

ONCOLYTICS BIOTECH INC

Form SUPPL

May 12, 2009

Table of Contents

Filed pursuant to General Instruction II.L. of Form F-10;
File No. 333-151513

Prospectus Supplement
(To a Short Form Base Shelf Prospectus Dated June 16, 2008)

No securities regulatory authority has expressed an opinion about these securities and it is an offence to claim otherwise.

This prospectus supplement, together with the short form base shelf prospectus dated June 16, 2008 to which it relates, as amended or supplemented, and each document deemed to be incorporated by reference into the short form base shelf prospectus, constitutes a public offering of these securities only in those jurisdictions where they may be lawfully offered for sale and therein only by persons permitted to sell such securities.

Information has been incorporated by reference in this prospectus supplement and the accompanying short form base shelf prospectus from documents filed with securities commissions or similar authorities in Canada. Copies of the documents incorporated by reference in this prospectus supplement and the short form base shelf prospectus may be obtained on request without charge from the Corporate Secretary of Oncolytics Biotech Inc. at 210, 1167 Kensington Crescent N.W., Calgary, Alberta T2N 1X7, telephone (403) 670-7377, and are also available electronically at www.sedar.com. See Documents Incorporated by Reference .

New Issue

May 12, 2009

3,450,000 Common Shares

This prospectus supplement relates to the issuance of: (i) up to 3,000,000 of our common shares (the **Common Shares**), issuable from time to time, on exercise of up to 3,000,000 common share purchase warrants (expected to be issued by us on or about May 13, 2009 pursuant to the Unit Offering (as described below), (ii) up to 450,000 Common Shares issuable from time to time, on exercise of 450,000 common share purchase warrants that may be issued on the exercise of the over-allotment option granted to the underwriter pursuant to the Unit Offering; and (iii) such indeterminate number of additional Common Shares that may be issuable by reason of the anti-dilution provisions contained in the Warrant Indenture (as defined herein). See Terms of Warrants .

On May 6, 2009, we filed a prospectus supplement to a short form base shelf prospectus dated June 16, 2008 with the securities commissions in the provinces of British Columbia, Alberta, Manitoba and Ontario and a registration statement on Form F-10 (File No. 333-151513), principally filed on June 6, 2008, as amended June 17, 2008, with the United States Securities and Exchange Commission (the **SEC**) relating to the offering (the **Unit Offering**) by us in the provinces of British Columbia, Alberta, Manitoba and Ontario of up to 3,450,000 units of the Corporation (the **Units**), each Unit consisting of one Common Share and one common share purchase warrant (the **Warrants**). Each Warrant will entitle the holder to purchase one Common Share upon payment of Cdn.\$2.40, subject to adjustment, at any time until 4:30 p.m. (Calgary time) on the date that is 36 months from the date of the closing of the Unit Offering. If on any date (the **Accelerated Exercise Date**) the 10-day volume weighted average trading price of the Common Shares on the Toronto Stock Exchange (**TSX**) exceeds \$3.35 per share, then, at our sole discretion, and upon us sending the holders of Warrants written notice of such Accelerated Exercise Date and issuing a news release announcing such Accelerated Exercise Date, the Warrants shall only be exercisable for a period of 30 days following the later of the

date on which such written notice is sent to holders of Warrants and the date on which such announcement is made by news release. The exercise price of the Warrants was determined by negotiation between us and the underwriter for the Unit Offering. See Plan of Distribution .

Our outstanding Common Shares are listed for trading on the TSX under the trading symbol **ONC** and on the NASDAQ Capital Market (the **NASDAQ**) under the trading symbol **ONCY**. The TSX has conditionally approved the listing of the Common Shares issuable on the exercise of the Warrants. Listing for the Common Shares issuable on the exercise of the Warrants is subject to us fulfilling all of the requirements of the TSX on or before August 4, 2009. Pursuant to its procedure, the NASDAQ has confirmed that it will not be objecting to the additional listing of the Common Shares issuable upon exercise of the Warrants.

Investing in the Common Shares involves risks that are described in the Risk Factors section beginning on page S-20 of this prospectus supplement and page 4 of the accompanying short form base shelf prospectus.

This prospectus supplement registers the offering of the securities to which it relates under the United States Securities Act of 1933, as amended (the **U.S. Securities Act**), in accordance with the multi-jurisdictional disclosure system adopted by the SEC. This prospectus supplement does not qualify the distribution of Common Shares in any province or territory of Canada.

NEITHER THE SEC NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS SUPPLEMENT OR THE ACCOMPANYING SHORT FORM BASE SHELF PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

We are permitted, under a multi-jurisdictional disclosure system adopted by the United States, to prepare this prospectus supplement and the accompanying short form base shelf prospectus in accordance with Canadian disclosure requirements. You should be aware that such requirements are different from those of the United States. We have prepared our financial statements included or incorporated herein by reference in accordance with Canadian generally accepted accounting principles, and they are subject to Canadian auditing and auditor independence standards. Thus, they may not be comparable to the financial statements of United States companies. Information regarding the impact upon our financial statements of significant differences between Canadian and United States generally accepted accounting principles is contained in the notes to our audited financial statements and in our Current Report on Form 6-K dated May 5, 2009, both of which are incorporated by reference in this prospectus supplement and the accompanying short form base shelf prospectus.

You should be aware that the purchase of Common Shares may have tax consequences both in the United States and Canada. This prospectus supplement and the accompanying short form base shelf prospectus may not describe these tax consequences fully. You should read the tax discussion in this prospectus supplement and the accompanying short form base shelf prospectus. See Canadian Federal Income Tax Considerations and Certain United States Federal Income Tax Considerations in this prospectus supplement and the accompanying short form base shelf prospectus.

Your ability to enforce civil liabilities under United States federal securities laws may be affected adversely by the fact that we are incorporated under the laws of Canada, the majority of our officers and directors and some of the experts named in this prospectus supplement and the accompanying short form base shelf prospectus are residents of Canada, and a substantial portion of our assets and the assets of such persons are located outside the United States.

Our head office and principal place of business is located at 210, 1167 Kensington Crescent N.W., Calgary, Alberta, T2N 1X7. Our registered office is located at 4500 Bankers Hall East, 855 2nd Street S.W., Calgary, Alberta, T2P

4K7.

TABLE OF CONTENTS

	Page
<u>IMPORTANT NOTICE ABOUT THE INFORMATION IN THIS PROSPECTUS SUPPLEMENT</u>	S-1
<u>DEFINITIONS AND OTHER MATTERS</u>	S-1
<u>SPECIAL NOTICE REGARDING FORWARD-LOOKING STATEMENTS</u>	S-2
<u>DOCUMENTS INCORPORATED BY REFERENCE</u>	S-2
<u>DOCUMENTS FILED AS PART OF THE REGISTRATION STATEMENT</u>	S-4
<u>ONCOLYTICS BIOTECH INC.</u>	S-4
<u>OUR BUSINESS</u>	S-4
<u>RECENT DEVELOPMENTS</u>	S-6
<u>CAPITALIZATION</u>	S-6
<u>MARKET FOR SECURITIES</u>	S-6
<u>USE OF PROCEEDS</u>	S-6
<u>PRIOR SALES</u>	S-7
<u>TERMS OF WARRANTS</u>	S-7
<u>PLAN OF DISTRIBUTION</u>	S-8
<u>CANADIAN FEDERAL INCOME TAX CONSIDERATIONS</u>	S-9
<u>CERTAIN UNITED STATES FEDERAL INCOME TAX CONSIDERATIONS</u>	S-12
<u>RISK FACTORS</u>	S-20
<u>LEGAL MATTERS AND INTEREST OF EXPERTS</u>	S-20

IMPORTANT NOTICE ABOUT THE INFORMATION IN THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of the Common Shares being offered and also adds to and updates information contained in the accompanying short form base shelf prospectus. The second part, the accompanying short form base shelf prospectus, gives more general information, some of which may not apply to the Common Shares being offered under this prospectus supplement.

You should rely only on the information contained in or incorporated by reference in this prospectus supplement and the accompanying short form base shelf prospectus. If the description of the Common Shares varies between this prospectus supplement and the accompanying short form base shelf prospectus, you should rely on the information in this prospectus supplement. We have not authorized anyone to provide you with different or additional information. We are not making an offer of the Common Shares in any jurisdiction where the offer is not permitted by law. If anyone provides you with any different or inconsistent information, you should not rely on it. You should not assume that the information contained in or incorporated by reference in this prospectus supplement or the accompanying short form base shelf prospectus is accurate as of any date other than the date on the front of this prospectus supplement.

DEFINITIONS AND OTHER MATTERS

In this prospectus supplement and in the accompanying short form base shelf prospectus, unless otherwise indicated, references to we , us , our , Oncolytics or the Corporation are to Oncolytics Biotech Inc. and/or its subsidiary corporations, as applicable. All references to dollars , Cdn.\$ or \$ are to Canadian dollars and all references to U.S.\$ to United States dollars.

We prepare our financial statements in accordance with Canadian generally accepted accounting principles (**Canadian GAAP**), which differ from United States generally accepted accounting principles (**U.S. GAAP**).

S-1

Table of Contents

Therefore, our consolidated financial statements incorporated by reference in this prospectus supplement and in the accompanying short form base shelf prospectus and in the documents incorporated by reference in this prospectus supplement and in the accompanying short form base shelf prospectus may not be comparable to consolidated financial statements prepared in accordance with U.S. GAAP. You should refer to Note 22 of our consolidated financial statements for the year ended December 31, 2008 for a discussion of the principal differences between our financial results determined under Canadian GAAP and under U.S. GAAP. For our consolidated financial statements as at and for the three months ended March 31, 2009, you should refer to our reconciliation of our consolidated financial statements as at and for the three months ended March 31, 2009 to U.S. GAAP furnished to the SEC on the Corporation's Current Report on Form 6-K dated May 5, 2009 and incorporated into this prospectus supplement by reference. See Documents Incorporated by Reference .

This prospectus supplement is deemed to be incorporated by reference into the accompanying short form base shelf prospectus solely for the purposes of the offering of the Common Shares. Other documents are also incorporated or deemed to be incorporated by reference into this prospectus supplement and into the accompanying short form base shelf prospectus. See Documents Incorporated by Reference in this prospectus supplement.

SPECIAL NOTICE REGARDING FORWARD-LOOKING STATEMENTS

Some of the statements that we make contain forward-looking statements reflecting our current beliefs, plans, estimates and expectations. Readers are cautioned that these forward-looking statements involve risks and uncertainties, including, without limitation, clinical trial study delays, product development delays, our ability to attract and retain business partners, future levels of government funding, competition from other biotechnology companies and our ability to obtain the capital required for research, product development, operations and marketing. These factors should be carefully considered and readers should not place undue reliance on our forward-looking statements. Actual events may differ materially from our current expectations due to risks and uncertainties.

Our statements of belief , estimates , expectations and other similar statements are based primarily upon our results derived to date from our research and development program with animals and early stage human results and upon which we believe we have a reasonable scientific basis to expect the particular results to occur. It is not possible to predict, based upon studies in animals or early stage human results, whether a new therapeutic will be proved to be safe and effective in humans. There can be no assurance that the particular result expected by us will occur. Except as required by applicable securities laws, we undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus supplement or to conform these statements to actual results or to changes in our expectations.

DOCUMENTS INCORPORATED BY REFERENCE

This prospectus supplement is deemed to be incorporated by reference into the accompanying short form base shelf prospectus solely for the purposes of the offering of the Common Shares.

Other information has also been incorporated by reference in the accompanying base shelf prospectus from documents filed with securities commissions or similar authorities in certain of the provinces of Canada. Copies of the documents incorporated herein by reference may be obtained on request without charge from our Corporate Secretary at 210, 1167 Kensington Crescent N.W., Calgary, Alberta, T2N 1X7 telephone (403) 670-7377, and are available electronically at www.sedar.com.

We have filed the following documents with the securities commissions or similar regulatory authorities in certain of the provinces of Canada and such documents are specifically incorporated by reference in and form an integral part of the accompanying base shelf prospectus and this prospectus supplement:

our Annual Information Form, which is comprised of our Annual Report on Form 20-F dated March 6, 2009, for the year ended December 31, 2008 (the **AIF**);

our Management Proxy Circular dated March 20, 2008 relating to the annual and special meeting of shareholders held on May 7, 2008;

S-2

Table of Contents

our Management Proxy Circular dated March 18, 2009 relating to the annual and special meeting of shareholders held on May 5, 2009;

our audited consolidated financial statements, together with the notes thereto, as at December 31, 2008 and 2007 and for each of the years in the three year period ended December 31, 2008 and for the cumulative period from inception on April 2, 1998 and the auditors' report thereon addressed to our shareholders;

our management's discussion and analysis of financial condition and results of operations dated March 4, 2009, for the year ended December 31, 2008;

our unaudited interim consolidated financial statements, together with the notes thereto, as at and for the three months ended March 31, 2009;

our management's discussion and analysis of financial condition and results of operations dated May 5, 2009, for the three months ended March 31, 2009;

the reconciliation of our unaudited interim consolidated financial statements as at and for the three months ended March 31, 2009 to U.S. GAAP, filed on May 5, 2009 under the heading "Other"; and

our material change report dated March 5, 2009 relating to the acquisition of all the issued and outstanding shares of a private company.

Any documents of the type required by Section 11.1 of Form 44-101F1 *Short Form Prospectus* promulgated under National Instrument 44-101 *Short Form Prospectus Distributions* of the Canadian Securities Administrators to be incorporated by reference in a short form prospectus, including, without limitation, any annual information form, comparative annual financial statements and the auditors' report thereon, comparative interim financial statements, management's discussion and analysis of financial condition and results of operations, material change report (except a confidential material change report), business acquisition report and information circular, if filed by us with the securities commissions or similar authorities in the provinces of British Columbia, Alberta, Manitoba and Ontario after the date of this prospectus supplement and prior to the termination of the distribution of the Common Shares under this prospectus supplement shall be deemed to be incorporated by reference in the accompanying base shelf prospectus for the purposes of the offering of the Common Shares issuable from time to time on the exercise of the Warrants.

Any report filed by us with the SEC pursuant to section 13(a), 13(c), 14 or 15(d) of the United States Securities Exchange Act of 1934, as amended, after the date of this prospectus supplement shall be deemed to be incorporated by reference into the registration statement of which this prospectus supplement forms a part, if and to the extent expressly provided in such report.

Any statement contained in the accompanying base shelf prospectus, in this prospectus supplement or in a document incorporated or deemed to be incorporated by reference in the accompanying base shelf prospectus will be deemed to be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained in this prospectus supplement or in any other subsequently filed document which also is, or is deemed to be, incorporated by reference into the accompanying base shelf prospectus modifies or supersedes that statement. The modifying or superseding statement need not state that it has modified or superseded a prior statement or include any other information set forth in the document that it modifies or supersedes. The making of a modifying or superseding statement shall not be deemed an admission for any purposes that the modified or superseded statement when made, constituted a misrepresentation, an untrue

statement of a material fact or an omission to state a material fact that is required to be stated or that is necessary to make a statement not misleading in light of the circumstances in which it was made. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute part of this prospectus supplement or the accompanying base shelf prospectus.

Upon a new annual information form and related audited annual financial statements and management's discussion and analysis being filed by us with, and where required, accepted by, the securities commission or similar regulatory authority in each of the provinces of British Columbia, Alberta, Manitoba and Ontario during the term of this prospectus supplement, the previous annual information form, the previous audited annual consolidated financial statements and related management's discussion and analysis, all unaudited interim consolidated financial

S-3

Table of Contents

statements and related management's discussion and analysis, material change reports and business acquisition reports filed prior to the commencement of our financial year in which the new annual information form and related audited annual consolidated financial statements and management's discussion and analysis are filed shall be deemed no longer to be incorporated into the accompanying base shelf prospectus for purposes of future offers and sales of Common Shares under this prospectus supplement. Upon new interim consolidated financial statements and related management's discussion and analysis being filed by us with the securities commission or similar regulatory authority in each of the provinces of British Columbia, Alberta, Manitoba and Ontario during the term of this prospectus supplement, all interim consolidated financial statements and related management's discussion and analysis filed prior to the new interim consolidated financial statements and related management's discussion and analysis shall be deemed no longer to be incorporated into the accompanying base shelf prospectus for purposes of future offers and sales of Common Shares under this prospectus supplement. Upon a new information circular relating to an annual meeting of holders of Common Shares being filed by us with the securities commission or similar regulatory authority in each of the provinces of British Columbia, Alberta, Manitoba and Ontario during the term of this prospectus supplement, the information circular for the preceding annual meeting of holders of Common Shares shall be deemed no longer to be incorporated into the accompanying base shelf prospectus for purposes of future offers and sales of Common Shares under this prospectus supplement.

DOCUMENTS FILED AS PART OF THE REGISTRATION STATEMENT

The following documents have been filed with the SEC as part of the registration statement on Form F-10 (File No. 333-151513) of which this prospectus supplement forms a part: the documents referred to under "Documents Incorporated by Reference", consent of Ernst & Young LLP, consent of Bennett Jones LLP, and powers of attorney from our directors and officers.

The Warrant Indenture for the Warrants has been or will be filed with the SEC as part of the registration statement on Form F-10 (File No. 333-151513).

ONCOLYTICS BIOTECH INC.

Oncolytics Biotech Inc. was incorporated pursuant to the provisions of the *Business Corporations Act* (Alberta) on April 2, 1998 as 779738 Alberta Ltd. On April 8, 1998, we amended our articles and changed our name to Oncolytics Biotech Inc. On July 29, 1999, we further amended our articles by removing the private company restrictions and subdividing our 2,222,222 Common Shares issued and outstanding into 6,750,000 Common Shares. On February 9, 2007, we further amended our articles to permit for our shareholder meetings to be held at any place in Alberta or at any other location as determined by our directors.

Our head office and principal place of business is located at 210, 1167 Kensington Crescent N.W., Calgary, Alberta T2N 1X7. Our registered office is located at 4500 Bankers Hall East, 855 - 2nd Street S.W., Calgary, Alberta T2P 4K7.

We have three direct wholly-owned subsidiaries: Oncolytics Biotech (Barbados) Inc. (**Oncolytics Barbados**), which is incorporated pursuant to the laws of Barbados; Valens Pharma Ltd., which is incorporated pursuant to the laws of the Province of Alberta; 145302 Alberta Ltd., which is incorporated pursuant to the laws of the Province of Alberta; and one indirect wholly-owned subsidiary, Oncolytics Biotech (U.S.), Inc., which is incorporated pursuant to the laws of Delaware.

OUR BUSINESS

We focus on the discovery and development of oncolytic viruses for the treatment of cancers that have not been successfully treated with conventional therapeutics. Recent scientific advances in oncology, virology, and molecular biology have created opportunities for new approaches to the treatment of cancer. The product we are presently developing may represent a novel treatment for Ras-mediated cancers which can be used as an alternative to existing cytotoxic or cytostatic therapies or as an adjuvant therapy to conventional chemotherapy, radiation therapy,

S-4

Table of Contents

or surgical resections. It could also potentially be used to treat certain cellular proliferative disorders for which no current therapy exists.

Our technologies are based primarily on discoveries in the Department of Microbiology and Infectious Diseases at the University of Calgary in the 1990s. Oncolytics was formed in 1998 to explore the natural oncolytic capability of the reovirus, a virus that preferentially replicates in cells with an activated Ras pathway.

The lead product being developed by us may represent a novel treatment for certain tumour types and some cellular proliferative disorders. Our lead product is a virus that is able to replicate specifically in, and hence kill, certain tumour cells both in tissue culture as well as in a number of animal models without damaging normal cells.

Our potential product for human use, REOLYSIN[®], is developed from the reovirus. This virus has been demonstrated to replicate specifically in tumour cells bearing an activated Ras pathway. Activating mutations of Ras occur in approximately thirty per cent of all human tumours directly, but considering its central role in signal transduction, activation of the Ras pathway has been shown to play a role in approximately two-thirds of all tumours.

The functionality of REOLYSIN[®] is based upon the finding that tumours bearing an activated Ras pathway are deficient in their ability to activate the anti-viral response mediated by the host cellular protein, Protein Kinase R (**PKR**). Since PKR is responsible for preventing reovirus replication, tumour cells lacking the activity of PKR are susceptible to reovirus infections. As normal cells do not possess Ras activations, these cells are able to thwart reovirus infections by the activity of PKR. In a tumour cell with an activated Ras pathway, reovirus is able to freely replicate and hence kill the host tumour cell. The result of this replication is progeny viruses that are then free to infect surrounding cancer cells. This cycle of infection, replication and cell death is believed to be repeated until there are no longer any tumour cells carrying an activated Ras pathway available.

The following schematic illustrates the molecular basis of how the reovirus kills cancer cells.

For both non-cancer cells and cancer cells with an activated Ras pathway, virus binding, entry, and production of viral genes all proceed normally. In the case of normal cells however, the viral genes cause the activation of the anti-viral response that is mediated by the host cell's PKR, thus blocking the replication of the reovirus. In cells with an activated Ras pathway, the activation of PKR is prevented or reversed by an element of the Ras signal transduction pathway, thereby allowing the replication of the reovirus in these cancer cells. The end result of this replication is the death of the cancer cell. The action of the Ras pathway in allowing reovirus replication to ensue can be mimicked in non-cancerous cells by treating these cells with the chemical 2-aminopurine (2-AP) which prevents the activation of PKR.

Table of Contents**RECENT DEVELOPMENTS**

On May 6, 2009, we filed a prospectus supplement to the short form base shelf prospectus dated June 16, 2008 in respect of the Unit Offering.

CAPITALIZATION

On March 31, 2009 we had 43,855,748 Common Shares issued and outstanding. On May 12, 2009, we had 45,750,869 Common Shares issued and outstanding. If all of our stock options and warrants outstanding as of May 12, 2009 were exercised, we would have 55,126,862 Common Shares issued and outstanding. Following the Unit Offering, we will have up to 48,750,869 Common Shares issued and outstanding (up to 61,426,862 Common Shares on a fully-diluted basis). Following the Unit Offering, and assuming the over-allotment option granted to the underwriter pursuant to the Unit Offering is exercised in full, we will have 49,200,869 Common Shares issued and outstanding (62,371,862 Common Shares on a fully-diluted basis).

MARKET FOR SECURITIES

Our outstanding Common Shares are listed and posted for trading on the TSX under the trading symbol **ONC** and on NASDAQ under the trading symbol **ONCY**. The following table sets forth the market price ranges and the aggregate volume of trading of the Common Shares on the TSX and NASDAQ for the periods indicated:

Period	TSX				NASDAQ			Volume
	High	Low	Close	Volume	High	Low	Close	
	(\$)	(\$)	(\$)	(Shares)	(U.S.\$)	(U.S.\$)	(U.S.\$)	(Shares)
2008								
May	2.18	1.60	2.15	6,682,910	2.21	1.62	2.15	897,410
June	2.40	1.85	1.98	786,060	2.39	1.84	1.95	934,260
July	2.10	1.80	1.91	508,040	2.00	1.79	1.85	467,500
August	2.01	1.82	1.87	333,770	1.90	1.75	1.77	297,960
September	1.94	1.40	1.57	484,830	1.80	1.32	1.50	634,990
October	1.92	1.23	1.64	1,147,860	1.54	1.00	1.39	2,045,040
November	1.90	1.35	1.44	694,411	1.64	1.12	1.17	1,106,707
December	1.79	1.26	1.49	1,086,919	1.38	1.03	1.21	1,002,720
2009								
January	1.69	1.44	1.56	475,217	1.41	1.15	1.26	605,857
February	1.95	1.46	1.67	667,374	1.60	1.18	1.30	807,838
March	1.75	1.41	1.57	332,754	1.40	1.14	1.26	679,705
April	2.33	1.50	2.09	1,367,754	1.95	1.21	1.74	1,301,319
May 1-11	2.05	1.90	2.00	408,561	1.75	1.60	1.71	301,227

USE OF PROCEEDS

From time to time, when the Warrants are exercised, we will receive proceeds equal to the aggregate exercise price of such Warrants. Assuming that all of the Warrants are exercised prior to their expiry time and that no adjustment based on the anti-dilution provisions contained in the Warrant Indenture has taken place, the gross proceeds to us from the exercise of the Warrants will be approximately \$8,280,000.

The net proceeds for the exercise of the Warrants will be used by us for our research and development program, our manufacturing activities in support of the program and general corporate purposes.

The principal purposes in the research and development area will be the advancement of our clinical trial program and the continued development of our manufacturing process. Our clinical trial program has been designed

Table of Contents

and directed to test the safety and activity of REOLYSIN® either as a mono-therapy or in combination with other approved chemotherapies.

The net proceeds of exercise of the Warrants will further these objectives and will assist us in completing our ongoing Phase II clinical trial program. Specifically, the net proceeds will further our mono and co-therapy trials in the U.S. and our co-therapy trials in the U.K. Manufacturing is a key element in the progress towards regulatory approval and the net proceeds will assist in funding the lyophilization and process development activities in this area. These two areas in the development process are expected to cost approximately \$6 million in 2009.

We contract out the majority of our activities, conducting our clinical trial program at selected clinical trial sites coordinated and managed through Contract Research Organizations. The manufacturing program is contracted out to a major manufacturer and directed by us.

In order to reach commercial production we will need to receive regulatory approval allowing us to sell REOLYSIN®. To receive regulatory approval, we will be required to run a successful pivotal clinical trial program and validate our cGMP manufacturing process. We expect to commence these activities in the later part of 2009. As we have yet to determine the size of our pivotal trial program, the jurisdictions where we plan to file our program, and who the principal investigators will be, the timing and the ultimate costs of such activities are currently indeterminable.

PRIOR SALES

Other than as set forth below, no Common Shares or securities exchangeable or convertible into Common Shares have been issued during the twelve month period preceding the date of this prospectus supplement.

On December 5, 2008, we issued 2,650,000 units, each unit consisting of one Common Share and one Common Share purchase warrant, at a price of \$1.50 per unit. Each whole Common Share purchase warrant entitles the holder to acquire one additional Common Share of Oncolytics upon payment of \$1.80 on or before December 5, 2012, subject to an acceleration of the expiry date in certain circumstances.

On December 11, 2008, we granted options to acquire an aggregate of 15,500 Common Shares at an exercise price of \$1.45 per Common Share.

On January 20, 2009, we issued 25,000 Common Shares on the exercise of 25,000 options at an exercise price of \$0.85 per Common Share.

On April 9, 2009, we issued 1,875,121 Common Shares in connection with the acquisition of all the issued and outstanding securities of an inactive private company at an ascribed value of \$1.69 (being the 20 day volume weighted average trading price of our Common Shares on the TSX up to and including March 2, 2009).

On May 6, 2009, we issued 20,000 Common Shares on the exercise of 20,000 warrants at an exercise price of \$1.80 per warrant.

TERMS OF WARRANTS

The Warrants will be governed by an indenture (the **Warrant Indenture**) to be entered into between us and Computershare Trust Company of Canada, as agent for the holders of the Warrants. The following is a summary of the material attributes and characteristics of the Warrants. The following description of the terms of the Warrant Indenture is subject to the detailed provisions of the Warrant Indenture.

Under the Unit Offering, up to 3,450,000 Warrants may be issued. Each Warrant will entitle the holder to purchase one Common Share upon payment of \$2.40, subject to adjustment, at any time until 4:30 p.m. (Calgary time) on the date that is 36 months following the closing of the Unit Offering. If on any Accelerated Exercise Date the 10 day volume weighted average trading price of our Common Shares on the TSX exceeds \$3.35 per share, then, at our sole discretion and upon us sending the holders of the Warrants written notice of such Accelerated Exercise Date (the **Notice**) and issuing a news release announcing such Accelerated Exercise Date, the Warrants shall only be exercisable for a period of 30 days following the later of the date on which such Notice is sent to holders of

S-7

Table of Contents

Warrants and the date on which such announcement is made by news release. The Notice will be deemed to be sent by us on the date the Notice is deposited in first class mail to the registered address of the holder of the Warrants as reflected on the Warrant register maintained under the Warrant Indenture.

No U.S. Person (as that term is defined by Regulation S under the U.S. Securities Act), person within the United States or person holding Warrants for the account or benefit of a U.S. Person or person within the United States is permitted to exercise Warrants during any period of time prior to the expiration date of the Warrants during which a registration statement under the U.S. Securities Act, relating to the Common Shares underlying the Warrants, is not effective. As a condition to closing the Unit Offering, we have agreed to use reasonable efforts to maintain the registration statement on Form F-10 (File No. 333-151513) relating to the short form base shelf prospectus accompanying the prospectus supplement, or another registration statement relating to the Common Shares underlying the Warrants, effective until the earlier of the expiration date of the Warrants and the date on which no Warrants remain outstanding. If a registration statement under the U.S. Securities Act is not effective during such period of time, we will notify the holders of the Warrants in the United States, in accordance with the Warrant Indenture.

Holders of Warrants will not have any voting rights or any other rights which a holder of Common Shares would have (including, without limitation, the right to receive notice of or to attend meetings of shareholders or any right to receive dividends or other distributions). Holders of Warrants will have no pre-emptive rights to acquire our securities. If all of the Warrants were exercised, we would be required to issue 3,450,000 Common Shares (subject to adjustment in certain circumstances), assuming exercise in full of the over-allotment option granted to the underwriter in connection with the Unit Offering.

PLAN OF DISTRIBUTION

This prospectus supplement relates to the issuance of: (i) up to 3,000,000 Common Shares, issuable from time to time, on exercise of 3,000,000 common share purchase warrants (expected to be issued by us on or about May 13, 2009 pursuant to the Unit Offering (as described below), (ii) up to 450,000 Common Shares issuable from time to time, on exercise of 450,000 common share purchase warrants that may be issued on the exercise of the over-allotment option granted to the underwriter pursuant to the Unit Offering; and (iii) such indeterminate number of additional Common Shares that may be issuable by reason of the anti-dilution provisions contained in the Warrant Indenture governing the Warrants. See Terms of Warrants .

This prospectus supplement registers the offering of the securities to which it relates under the U.S. Securities Act, in accordance with the multi-jurisdictional disclosure system adopted by the SEC and the securities commission or similar regulatory authority in each of the provinces of Canada. This prospectus supplement does not qualify the distribution of the Common Shares in any province or territory of Canada.

Holders of Warrants resident in the United States who acquire Common Shares pursuant to the exercise of Warrants in accordance with their terms and under the accompanying short form base shelf prospectus and this prospectus supplement may have a right of action against us for any misrepresentation in the accompanying base shelf prospectus and this prospectus supplement. However, the existence and enforceability of such a right of action is not without doubt. By contrast, holders of Warrants resident in Canada who may acquire Common Shares pursuant to the exercise of Warrants in accordance with their respective terms and who will be deemed to acquire such Common Shares under applicable Canadian prospectus exemptions, will not have any such right of action with respect to such acquisition of Common Shares.

The Common Shares to which this prospectus supplement relates will be sold directly by us to holders of Warrants on the exercise of such Warrants. No underwriters, dealers or agents will be involved in these sales.

On June 16, 2008, we filed a short form base shelf prospectus with the Alberta Securities Commission, as principal regulator, and on June 6, 2008, as amended June 17, 2008, a registration statement on Form F-10 (File No. 333-151513) with the SEC relating to the offering by the Corporation from time to time during the 25 months that the short form base shelf prospectus, including amendments thereto, remained valid of up to Cdn.\$150,000,000 of Common Shares, subscription receipts, warrants, debt securities and units. The shelf registration statement became effective with the SEC pursuant to Rule 467(a) of the U.S. Securities Act on June 17, 2008.

Table of Contents

On May 6, 2009, we filed a prospectus supplement to the short form base shelf prospectus dated June 16, 2008 with the securities commissions in the provinces of British Columbia, Alberta, Manitoba and Ontario and a registration statement on Form F-10 (File No. 333-151513) with the SEC relating to the offering by us in British Columbia, Alberta, Manitoba and Ontario of (i) up to 3,450,000 Units, each Unit consisting of one Common Share and one common share purchase warrant and (ii) up to 345,000 broker warrants. Each Warrant will entitle the holder to purchase one Common Share upon payment of Cdn.\$2.40, subject to adjustment, at any time until 4:30 p.m. (Calgary time) on the date that is 36 months from the date of the closing of the Unit Offering. If on the Accelerated Exercise Date the 10-day volume weighted average trading price of the Common Shares on the TSX exceeds \$3.35 per share, then, at our sole discretion, and upon us sending the holders of Warrants written notice of such Accelerated Exercise Date and issuing a news release announcing such Accelerated Exercise Date, the Warrants shall only be exercisable for a period of 30 days following the later of the date on which such written notice is sent to holders of Warrants and the date on which such announcement is made by news release. The exercise price of the Warrants was determined by negotiation between us and the underwriter for the Unit Offering. Each broker warrant is exercisable, in whole or in part, within 3 years of the initial closing date of the Unit Offering (subject to acceleration), into one Common Share at an exercise price of \$2.40. The Unit Offering is expected to be completed on or about May 13, 2009.

It is a condition of closing of the Unit Offering that the shelf registration statement remain effective with the SEC and that we file with the SEC this prospectus supplement registering the offering of the Common Shares issuable from time to time on the exercise of the Warrants.

No U.S. Person, person within the United States or person holding Warrants for the account or benefit of a U.S. Person or person within the United States may exercise the Warrants during any period of time when a registration statement covering such Common Shares is not effective. See Terms of Warrants .

CANADIAN FEDERAL INCOME TAX CONSIDERATIONS

In the opinion of Bennett Jones LLP (**Counsel**), the following is a general summary of the principal Canadian federal income tax considerations generally applicable to an investor who acquires Common Shares upon the exercise of Warrants issued under the Unit Offering. This summary is applicable only to investors who, for the purposes of the Tax Act and at all relevant times, will hold the Common Shares and hold the Warrants as capital property, and deal at arm's length, and are not affiliated with us. Common Shares and Warrants will generally constitute capital property to an investor provided that the investor does not hold such securities in the course of carrying on a business and has not acquired such securities in a transaction or transactions considered to be an adventure or concern in the nature of trade.

This summary is not applicable to an investor, (i) an interest in which is a tax shelter investment , (ii) who has elected to determine its Canadian tax results in accordance with the functional currency rules, (iii) that is a financial institution for purposes of the mark-to-market rules, or (iv) is a specified financial institution , all within the meaning of the Tax Act. Any such investor should consult its own Canadian tax advisors with respect to the acquisition, holding or disposition of the Common Shares and Warrants.

This summary is based upon the current provisions of the Tax Act, the regulations thereunder (the **Regulations**), all specific proposals to amend the Tax Act and the Regulations publicly announced by the Canadian Minister of Finance prior to the date hereof (the **Proposed Amendments**) and Counsel's understanding of the current published administrative policies and practices of the Canada Revenue Agency (the **CRA**). This summary is not exhaustive of all possible Canadian federal income tax considerations and except for the Proposed Amendments does not otherwise take into account any changes in law, whether by legislative, governmental or judicial action, nor does it take into account or consider any provincial, territorial or foreign income tax considerations. There can be no assurance that the Proposed Amendments will be enacted in their current form or at all.

This summary is of a general nature only and is not intended to be, nor should it be construed to be, legal or tax advice to any particular investor. Accordingly, all prospective investors are urged to consult their own tax advisors with respect to their particular circumstances.

S-9

Table of Contents

Residents of Canada

This portion of the summary is applicable to an investor who, for the purposes of the Tax Act and at all relevant times, is resident or is deemed to be resident in Canada.

Allocation of Purchase Price

For the purposes of the Tax Act, the purchase price of each Unit under the Unit Offering must be allocated, on a reasonable basis, between the Common Share and the Warrant acquired on the acquisition of the Unit in order to determine the respective cost of the Common Share and the Warrant to the investor. Oncolytics believes that it is reasonable to allocate a nominal value of the purchase price of each Unit to the Warrant. However, such allocation is not binding upon the CRA.

The portion of the purchase price of each Unit allocated to the Common Share and to the Warrant, respectively, will become an investor's acquisition cost of the Common Share and the Warrant for income tax purposes. These amounts must generally be averaged with the adjusted cost base of all other common shares and common share purchase warrants of Oncolytics, respectively, held by the investor as capital property to determine the adjusted cost base of all such common shares and common share purchase warrants to the investor.

Exercise of Warrants

When a Warrant is exercised, the investor's adjusted cost base of the Common Share acquired thereby will (subject to averaging with the investor's adjusted cost base of all common shares of Oncolytics held by the investor as capital property at that time) be the aggregate of the investor's adjusted cost base of the Warrant and the exercise price paid on the exercise of the Warrant.

Disposition of Common Shares

In general, a disposition, or a deemed disposition, of a Common Share, other than to us, will give rise to a capital gain (or a capital loss) in the taxation year of the disposition equal to the amount by which the proceeds of disposition of the Common Share, as the case may be, net of any reasonable costs of disposition, exceed (or are less than) the adjusted cost base of the Common Share to the holder thereof.

Treatment of Capital Gains and Capital Losses

In the year of disposition an investor will be required to include one-half of the amount of any capital gain (a **taxable capital gain**) in income, and will be generally required to deduct one-half of the amount of any capital loss (an **allowable capital loss**) against taxable capital gains realized by the investor in the year. Allowable capital losses not deducted in the taxation year in which they are realized may be carried back and deducted in any of the three preceding taxation years or carried forward and deducted in any subsequent taxation year against taxable capital gains realized in such years, to the extent and under the circumstances specified in the Tax Act. A Canadian-controlled private corporation (as defined in the Tax Act) may be liable to an additional 62/3% refundable tax under the Tax Act on certain investment income, including taxable capital gains.

The amount of any capital loss realized on the disposition or deemed disposition of a Common Share by an investor that is a corporation may be reduced by the amount of dividends received or deemed to have been received by it on the Common Share to the extent and in the circumstances prescribed by the Tax Act. Similar rules may apply where an investor that is a corporation is a member of a partnership or is beneficiary of a trust that owns Common Shares and where Common Shares are owned by a partnership or trust of which a partnership or trust is a partner or beneficiary.

Investors to whom these rules may be relevant should consult their own tax advisors.

Dividends

Dividends (including deemed dividends) received on Common Shares will be included in computing the investor's income. In the case of an individual investor (other than certain trusts), such dividends will generally be subject to the gross-up and dividend tax credit rules normally applicable to dividends received from taxable Canadian corporations. Provided that appropriate designations are made by us at the time the dividend is paid, such

S-10

Table of Contents

dividend will be treated as an eligible dividend for purposes of the Tax Act and an investor will be entitled to an enhanced gross up and dividend tax credit in respect of such dividend. There may be limitations on our ability to designate dividends as eligible dividends. In the case of a corporation, dividends will generally be deductible in computing the corporation's taxable income. An investor that is a private corporation, as defined in the Tax Act, or any other corporation resident in Canada and controlled by or for the benefit of an individual (other than a trust) or a related group of individuals (other than trusts) will generally be liable to pay a refundable tax at the rate of 33 1/3% on dividends received (or deemed to be received) on Common Shares to the extent such dividends are deductible in computing its taxable income.

Alternative Minimum Tax

A holder who is an individual (other than certain trusts) may be liable for alternative minimum tax if the holder receives or is deemed to receive taxable dividends or realizes a capital gain.

Non-Residents of Canada

This portion of the summary is applicable to an investor who, for the purposes of the Tax Act and at all relevant times, is not, and has never been, resident in Canada and is not, and has never been, deemed to be resident in Canada, does not use or hold, and is not deemed to use or hold, the Warrants or Common Shares received upon exercise of the Warrants in, or in the course of, carrying on business in Canada, and is not an insurer who carries on an insurance business in Canada and elsewhere (a **Non-Resident Holder**).

Allocation of the Purchase Price

A Non-Resident Holder will be required to allocate the purchase price of each Unit between the Common Share and the Warrant in the same manner described above under **Residents of Canada Allocation of Purchase Price**.

Disposition of Common Shares and Exercise of Warrants

A Non-Resident Holder will not be subject to tax under the Tax Act on the exercise of Warrants.

A Non-Resident Holder will be subject to tax under the Tax Act in respect of a disposition of Common Shares only to the extent such Common Shares constitute taxable Canadian property for purposes of the Tax Act and the Non-Resident Holder is not afforded relief from such tax under an applicable income tax treaty.

The Common Shares will normally not be taxable Canadian property at a particular time provided that: (i) the Common Shares are listed on a designated stock exchange at the particular time (which includes the TSX and NASDAQ); (ii) the Non-Resident Holder, persons with whom the Non-Resident Holder does not deal at arm's length (within the meaning of the Tax Act), or the Non-Resident Holder together with such persons, did not own 25% or more of the issued shares of any class or series of Oncolytics at any time during the 60-month period preceding the particular time; and (iii) such Common Shares are not otherwise deemed under the Tax Act to be taxable Canadian property at the particular time.

A Non-Resident Holder who is subject to tax under the Tax Act on a disposition of Common Shares will generally be required to compute such gains in the same manner described above under **Residents of Canada Disposition of Common Shares or Warrants**.

Dividends

Dividends paid or credited, or which are deemed to be paid or credited, on the Common Shares will be subject to a Canadian non-resident withholding tax of 25%, subject to reduction of such rate under an applicable income tax treaty. For example, Non-Resident Holders who are residents of the United States for the purposes of the *Canada-United States Tax Convention, 1980* and entitled to the benefit of the treaty will generally have such rate of withholding reduced to 15% (or 5% if such Non-Resident Holder is a company which owns at least 10% of the voting stock of Oncolytics).

S-11

Table of Contents

Non-Resident Holders should consult their tax advisors with respect to the tax implications of acquiring Common Shares on the exercise of Warrants in their jurisdiction of residence and the application of any bilateral income tax treaty between Canada and their jurisdiction of residence.

CERTAIN UNITED STATES FEDERAL INCOME TAX CONSIDERATIONS

The following is a summary of certain material anticipated U.S. federal income tax consequences to a U.S. Holder (as defined below) arising from and relating to the acquisition of Common Shares received on the exercise of Warrants under this prospectus supplement.

This summary is for general information purposes only and does not purport to be a complete analysis or listing of all potential U.S. federal income tax consequences that may apply to a U.S. Holder as a result of the acquisition of Common Shares received on the exercise of Warrants. In addition, this summary does not take into account the individual facts and circumstances of any particular U.S. Holder that may affect the U.S. federal income tax consequences to such U.S. Holder. Accordingly, this summary is not intended to be, and should not be construed as, legal or U.S. federal income tax advice with respect to any U.S. Holder. Each U.S. Holder should consult its own tax advisor regarding the U.S. federal income, U.S. state and local, and foreign tax consequences of the acquisition of Common Shares received on the exercise of Warrants.

Notice Pursuant To IRS Circular 230: Anything contained in this summary concerning any U.S. federal tax issue is not intended or written to be used, and it cannot be used by a U.S. Holder, for the purpose of avoiding federal tax penalties under the Internal Revenue Code. This summary was written to support the promotion or marketing of the transactions or matters addressed by this prospectus supplement. Each U.S. Holder should seek U.S. federal tax advice, based on such U.S. Holder's particular circumstances, from an independent tax advisor.

No legal opinion from U.S. legal counsel or ruling from the Internal Revenue Service (the **IRS**) has been requested, or will be obtained, regarding the U.S. federal income tax consequences of the acquisition of Common Shares received on the exercise of Warrants. This summary is not binding on the IRS, and the IRS is not precluded from taking a position that is different from, and contrary to, the positions taken in this summary. In addition, because the authorities on which this summary is based are subject to various interpretations, the IRS and the U.S. courts could disagree with one or more of the positions taken in this summary.

Scope of this Summary

Authorities

This summary is based on the Internal Revenue Code of 1986, as amended (the **Code**), Treasury Regulations (whether final, temporary, or proposed), published rulings of the IRS, published administrative positions of the IRS, the Convention Between Canada and the United States of America with Respect to Taxes on Income and on Capital, signed September 26, 1980, as amended (the **Canada-U.S. Tax Convention**), and U.S. court decisions that are applicable and, in each case, as in effect and available, as of the date of this prospectus supplement. Any of the authorities on which this summary is based could be changed in a material and adverse manner at any time, and any such change could be applied on a retroactive basis. This summary does not discuss the potential effects, whether adverse or beneficial, of any proposed legislation that, if enacted, could be applied on a retroactive basis.

U.S. Holders

For purposes of this summary, a U.S. Holder is a beneficial owner of Warrants that, for U.S. federal income tax purposes, is (a) an individual who is a citizen or resident of the U.S., (b) a corporation, or any other entity classified as a corporation for U.S. federal income tax purposes, that is created or organized in or under the laws of the U.S., any state in the U.S., or the District of Columbia, (c) an estate if the income of such estate is subject to U.S. federal income tax regardless of the source of such income, or (d) a trust if (i) such trust has validly elected to be treated as a U.S. person for U.S. federal income tax purposes or (ii) a U.S. court is able to exercise primary supervision over the administration of such trust and one or more U.S. persons have the authority to control all substantial decisions of such trust.

Table of Contents

Non-U.S. Holders

For purposes of this summary, a non-U.S. Holder is a beneficial owner of Warrants other than a U.S. Holder. This summary does not address the U.S. federal income tax consequences to non-U.S. Holders of the acquisition of Common Shares received on the exercise of Warrants. Accordingly, a non-U.S. Holder should consult its own tax advisor regarding the U.S. federal income, U.S. state and local, and foreign tax consequences (including the potential application of and operation of any income tax treaties) of the acquisition of Common Shares received on the exercise of Warrants.

U.S. Holders Subject to Special U.S. Federal Income Tax Rules Not Addressed

This summary does not address the U.S. federal income tax consequences applicable to U.S. Holders that are subject to special provisions under the Code, including the following U.S. Holders: (a) U.S. Holders that are tax-exempt organizations, qualified retirement plans, individual retirement accounts, or other tax-deferred accounts; (b) U.S. Holders that are financial institutions, insurance companies, real estate investment trusts, or regulated investment companies; (c) U.S. Holders that are dealers in securities or currencies or U.S. Holders that are traders in securities that elect to apply a mark-to-market accounting method; (d) U.S. Holders that have a functional currency other than the U.S. dollar; (e) U.S. Holders that own units, warrants, or common shares as part of a straddle, hedging transaction, conversion transaction, constructive sale, or other arrangement involving more than one position; (f) U.S. Holders that received units, warrants, or common shares in connection with the exercise of employee stock options or otherwise as compensation for services; (g) U.S. Holders that hold units, warrants, or common shares other than as a capital asset within the meaning of Section 1221 of the Code; (h) U.S. expatriates or former longer-term residents of the U.S. or (i) U.S. Holders that own (directly, indirectly, or constructively) 10% or more of the total combined voting power of the outstanding shares of the Corporation. U.S. Holders that are subject to special provisions under the Code, including U.S. Holders described immediately above, should consult their own tax advisor regarding the U.S. federal income tax consequences of the acquisition of Common Shares received on the exercise of Warrants.

If an entity that is classified as a partnership for U.S. federal income tax purposes holds Warrants, the U.S. federal income tax consequences to such partnership and the partners of such partnership generally will depend on the activities of the partnership and the status of such partners. Partners of entities that are classified as partnerships for U.S. federal income tax purposes should consult their own tax advisor regarding the U.S. federal income tax consequences of the acquisition of Common Shares received on the exercise of Warrants.

Other Tax Consequences Not Addressed

This summary does not address the U.S. state and local, U.S. federal estate and gift, U.S. federal alternative minimum tax; or foreign tax consequences to U.S. Holders of the acquisition of Common Shares received on the exercise of Warrants. Each U.S. Holder should consult its own tax advisor regarding the U.S. state and local, U.S. federal estate and gift, and foreign tax consequences of the acquisition of Common Shares received on the exercise of Warrants.

U.S. Federal Income Tax Consequences of the Exercise of Warrants

A U.S. Holder should not recognize gain or loss on the exercise of a Warrant and related receipt of a Common Share (except if cash is received in lieu of the issuance of a fractional Common Share). Subject to the passive foreign investment company (**PFIC**) rules discussed below, a U.S. Holder's initial tax basis in the Common Share received on the exercise of a Warrant should be equal to the sum of (a) such U.S. Holder's tax basis in such Warrant plus (b) the exercise price paid by such U.S. Holder on the exercise of such Warrant. A U.S. Holder's holding period for the Common Share received on the exercise of a Warrant should begin on the date that such Warrant is exercised by such

U.S. Holder.

S-13

Table of Contents

U.S. Federal Income Tax Consequences of the Ownership and Disposition of Common Shares

Distributions on Common Shares

Subject to the PFIC rules discussed below, a U.S. Holder that receives a distribution, including a constructive distribution, with respect to the Common Shares will be required to include the amount of such distribution in gross income as a dividend (without reduction for any Canadian income tax withheld from such distribution) to the extent of the current or accumulated earnings and profits of the Corporation. To the extent that a distribution exceeds the current and accumulated earnings and profits of the Corporation, such distribution will be treated (a) first, as a tax-free return of capital to the extent of a U.S. Holder's tax basis in the Common Shares and, (b) thereafter, as gain from the sale or exchange of such Common Shares. However, the Corporation does not intend to maintain the calculations of earnings and profits in accordance with U.S. federal income tax principles, and each U.S. Holder should therefore assume that any distribution by the Corporation with respect to the Common Shares will constitute ordinary dividend income. (See more detailed discussion at *Disposition of Common Shares* below). Dividends paid on the Common Shares generally will not be eligible for the dividends received deduction.

For taxable years beginning before January 1, 2011, a dividend paid by the Corporation generally will be taxed at the preferential tax rates applicable to long-term capital gains if (a) the Corporation is a qualified foreign corporation (as defined below), (b) the U.S. Holder receiving such dividend is an individual, estate, or trust, and (c) certain holding period requirements are met.

The Corporation generally will be a qualified foreign corporation under Section 1(h)(11) of the Code (a **QFC**) if (a) the Corporation is eligible for the benefits of the Canada-U.S. Tax Convention, or (b) the Common Shares are readily tradable on an established securities market in the U.S. However, even if the Corporation satisfies one or more of such requirements, the Corporation will not be treated as a QFC if the Corporation is a PFIC (as defined below) for the taxable year during which the Corporation pays a dividend or for the preceding taxable year.

As discussed below, the Corporation believes that it qualified as a PFIC for the taxable year ended December 31, 2008, and based on current business plans and financial projections, the Corporation anticipates that it may qualify as a PFIC for subsequent taxable years. (See more detailed discussion at *Passive Foreign Investment Company Rules* below). Accordingly, there can be no assurances that the Corporation will be a QFC for the current or any future taxable year.

If the Corporation is not a PFIC, but a U.S. Holder otherwise fails to qualify for the preferential tax rate applicable to dividends discussed above, a dividend paid by the Corporation to a U.S. Holder, including a U.S. Holder that is an individual, estate, or trust, generally will be taxed at ordinary income tax rates (and not at the preferential tax rates applicable to long-term capital gains). The dividend rules are complex, and each U.S. Holder should consult its own tax advisor regarding the dividend rules.

Disposition of Common Shares

A U.S. Holder will recognize gain or loss on the sale or other taxable disposition of Common Shares in an amount equal to the difference, if any, between (a) the amount of cash plus the fair market value of any property received and (b) such U.S. Holder's tax basis in the Common Shares sold or otherwise disposed of. Subject to the PFIC rules discussed below, any such gain or loss generally will be capital gain or loss, which will be long-term capital gain or loss if the Common Shares are held for more than one year. Gain or loss recognized by a U.S. Holder on the sale or other taxable disposition of Common Shares generally will be treated as U.S. source for purposes of applying the U.S. foreign tax credit rules unless the gain is subject to tax in Canada and is resourced as foreign source under the Canada-U.S. Tax Convention and such U.S. Holder elects to treat such gain or loss as foreign source. (See more

detailed discussion at Foreign Tax Credit below).

Preferential tax rates apply to long-term capital gains of a U.S. Holder that is an individual, estate, or trust. There are currently no preferential tax rates for long-term capital gains of a U.S. Holder that is a corporation. Deductions for capital losses are subject to significant limitations under the Code.

S-14

Table of Contents

Receipt of Foreign Currency

The amount of any distribution paid in foreign currency to a U.S. Holder in connection with the ownership of Common Shares, or on the sale, exchange or other taxable disposition of Common Shares, generally will be equal to the U.S. dollar value of such foreign currency based on the exchange rate applicable on the date of receipt (regardless of whether such foreign currency is converted into U.S. dollars at that time). A U.S. Holder that receives foreign currency and converts such foreign currency into U.S. dollars at a conversion rate other than the rate in effect on the date of receipt may have a foreign currency exchange gain or loss, which generally would be treated as U.S. source ordinary income or loss.

Taxable dividends with respect to Common Shares that are paid in foreign currency will be included in the gross income of a U.S. Holder as translated into U.S. dollars calculated by reference to the exchange rate prevailing on the date of actual or constructive receipt of the dividend, regardless of whether the foreign currency is converted into U.S. dollars at that time. If the foreign currency received is not converted into U.S. dollars on the date of receipt, a U.S. Holder will have a basis in the foreign currency equal to its U.S. dollar value on the date of receipt. Any U.S. Holder who receives payment in foreign currency and engages in a subsequent conversion or other disposition of the foreign currency may have a foreign currency exchange gain or loss that would be treated as ordinary income or loss, and generally will be U.S. source income or loss for foreign tax credit purposes. Each U.S. Holder should consult its own U.S. tax advisor regarding the U.S. federal income tax consequences of receiving, owning, and disposing of foreign currency.

Foreign Tax Credit

A U.S. Holder that pays (whether directly or through withholding) Canadian income tax with respect to dividends received on the Common Shares generally will be entitled, at the election of such U.S. Holder, to receive either a deduction or a credit for such Canadian income tax paid. Generally, a credit will reduce a U.S. Holder's U.S. federal income tax liability on a dollar-for-dollar basis, whereas a deduction will reduce a U.S. Holder's income subject to U.S. federal income tax. This election is made on a year-by-year basis and applies to all foreign taxes paid (whether directly or through withholding) by a U.S. Holder during a taxable year.

Complex limitations apply to the foreign tax credit, including the general limitation that the credit cannot exceed the proportionate share of a U.S. Holder's U.S. federal income tax liability that such U.S. Holder's foreign source taxable income bears to such U.S. Holder's worldwide taxable income. In applying this limitation, a U.S. Holder's various items of income and deduction must be classified, under complex rules, as either foreign source or U.S. source. In addition, this limitation is calculated separately with respect to specific categories of income. Dividends received on the Common Shares generally will constitute foreign source income and generally will be categorized as passive income. The foreign tax credit rules are complex, and each U.S. Holder should consult its own tax advisor regarding the foreign tax credit rules.

Information Reporting; Backup Withholding Tax

Under U.S. federal income tax law and regulations, certain categories of U.S. Holders must file information returns with respect to their investment in, or involvement in, a foreign corporation. Penalties for failure to file certain of these information returns are substantial. U.S. Holders of our Common Shares should consult with their own tax advisors regarding the requirements of filing information returns, and if applicable, any mark-to-market election or QEF election (each as defined below).

Payments made within the U.S., or by a U.S. payor or U.S. middleman, of dividends on, or proceeds arising from the sale or other taxable disposition of, Common Shares generally will be subject to information reporting and backup

withholding tax, at the rate of 28%, if a U.S. Holder (a) fails to furnish such U.S. Holder's correct U.S. taxpayer identification number (generally on Form W-9), (b) furnishes an incorrect U.S. taxpayer identification number, (c) is notified by the IRS that such U.S. Holder has previously failed to properly report items subject to backup withholding tax, or (d) fails to certify, under penalty of perjury, that such U.S. Holder has furnished its correct U.S. taxpayer identification number and that the IRS has not notified such U.S. Holder that it is subject to backup withholding tax. However, U.S. Holders that are corporations generally are excluded from these information reporting and backup withholding tax rules. Any amounts withheld under the U.S. backup withholding tax rules will

S-15

Table of Contents

be allowed as a credit against a U.S. Holder's U.S. federal income tax liability, if any, or will be refunded, if such U.S. Holder furnishes required information to the IRS. Each U.S. Holder should consult its own tax advisor regarding the information reporting and backup withholding tax rules.

Passive Foreign Investment Company Rules

If the Corporation is a passive foreign investment company (as defined below), the preceding sections of this summary may not describe the U.S. federal income tax consequences to U.S. Holders of the acquisition, ownership, and disposition of Common Shares.

The Corporation generally will be a PFIC under the meaning of Section 1297 of the Code if, for a taxable year, (a) 75% or more of the gross income of the Corporation for such taxable year is passive income or (b) on average, 50% or more of the assets held by the Corporation either produce passive income or are held for the production of passive income, based on the fair market value of such assets (or on the adjusted tax basis of such assets, if the Corporation is not publicly traded and either is a controlled foreign corporation or makes an election). Passive income includes, for example, dividends, interest, certain rents and royalties, certain gains from the sale of stock and securities, and certain gains from commodities transactions. Active business gains arising from the sale of commodities generally are excluded from passive income if substantially all of a foreign corporation's commodities are (a) stock in trade of such foreign corporation or other property of a kind which would properly be included in inventory of such foreign corporation, or property held by such foreign corporation primarily for sale to customers in the ordinary course of business, (b) property used in the trade or business of such foreign corporation that would be subject to the allowance for depreciation under Section 167 of the Code, or (c) supplies of a type regularly used or consumed by such foreign corporation in the ordinary course of its trade or business.

For purposes of the PFIC income test and asset test described above, if the Corporation owns, directly or indirectly, 25% or more of the total value of the outstanding shares of another corporation, the Corporation will be treated as if it (a) held a proportionate share of the assets of such other corporation and (b) received directly a proportionate share of the income of such other corporation. In addition, for purposes of the PFIC income test and asset test described above, passive income does not include any interest, dividends, rents, or royalties that are received or accrued by the Corporation from a related person (as defined in Section 954(d)(3) of the Code), to the extent such items are properly allocable to the income of such related person that is not passive income.

In addition, if the Corporation is a PFIC and owns shares of another foreign corporation that also is a PFIC (a Subsidiary PFIC), under certain indirect ownership rules, a disposition of the shares of such Subsidiary PFIC or a distribution received from such Subsidiary PFIC generally will be treated as an indirect disposition by a U.S. Holder or an indirect distribution received by a U.S. Holder, subject to the rules of Section 1291 of the Code discussed below. To the extent that gain recognized on the actual disposition by a U.S. Holder of the Common Shares or income recognized by a U.S. Holder on an actual distribution received on the Common Shares was previously subject to U.S. federal income tax under these indirect ownership rules, such amount generally should not be subject to U.S. federal income tax.

The Corporation believes that it qualified as a PFIC for the taxable year ended December 31, 2008, and based on current business plans and financial projections, the Corporation anticipates that it may qualify as a PFIC for subsequent taxable years. The determination of whether the Corporation will be a PFIC for any taxable year depends, in part, on the application of complex U.S. federal income tax rules, which are subject to differing interpretations. In addition, whether the Corporation will be a PFIC for its current taxable year depends on the assets and income of the Corporation over the course of each such taxable year and, as a result, cannot be predicted with certainty as of the date of this prospectus supplement. Consequently, there can be no assurance regarding the Corporation's PFIC status for any taxable year during which U.S. Holders hold the Common Shares, and there can be no assurance that the IRS will

not challenge the determination made by the Corporation concerning its PFIC status.

Default PFIC Rules Under Section 1291 of the Code

If the Corporation is a PFIC, the U.S. federal income tax consequences to a U.S. Holder of the acquisition, ownership, and disposition of Common Shares will depend on whether such U.S. Holder makes certain elections

S-16

Table of Contents

described below. A U.S. Holder that does not make any of the elections described below will be subject to the default PFIC rules discussed immediately below and will be referred to in this summary as a Non-Electing U.S. Holder.

A Non-Electing U.S. Holder will be subject to the rules of Section 1291 of the Code with respect to (a) any gain recognized on the sale or other taxable disposition of Common Shares and (b) any excess distribution paid on the Common Shares. A distribution generally will be an excess distribution to the extent that such distribution (together with all other distributions received in the current taxable year) exceeds 125% of the average distributions received during the three preceding taxable years (or during a U.S. Holder's holding period for the Common Shares, if shorter).

Under Section 1291 of the Code, any gain recognized on the sale or other taxable disposition of Common Shares, and any excess distribution paid on the Common Shares, must be ratably allocated to each day in a Non-Electing U.S. Holder's holding period for the Common Shares. The amount of any such gain or excess distribution allocated to prior years of such Non-Electing U.S. Holder's holding period for the Common Shares (other than years prior to the first taxable year of the Corporation beginning after December 31, 1986 for which the Corporation was not a PFIC) will be subject to U.S. federal income tax at the highest tax applicable to ordinary income in each such prior year. A Non-Electing U.S. Holder will be required to pay interest on the resulting tax liability for each such prior year, calculated as if such tax liability had been due in each such prior year. Such a Non-Electing U.S. Holder that is not a corporation must treat any such interest paid as personal interest, which is not deductible. The amount of any such gain or excess distribution allocated to the current year of such Non-Electing U.S. Holder's holding period for the Common Shares will be treated as ordinary income in the current year, and no interest charge will be incurred with respect to the resulting tax liability for the current year.

If the Corporation is a PFIC for any taxable year during which a Non-Electing U.S. Holder holds Common Shares, the Corporation will continue to be treated as a PFIC with respect to such Non-Electing U.S. Holder, regardless of whether the Corporation ceases to be a PFIC in one or more subsequent years. A Non-Electing U.S. Holder may terminate this deemed PFIC status by electing to recognize gain (which will be taxed under the rules of Section 1291 of the Code discussed above) as if such Common Shares were sold on the last day of the last taxable year for which the Corporation was a PFIC.

QEF Election

A U.S. Holder that makes a QEF Election generally will not be subject to the rules of Section 1291 of the Code discussed above. However, a U.S. Holder that makes a QEF Election will be subject to U.S. federal income tax on such U.S. Holder's pro rata share of (a) the net capital gain of the Corporation and each Subsidiary PFIC, which will be taxed as long-term capital gain to such U.S. Holder, and (b) the ordinary earnings of the Corporation and each Subsidiary PFIC, which will be taxed as ordinary income to such U.S. Holder. Generally, net capital gain is the excess of (a) net long-term capital gain over (b) net short-term capital loss, and ordinary earnings are the excess of (a) earnings and profits over (b) net capital gain. A U.S. Holder that makes a QEF Election will be subject to U.S. federal income tax on such amounts for each taxable year in which the Corporation is a PFIC, regardless of whether such amounts are actually distributed to such U.S. Holder by the Corporation. However, a U.S. Holder that makes a QEF Election may, subject to certain limitations, elect to defer payment of current U.S. federal income tax on such amounts, subject to an interest charge. If such U.S. Holder is not a corporation, any such interest paid will be treated as personal interest, which is not deductible.

A U.S. Holder that makes a QEF Election generally (a) may receive a tax-free distribution from the Corporation to the extent that such distribution represents earnings and profits of the Corporation that were previously included in income by the U.S. Holder because of such QEF Election and (b) will adjust such U.S. Holder's tax basis in the Common Shares to reflect the amount included in income or allowed as a tax-free distribution because of such QEF Election. In addition, a U.S. Holder that makes a QEF Election generally will recognize capital gain or loss on the sale

or other taxable disposition of our Common Shares.

The procedure for making a QEF Election, and the U.S. federal income tax consequences of making a QEF Election, will depend on whether such QEF Election is timely. A QEF Election will be treated as timely if such QEF Election is made for the first year in the U.S. Holder's holding period for the Common Shares in which the

S-17

Table of Contents

Corporation was a PFIC. A U.S. Holder may make a timely QEF Election by filing the appropriate QEF Election documents at the time such U.S. Holder files a U.S. federal income tax return for such first year in respect of the Corporation and each Subsidiary PFIC, if any. However, if the Corporation was a PFIC in a prior year, then in addition to filing the QEF Election documents, a U.S. Holder must elect to recognize (a) gain (which will be taxed under the rules of Section 1291 of the Code discussed above) as if the Common Shares were sold on the qualification date or (b) if the Corporation were also a controlled foreign corporation under the meaning of Section 957 of the Code, such U.S. Holder's pro rata share of the post-1986 earnings and profits of the Corporation as of the qualification date. The qualification date is the first day of the first taxable year in which the Corporation was a QEF with respect to such U.S. Holder. The election to recognize such gain or earnings and profits can only be made if such U.S. Holder's holding period for the Common Shares includes the qualification date. By electing to recognize such gain or earnings and profits, such U.S. Holder will be deemed to have made a timely QEF Election. In addition, under very limited circumstances, a U.S. Holder may make a retroactive QEF Election if such U.S. Holder failed to file the QEF Election documents in a timely manner.

A QEF Election will apply to the taxable year for which such QEF Election is made and to all subsequent taxable years, unless such QEF Election is invalidated or terminated or the IRS consents to revocation of such QEF Election. If a U.S. Holder makes a QEF Election and, in a subsequent taxable year, the Corporation ceases to be a PFIC, the QEF Election will remain in effect (although it will not be applicable) during those taxable years in which the Corporation is not a PFIC. Accordingly, if the Corporation becomes a PFIC in another subsequent taxable year, the QEF Election will be effective and the U.S. Holder will be subject to the QEF rules described above during any such subsequent taxable year in which the Corporation qualifies as a PFIC. In addition, the QEF Election will remain in effect (although it will not be applicable) with respect to a U.S. Holder even after such U.S. Holder disposes of all of such U.S. Holder's direct and indirect interest in the Common Shares. Accordingly, if such U.S. Holder reacquires an interest in the Corporation, such U.S. Holder will be subject to the QEF rules described above for each taxable year in which the Corporation is a PFIC.

However, under Treasury Regulations, if a U.S. Holder holds an option, warrant or other right to acquire stock of a PFIC, the holding period with respect to shares of stock of the PFIC acquired upon exercise of such option, warrant or other right shall include the period that the option, warrant or other right was held. Thus, U.S. Holders will be treated as having held Common Shares received on exercise of Warrants for the entire period during which the Warrants were held. In order to be effective with respect to the Common Shares, a QEF Election would have to be made for the first year in which the U.S. Holder's holding period for the shares begins, however, under applicable rules, a U.S. Holder will not be able to make a QEF Election that would apply to a Warrant or the Common Share that may be received on exercise of a Warrant. The general effect of these Treasury Regulations is that (a) under the special taxation rules for PFICs discussed above, excess distributions and gains realized on the disposition of Common Shares received upon exercise of Warrants will be spread over the entire holding period for the Warrants and the Common Shares received on their exercise and (b) even if a U.S. Holder makes a QEF Election upon exercise of Warrants and receipt of the Common Shares, that election generally will not be a timely and effective QEF Election with respect to the Common Shares received on exercise. Thus, the default PFIC rules discussed above will continue to apply. However, a U.S. Holder receiving Common Shares upon exercise of a warrant generally will be eligible to make an effective QEF Election as of the first day of the taxable year of such U.S. Holder beginning after the receipt of such Common Shares if such U.S. Holder also makes an election to recognize gain (which will be taxed under the PFIC rules described above) as if such Common Shares were sold on such date at fair market value. In addition, under the Treasury Regulations, a disposition, other than by exercise, of a warrant generally will be subject to the special taxation rules for PFICs discussed above.

The Corporation will make available to U.S. Holders, upon their written request, timely and accurate information as to its status as a PFIC, and will provide to a U.S. Holder all information and documentation that a U.S. Holder making a QEF Election with respect to the Corporation is required to obtain for U.S. federal income tax purposes. However,

U.S. Holders should be aware that the Corporation can provide no assurances that it will provide any such information relating to any Subsidiary PFIC. Because the Company may own shares in one or more Subsidiary PFICs, and may acquire shares in one or more Subsidiary PFICs in the future, they will continue to be subject to the rules discussed above with respect to the taxation of gains and excess distributions with respect to any Subsidiary PFIC for which the U.S. Holders do not obtain the required information. Each U.S. Holder should

S-18

Table of Contents

consult his, her or its own tax advisor regarding the availability of, and procedure for making, a QEF Election with respect to the Company and any Subsidiary PFIC.

Mark-to-Market Election

A U.S. Holder may make a Mark-to-Market Election only if the Common Shares are marketable stock. The Common Shares generally will be marketable stock if the Common Shares are regularly traded on (a) a national securities exchange that is registered with the Securities and Exchange Commission, (b) the national market system established pursuant to section 11A of the Securities and Exchange Act of 1934, or (c) a foreign securities exchange that is regulated or supervised by a governmental authority of the country in which the market is located, provided that (i) such foreign exchange has trading volume, listing, financial disclosure, and other requirements and the laws of the country in which such foreign exchange is located, together with the rules of such foreign exchange, ensure that such requirements are actually enforced and (ii) the rules of such foreign exchange ensure active trading of listed stocks.

A U.S. Holder that makes a Mark-to-Market Election generally will not be subject to the rules of Section 1291 of the Code discussed above. However, if a U.S. Holder makes a Mark-to-Market Election after the beginning of such U.S. Holder's holding period for the Common Shares and such U.S. Holder has not made a timely QEF Election, the rules of Section 1291 of the Code discussed above will apply to certain dispositions of, and distributions on, the Common Shares.

A U.S. Holder that makes a Mark-to-Market Election will include in ordinary income, for each taxable year in which the Corporation is a PFIC, an amount equal to the excess, if any, of (a) the fair market value of the Common Shares as of the close of such taxable year over (b) such U.S. Holder's tax basis in such Common Shares. A U.S. Holder that makes a Mark-to-Market Election will be allowed a deduction in an amount equal to the lesser of (a) the excess, if any, of (i) such U.S. Holder's adjusted tax basis in the Common Shares over (ii) the fair market value of such Common Shares as of the close of such taxable year or (b) the excess, if any, of (i) the amount included in ordinary income because of such Mark-to-Market Election for prior taxable years over (ii) the amount allowed as a deduction because of such Mark-to-Market Election for prior taxable years.

A U.S. Holder that makes a Mark-to-Market Election generally also will adjust such U.S. Holder's tax basis in the Common Shares to reflect the amount included in gross income or allowed as a deduction because of such Mark-to-Market Election. In addition, upon a sale or other taxable disposition of our Common Shares, a U.S. Holder that makes a Mark-to-Market Election will recognize ordinary income or loss (not to exceed the excess, if any, of (a) the amount included in ordinary income because of such Mark-to-Market Election for prior taxable years over (b) the amount allowed as a deduction because of such Mark-to-Market Election for prior taxable years).

A Mark-to-Market Election applies to the taxable year in which such Mark-to-Market Election is made and to each subsequent taxable year, unless the Common Shares cease to be marketable stock or the IRS consents to revocation of such election. Each U.S. Holder should consult its own tax advisor regarding the availability of, and procedure for making, a Mark-to-Market Election.

Although a U.S. Holder may be eligible to make a Mark-to-Market Election with respect to the Common Shares, no such election may be made with respect to the stock of any Subsidiary PFIC that such U.S. Holder is treated as owning because such stock is not marketable. Hence, the Mark-to-Market Election will not be effective to eliminate the interest charge described above.

Other PFIC Rules

Under Section 1291(f) of the Code, the IRS has issued proposed Treasury Regulations that, subject to certain exceptions, would cause a U.S. Holder that had not made a timely QEF Election to recognize gain (but not loss) upon certain transfers of Common Shares that would otherwise be tax-deferred (e.g., gifts and exchanges pursuant to corporate reorganizations). However, the specific U.S. federal income tax consequences to a U.S. Holder may vary based on the manner in which Common Shares are transferred.

Certain additional adverse rules will apply with respect to a U.S. Holder if the Corporation is a PFIC, regardless of whether such U.S. Holder makes a QEF Election. For example under Section 1298(b)(6) of the Code, a

Table of Contents

U.S. Holder that uses Common Shares as security for a loan will, except as may be provided in Treasury Regulations, be treated as having made a taxable disposition of such Common Shares.

The PFIC rules are complex, and each U.S. Holder should consult its own tax advisor regarding the PFIC rules and how the PFIC rules may affect the U.S. federal income tax consequences of the acquisition, ownership, and disposition of Common Shares.

RISK FACTORS

Prospective purchasers of Common Shares should consider carefully the risk factors set out herein and contained in and incorporated by reference in the accompanying base shelf prospectus. Discussions of certain risks affecting Oncolytics in connection with its business are provided in our annual disclosure documents filed with the various securities regulatory authorities which are incorporated by reference in the accompanying base shelf prospectus.

Barbados law differs from the laws in effect in Canada and may afford less protection to holders of our securities.

Certain of our assets and intellectual property are held by our wholly-owned subsidiary, Oncolytics Barbados, which is organized under the laws of Barbados. It may not be possible to enforce court judgments obtained in Canada against Oncolytics Barbados in Barbados based on the civil liabilities provisions of applicable securities laws. In addition, there is some doubt as to whether the courts of Barbados would recognize or enforce judgments of Canadian courts obtained against us or our directors or officers based on the civil liabilities provisions of Canadian securities laws or hear actions against us or those persons based on such laws.

Changes in law could adversely affect our business and corporate structure.

There can be no assurances that there will not occur changes in corporate, tax, property and other laws in Canada and/or Barbados (or the interpretation thereof by regulatory or tax authorities) which may materially and adversely affect our businesses and corporate structure.

LEGAL MATTERS AND INTEREST OF EXPERTS

The auditors of the Corporation are Ernst & Young LLP, Chartered Accountants, 1000, 440 2nd Avenue S.W., Calgary, Alberta, T2P 5E9. Ernst & Young LLP is independent of Oncolytics in accordance with the Rules of Professional Conduct as outlined by the Institute of Chartered Accountants of Alberta. Ernst & Young LLP is registered with the U.S. Public Company Accounting Oversight Board.

Certain legal matters relating to offering of the Common Shares issuable from time to time on the exercise of the Warrants will be passed upon by Bennett Jones LLP with respect to certain Canadian legal matters and by Dorsey & Whitney LLP with respect to certain U.S. legal matters on behalf of the Corporation. As at the date hereof, the partners and associates of Bennett Jones LLP, as a group, and the partners and associates of Dorsey & Whitney LLP, as a group, each beneficially own directly or indirectly, less than 1% of the Common Shares.

In addition, none of the aforementioned persons or firms, nor any director, officer or employee of any of the aforementioned persons or firms is or is expected to be elected, appointed or employed as a director, officer or employee of the Corporation or any associate or affiliate of the Corporation.

Table of Contents

Base Shelf Prospectus

This short form prospectus has been filed under legislation in each of the provinces of British Columbia, Alberta, Manitoba and Ontario that permits certain information about these securities to be determined after this short form prospectus has become final and that permits the omission from this short form prospectus of that information. The legislation requires the delivery to purchasers of a prospectus supplement containing the omitted information within a specified period of time after agreeing to purchase any of these securities.

This short form prospectus constitutes a public offering of these securities only in those jurisdictions where they may be lawfully offered for sale and therein only by persons permitted to sell such securities. No securities regulatory authority has expressed an opinion about these securities and it is an offence to claim otherwise.

Information has been incorporated by reference in this short form prospectus from documents filed with securities commissions or similar authorities in Canada. Copies of the documents incorporated herein by reference may be obtained on request without charge from the Corporate Secretary of Oncolytics Biotech Inc. at 210, 1167 Kensington Crescent N.W., Calgary, Alberta T2N 1X7 telephone (403) 670-7377, and are available electronically at www.sedar.com. See Documents Incorporated by Reference .

Final Short Form Prospectus

New Issue

Dated June 16, 2008

Cdn. \$150,000,000

**Common Shares
Subscription Receipts
Warrants
Debt Securities
Units**

We may from time to time during the 25-month period that this prospectus (the **Prospectus**), including any amendments, remains valid, sell under this Prospectus up to Cdn. \$150,000,000 (or the equivalent in other currencies or currency units) aggregate initial offering price of our common shares (**Common Shares**), subscription receipts (**Subscription Receipts**), warrants to purchase Common Shares (**Warrants**), senior or subordinated unsecured debt securities (**Debt Securities**), and/or units comprised of one or more of the other securities described in this Prospectus in any combination, (**Units** and, together with the Common Shares, Subscription Receipts, Debt Securities and Warrants, the **Securities**). We may offer Securities in such amount and, in the case of the Subscription Receipts, Debt Securities, Warrants and Units, with such terms, as we may determine in light of market conditions. We may sell the Subscription Receipts, Debt Securities and Warrants in one or more series.

There are certain risk factors that should be carefully reviewed by prospective purchasers. See Risk Factors .

The specific variable terms of any offering of Securities will be set forth in a supplement to this Prospectus relating to such Securities (each, a **Prospectus Supplement**) including where applicable: (i) in the case of the Common Shares,

the number of Common Shares offered, the currency (which may be Canadian dollars or any other currency), the issue price and any other specific terms; (ii) in the case of Subscription Receipts, the number of Subscription Receipts offered, the currency (which may be Canadian dollars or any other currency), the issue price, the terms and procedures for the

Table of Contents

exchange of the Subscription Receipts and any other specific terms; (iii) in the case of Warrants, the designation, the number of Warrants offered, the currency (which may be Canadian dollars or any other currency), number of the Common Shares that may be acquired upon exercise of the Warrants, the exercise price, dates and periods of exercise, adjustment procedures and any other specific terms; (iv) in the case of Debt Securities, the designation, aggregate principal amount and authorized denominations of the Debt Securities, any limit on the aggregate principal amount of the Debt Securities, the currency (which may be Canadian dollars or any other currency), the issue price (at par, at a discount or at a premium), the issue and delivery date, the maturity date (including any provisions for the extension of a maturity date), the interest rate (either fixed or floating and, if floating, the method of determination thereof), the interest payment date(s), the provisions (if any) for subordination of the Debt Securities to other indebtedness, any redemption provisions, any repayment provisions, any terms entitling the holder to exchange or convert the Debt Securities into other securities and any other specific terms; and (v) in the case of Units, the designation, the number of Units offered, the offering price, the currency (which may be Canadian dollars or any other currency), terms of the Units and of the securities comprising the Units and any other specific terms.

We are permitted, as a foreign issuer in the United States, under a multi-jurisdictional disclosure system adopted by the United States and Canada, to prepare this Prospectus in accordance with Canadian disclosure requirements. You should be aware that such requirements are different from those of the United States. We have prepared our financial statements included or incorporated herein by reference in accordance with Canadian generally accepted accounting principles, and they are subject to Canadian auditing and auditor independence standards. Thus, they may not be comparable to the financial statements of United States companies. Information regarding the impact upon our financial statements of significant differences between Canadian and United States generally accepted accounting principles is contained in the notes to the financial statements incorporated by reference in this Prospectus.

You should be aware that the purchase of the Securities may have tax consequences both in the United States and Canada. Such consequences for investors who are resident in, or citizens of, the United States may not be described fully herein. You should read the tax discussion contained in the applicable Prospectus Supplement with respect to a particular offering of securities. See Certain Income Tax Considerations .

Your ability to enforce civil liabilities under United States federal securities laws may be affected adversely by the fact that we are incorporated under the laws of Canada, the majority of our officers and directors and some of the experts named in this Prospectus are residents of Canada, and a substantial portion of our assets and the assets of such persons are located outside the United States.

NEITHER THE UNITED STATES SECURITIES AND EXCHANGE COMMISSION (THE SEC) NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED THESE SECURITIES NOR PASSED UPON THE ACCURACY OR ADEQUACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENCE.

All shelf information permitted under applicable laws to be omitted from this Prospectus will be contained in one or more Prospectus Supplements that will be delivered to purchasers together with this Prospectus. Each Prospectus Supplement will be incorporated by reference into this Prospectus for the purposes of securities legislation as of the date of the Prospectus Supplement and only for the purposes of the distribution of the Securities to which the Prospectus Supplement pertains.

Our outstanding securities are listed for trading on the Toronto Stock Exchange under the trading symbol **ONC** and on the NASDAQ Capital Market under the trading symbol **ONCY** . Unless otherwise specified in any applicable Prospectus Supplement, the Subscription Receipts, Warrants, Debt Securities, and Units will not be listed on any securities exchange. **There is no market through which the Subscription Receipts, Warrants, Debt Securities or**

Units may be sold and purchasers may not be able to resell the Subscription Receipts, Warrants, Debt Securities or Units purchased under this Prospectus. This may affect the pricing of these securities in the secondary market, the transparency and availability of trading prices, the liquidity of the securities, and the extent of issuer regulation. See the Risk Factors section of the applicable Prospectus Supplement.

Table of Contents

We may sell the Securities to or through underwriters, dealers, placement agents or other intermediaries or directly to purchasers or through agents. See Plan of Distribution . The Prospectus Supplement relating to a particular offering of Securities will identify each person who may be deemed to be an underwriter with respect to such offering and will set forth the terms of the offering of such Securities, including, to the extent applicable, the initial public offering price, the proceeds that we will receive, the underwriting discounts or commissions and any other discounts or concessions to be allowed or reallocated to dealers. The managing underwriter or underwriters with respect to Securities sold to or through underwriters, if any, will be named in the related Prospectus Supplement.

Subject to applicable securities legislation, in connection with any offering of Securities under this Prospectus, the underwriters, if any, may over-allot or effect transactions which stabilize or maintain the market price of the Securities offered at a level above that which might otherwise prevail in the open market. These transactions, if commenced, may be discontinued at any time. See Plan of Distribution .

You should rely only on the information contained in this Prospectus. We have not authorized anyone to provide you with information different from that contained in this Prospectus.

Our head office and principal place of business is located at 210, 1167 Kensington Crescent N.W., Calgary, Alberta T2N 1X7. Our registered office is located at 4500 Bankers Hall East, 855 2nd Street S.W., Calgary, Alberta T2P 4K7.

TABLE OF CONTENTS

	Page
<u>DEFINITIONS AND OTHER MATTERS</u>	1
<u>SPECIAL NOTICE REGARDING FORWARD-LOOKING STATEMENTS</u>	1
<u>DOCUMENTS INCORPORATED BY REFERENCE</u>	2
<u>WHERE YOU CAN FIND ADDITIONAL INFORMATION</u>	3
<u>ENFORCEABILITY OF CIVIL LIABILITIES</u>	3
<u>RISK FACTORS</u>	4
<u>ONCOLYTICS BIOTECH INC.</u>	9
<u>OUR BUSINESS</u>	10
<u>RECENT DEVELOPMENTS</u>	11
<u>USE OF PROCEEDS</u>	13
<u>CAPITALIZATION</u>	13
<u>PRIOR SALES</u>	13
<u>DESCRIPTION OF SHARE CAPITAL</u>	13
<u>DESCRIPTION OF SUBSCRIPTION RECEIPTS</u>	14
<u>DESCRIPTION OF WARRANTS</u>	14
<u>DESCRIPTION OF DEBT SECURITIES</u>	15
<u>DESCRIPTION OF UNITS</u>	17
<u>MARKET FOR SECURITIES</u>	18
<u>PLAN OF DISTRIBUTION</u>	19
<u>CERTAIN INCOME TAX CONSIDERATIONS</u>	20
<u>LEGAL MATTERS</u>	20
<u>AUDITOR</u>	20
<u>DOCUMENTS FILED AS PART OF THE REGISTRATION STATEMENT</u>	20
<u>PURCHASERS' STATUTORY RIGHTS</u>	20

DEFINITIONS AND OTHER MATTERS

In this Prospectus and any Prospectus Supplement, unless otherwise indicated, references to we, us, our, Oncolytics the Corporation are to Oncolytics Biotech Inc. All references to dollars, Cdn.\$ or \$ are to Canadian dollars and all references to U.S.\$ are to United States dollars. Unless otherwise indicated, all financial information included and incorporated by reference in this Prospectus and any Prospectus Supplement is determined using Canadian generally accepted accounting principles.

We prepare our financial statements in accordance with Canadian generally accepted accounting principles (**Canadian GAAP**), which differ from United States generally accepted accounting principles (**U.S. GAAP**). Therefore, our financial statements incorporated by reference in this Prospectus and any Prospectus Supplement and in the documents incorporated by reference in this Prospectus and in any applicable Prospectus Supplement may not be comparable to financial statements prepared in accordance with U.S. GAAP. You should refer to Note 21 of our financial statements for the year ended December 31, 2007 for a discussion of the principal differences between our financial results determined under Canadian GAAP and under U.S. GAAP. For our financial statements as at and for the three months ended March 31, 2008, you should refer to our reconciliation of our financial statements as at and for the three months ended March 31, 2008 to U.S. GAAP furnished to the SEC on the Company's Current Report on Form 6-K dated June 4, 2008 and incorporated into this Prospectus by reference. See Documents Incorporated by

Reference .

SPECIAL NOTICE REGARDING FORWARD-LOOKING STATEMENTS

Some of the statements that we make contain forward-looking statements reflecting our current beliefs, plans, estimates and expectations. Readers are cautioned that these forward-looking statements involve risks and uncertainties, including, without limitation, clinical trial study delays, product development delays, our ability to attract and retain

Table of Contents

business partners, future levels of government funding, competition from other biotechnology companies and our ability to obtain the capital required for research, product development, operations and marketing. These factors should be carefully considered and readers should not place undue reliance on our forward-looking statements. Actual events may differ materially from our current expectations due to risks and uncertainties.

Our statements of belief, estimates, expectations and other similar statements are based primarily upon our results derived to date from our research and development program with animals and early stage human results and upon which we believe we have a reasonable scientific basis to expect the particular results to occur. It is not possible to predict, based upon studies in animals or early stage human results, whether a new therapeutic will be proved to be safe and effective in humans. There can be no assurance that the particular result expected by us will occur. Except as required by applicable securities laws, we undertake no obligation to update publicly any forward-looking statements for any reason after the date of this Prospectus or to conform these statements to actual results or to changes in our expectations.

DOCUMENTS INCORPORATED BY REFERENCE

Information has been incorporated by reference in this Prospectus from documents filed with securities commissions or similar authorities in Canada. Copies of the documents incorporated herein by reference may be obtained on request without charge from our Corporate Secretary at 210, 1167 Kensington Crescent N.W., Calgary, Alberta T2N 1X7 telephone (403) 670-7377, and are available electronically at www.sedar.com.

We have filed the following documents with the securities commissions or similar regulatory authorities in certain of the provinces of Canada and such documents are specifically incorporated by reference in this Prospectus:

our Renewal Annual Information Form dated March 5, 2008, for the year ended December 31, 2007 (the **AIF**);

our Management Proxy Circular dated March 23, 2007 relating to the annual and special meeting of shareholders held on May 2, 2007;

our Management Proxy Circular dated March 20, 2008 relating to the annual and special meeting of shareholders held on May 7, 2008;

our audited financial statements, together with the notes thereto, for the years ended December 31, 2007 and 2006 and the auditors' report thereon addressed to our shareholders;

our management's discussion and analysis of financial condition and results of operations dated March 5, 2008, for the year ended December 31, 2007;

our unaudited interim consolidated financial statements as at and for the three months ended March 31, 2008, together with the notes thereto;

our management's discussion and analysis of financial condition and results of operations dated April 30, 2008, for the three months ended March 31, 2008; and

the reconciliation of our consolidated financial statements as at and for the three months ended March 31, 2008 to U.S. GAAP, filed on June 3, 2008 under the heading **Other**.

Any documents of the type required by National Instrument 44-101 Short Form Prospectus Distributions of the Canadian Securities Administrators to be incorporated by reference in a short form prospectus, including any annual information form, comparative annual financial statements and the auditors report thereon, comparative interim financial statements, management s discussion and analysis of financial condition and results of operations, material change report (except a confidential material change report), business acquisition report and information circular, if filed by us with the securities commissions or similar authorities in the provinces of Canada after the date of this Prospectus shall be deemed to be incorporated by reference in this Prospectus.

Any report filed by us with the SEC pursuant to section 13(a), 13(c), 14 or 15(d) of the United States Securities Exchange Act of 1934 after the date of this Prospectus shall be deemed to be incorporated by reference into the registration statement of which this Prospectus forms a part, if and to the extent expressly provided in such report.

Any statement contained in this Prospectus or in a document incorporated or deemed to be incorporated by reference herein will be deemed to be modified or superseded for purposes of this Prospectus to the extent that a statement contained in this Prospectus or in any other subsequently filed document which also is, or is deemed to be, incorporated by reference into this Prospectus modifies or supersedes that statement. The modifying or superseding statement need not state that it has modified or superseded a prior statement or include any other

Table of Contents

information set forth in the document that it modifies or supersedes. The making of a modifying or superseding statement shall not be deemed an admission for any purposes that the modified or superseded statement when made, constituted a misrepresentation, an untrue statement of a material fact or an omission to state a material fact that is required to be stated or that is necessary to make a statement not misleading in light of the circumstances in which it was made. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute part of this Prospectus.

Upon a new annual information form and related audited annual financial statements and management's discussion and analysis being filed by us with, and where required, accepted by, the securities commission or similar regulatory authority in each of the provinces of British Columbia, Alberta, Manitoba and Ontario during the term of this Prospectus, the previous annual information form, the previous audited annual financial statements and related management's discussion and analysis, all unaudited interim financial statements and related management's discussion and analysis, material change reports and business acquisition reports filed prior to the commencement of our financial year in which the new annual information form and related audited annual financial statements and management's discussion and analysis are filed shall be deemed no longer to be incorporated into this Prospectus for purposes of future offers and sales of Securities under this Prospectus. Upon new interim financial statements and related management's discussion and analysis being filed by us with the securities commission or similar regulatory authority in each of the provinces of British Columbia, Alberta, Manitoba and Ontario during the term of this Prospectus, all interim financial statements and related management's discussion and analysis filed prior to the new interim consolidated financial statements and related management's discussion and analysis shall be deemed no longer to be incorporated into this Prospectus for purposes of future offers and sales of Securities under this Prospectus. Upon a new information circular relating to an annual meeting of holders of Common Shares being filed by us with the securities commission or similar regulatory authority in each of the provinces of British Columbia, Alberta, Manitoba and Ontario during the term of this Prospectus, the information circular for the preceding annual meeting of holders of Common Shares shall be deemed no longer to be incorporated into this Prospectus for purposes of future offers and sales of Securities under this Prospectus.

One or more Prospectus Supplements containing the specific variable terms for an issue of the Securities and other information in relation to such Securities will be delivered to purchasers of such Securities together with this Prospectus and will be deemed to be incorporated by reference into this Prospectus as of the date of the Prospectus Supplement solely for the purposes of the offering of the Securities covered by any such Prospectus Supplement.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form F-10 relating to the Securities. This Prospectus, which constitutes a part of the registration statement, does not contain all of the information contained in the registration statement, certain items of which are contained in the exhibits to the registration statement as permitted by the rules and regulations of the SEC.

We file annual and quarterly financial information and material change reports and other material with the SEC and with the securities commissions or similar regulatory authorities in Canada. Under a multi-jurisdictional disclosure system adopted by the United States, documents and other information that we file with the SEC may be prepared in accordance with the disclosure requirements of Canada, which are different from those of the United States. You may read and copy any document that we have filed with the SEC at the SEC's public reference rooms in Washington, D.C. and Chicago, Illinois. You may also obtain copies of those documents from the public reference room of the SEC at 100 F Street, N.E., Washington, D.C. 20549 by paying a fee. You should call the SEC at 1-800-SEC-0330 or access its website at www.sec.gov for further information about the public reference rooms. You may read and download some of the documents we have filed with the SEC's Electronic Data Gathering and Retrieval system at www.sec.gov. You may read and download any public document that we have filed with the securities commissions or similar

regulatory authorities in Canada at www.sedar.com.

ENFORCEABILITY OF CIVIL LIABILITIES

We are a corporation existing under the *Business Corporations Act* (Alberta). The majority of our officers and directors and some of the experts named in this Prospectus, are residents of Canada or otherwise reside outside the United States, and all, or a substantial portion of their assets and a substantial portion of our assets, are located outside the United States. We have appointed an agent for service of process in the United States, but it may be difficult for holders of Securities who reside in the United States to effect service within the United States upon those directors, officers and

Table of Contents

experts who are not residents of the United States. It may also be difficult for holders of Securities who reside in the United States to realize in the United States upon judgments of courts of the United States predicated upon our civil liability and the civil liability of our directors, officers and experts under the United States federal securities laws. We have been advised by our Canadian counsel, Bennett Jones LLP, that a judgment of a United States court predicated solely upon civil liability under United States federal securities laws would probably be enforceable in Canada if the United States court in which the judgment was obtained has a basis for jurisdiction in the matter that would be recognized by a Canadian court for the same purposes. We have also been advised by Bennett Jones LLP, however, that there is substantial doubt whether an action could be brought in Canada in the first instance on the basis of liability predicated solely upon United States federal securities laws.

We filed with the SEC, concurrently with our registration statement on Form F-10, an appointment of agent for service of process on Form F-X. Under the Form F-X, we appointed DL Services, Inc. at 1420, Fifth Avenue, Suite 3400, Seattle, Washington 98101 as our agent for service of process in the United States in connection with any investigation or administrative proceeding conducted by the SEC, and any civil suit or action brought against or involving us in a United States court arising out of or related to or concerning the offering of the Securities under this Prospectus.

RISK FACTORS

A prospective purchaser of Securities should carefully consider the list of risk factors set forth below as well as the other information contained in and incorporated by reference in this Prospectus before purchasing our Securities.

All of our potential products, including REOLYSIN[®], are in the research and development stage and will require further development and testing before they can be marketed commercially.

Prospects for companies in the biotechnology industry generally may be regarded as uncertain given the nature of the industry and, accordingly, investments in biotechnology companies should be regarded as speculative. We are currently in the research and development stage on one product, REOLYSIN[®], for human application, the riskiest stage for a company in the biotechnology industry. It is not possible to predict, based upon studies in animals and early stage human clinical trials whether REOLYSIN[®] will prove to be safe and effective in humans. REOLYSIN[®] will require additional res