

"It's very encouraging to see both a genetic and gender linkage to progression free survival and overall survival in these difficult to treat patient populations," said Dr. Brad Thompson, President and CEO of Oncolytics Biotech Inc. "This is the first randomized data we have generated in lung cancers that correlates genetic status to patient outcomes."

The investigators concluded that REOLYSIN® was reasonably well tolerated at the dose and schedule administered with pemetrexed or docetaxel and that no new safety signals were seen. They noted it was of interest that female patients in the REOLYSIN®-containing arms did better than in the standard treatment arms and that in a subgroup analysis that EGFR mutation and p53 mutation status was associated with a trend to improved progression free survival.

About IND 211

IND 211 is an open-label, randomized, non-blinded Phase II study of intravenously-administered REOLYSIN® in patients with advanced or metastatic non-small cell lung cancer. Patients with squamous cell histology were treated with either REOLYSIN® given in combination with docetaxel (test arm) or docetaxel alone (control arm). Patients with non-squamous cell histology were treated with either REOLYSIN® given in combination with

pemetrexed (test arm) versus pemetrexed alone (control arm). After a patient safety run-in, a total of approximately 150 response-evaluable patients were enrolled.

The primary objective is progression free survival. Secondary objectives include the tolerability and toxicity of the treatment combination, progression rates at three months, objective response rate, and overall survival. Other objectives include the measurement of molecular factors which may be prognostic or predictive of response.

About Oncolytics Biotech Inc.
Oncolytics is a Calgary-based biotechnology company focused on the development of oncolytic viruses as potential cancer therapeutics. Oncolytics' clinical program includes a variety of later-stage, randomized human trials in various indications using REOLYSIN®, its proprietary formulation of the human reovirus. For further information about Oncolytics, please visit: www.oncolyticsbiotech.com.

This press release contains forward-looking statements, within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements, including the Company's expectations related to the randomized Phase II study in patients with non-small cell lung cancer, future trials in this indication, and the Company's belief as to the potential of REOLYSIN® as a cancer therapeutic, involve known and unknown risks and uncertainties, which could cause the Company's actual results to differ materially from those in the forward-looking statements. Such risks and uncertainties include, among others, the availability of funds and resources to pursue research and development projects, the efficacy of REOLYSIN® as a cancer treatment, the tolerability of REOLYSIN® outside a controlled test, the success and timely completion of clinical studies and trials, the Company's ability to successfully commercialize REOLYSIN®, uncertainties related to the research, development and manufacturing of pharmaceuticals, changes in technology, general changes to the economic environment and uncertainties related to the regulatory process. Investors should consult the Company's quarterly and annual filings with the Canadian and U.S. securities commissions for additional information on risks and uncertainties relating to the forward-looking statements. Investors are cautioned against placing undue reliance on forward-looking statements. The Company does not undertake to update these forward-looking statements, except as required by applicable laws.

SOURCE Oncolytics Biotech Inc.