SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 6-K

Report of Foreign Private Issuer

Pursuant to Rule 13a-16 or 15d-16
of the Securities Exchange Act of 1934

For the month of January 2025

Commission File Number 001-38512

Oncolytics Biotech Inc.

(Translation of registrant's name into English)

Suite 804, 322 11th Avenue SW
Calgary, Alberta, Canada T2R 0C5

(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F þ Form 40-F o

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1): o

Note: Regulation S-T Rule 101(b)(1) only permits the submission in paper of a Form 6-K if submitted solely to provide an attached annual report to security holders.

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7): o

Note: Regulation S-T Rule 101(b)(7) only permits the submission in paper of a Form 6-K if submitted to furnish a report or other document that the registrant foreign private issuer must furnish and make public under the laws of the jurisdiction in which the registrant is incorporated, domiciled or legally organized (the registrant's “home country”), or under the rules of the home country exchange on which the registrant's securities are traded, as long as the report or other document is not a press release, is not required to be and has not been distributed to the registrant's security holders, and, if discussing a material event, has already been the subject of a Form 6-K submission or other Commission filing on EDGAR.

EXHIBIT NUMBER	DESCRIPTION
99.1	Press Release

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Oncolytics Biotech Inc.
(Registrant)

By: /s/ *Kirk Look*
Kirk Look
Chief Financial Officer

Date: January 22, 2025

Oncolytics Biotech® to Present Compelling New Efficacy and Safety Data in Anal and Pancreatic Cancers at 2025 ASCO GI Symposium

Pelareorep combination therapy shows continued meaningful improvement over checkpoint inhibitors alone in anal cancer patients

Pelareorep-based therapy demonstrates strong safety profile with new chemotherapy regimen in pancreatic cancer patients

SAN DIEGO, CA and CALGARY, AB, January 22, 2025 – Oncolytics Biotech® Inc. (NASDAQ: ONCY) (TSX: ONC), a leading clinical-stage company specializing in immunotherapy for oncology, today provided details from the abstracts featuring pelareorep that are being presented at the 2025 American Society of Clinical Oncology (ASCO) Gastrointestinal Cancers Symposium in San Francisco January 23-25, 2025.

Thomas Heineman, M.D., Ph.D., Chief Medical Officer for Oncolytics Biotech, commented, “The posters that will be presented at the symposium later this week continue to show pelareorep’s compelling potential in gastrointestinal cancers. In relapsed anal cancer, the efficacy signal that was initially reported continues to outperform historical control trials with the inclusion of additional patients. Importantly, the complete response we observed previously continued beyond the 12 months initially reported. Together, these results point to a clinically meaningful synergy between pelareorep and checkpoint inhibitors like atezolizumab. In pancreatic cancer, pelareorep previously demonstrated a strong efficacy signal when administered with gemcitabine, nab-paclitaxel and atezolizumab. Our new safety data indicate its ability to also be combined with modified FOLFIRINOX, thus expanding its potential to benefit patients with metastatic pancreatic cancer. We will continue to provide updates on the safety and efficacy of pelareorep-based combination therapy from these cohorts as they become available.”

“I am quite pleased by these recent updates from the GOBLET study as they continue to provide potential new treatment options for patients in need of alternatives while maintaining a manageable safety profile,” said Dirk Arnold, M.D., Ph.D., Director of Asklepios Tumorzentrum Hamburg, and primary investigator of the GOBLET trial. “I’ve been especially impressed with the ability of pelareorep-based therapies to work across multiple challenging cancer indications and with multiple standards of care, including chemotherapy and checkpoint inhibitors, so I look forward to additional data readouts that can help improve the treatment paradigm.”

Abstract Number: 6
Title: GOBLET platform study: Preliminary safety and tumor response results for the relapsed anal carcinoma cohort in patients treated with pelareorep and atezolizumab.
Presentation Type: Poster
Session Title: Poster Session C: Cancers of the Colon, Rectum, and Anus
Session Date and Time: January 25, 2025, 7:00 - 7:55 a.m. PT

The fourth cohort of the GOBLET study is evaluating pelareorep combined with the checkpoint inhibitor atezolizumab in patients with second-line or later unresectable squamous cell carcinoma of the anal canal (SCCA). The treatment combination met the pre-defined efficacy success criteria for Stage 1 of its Simon two-stage design, and Stage 2 enrollment of 18 additional evaluable patients has begun. Updated results from this cohort show that four of twelve evaluable patients achieved a partial response for an objective response rate of 33%. This includes one patient with a prolonged complete response that persisted for over 15 months. This is notable because historical response rates to checkpoint inhibitor monotherapy are

low, generally 10-24%[1-3]. There continue to be no safety concerns with the treatment regimen. At treatment cycle four, tumor-infiltrating lymphocyte (TIL) clonal expansion has been observed in the three responding patients for which data is available. It is anticipated that the additional data from Stage 2 of this cohort will provide a sufficiently strong efficacy signal to move this treatment regimen into a registration-enabling study.

Abstract Number: 730
Title: GOBLET study: Results of the safety run-in for first-line metastatic pancreatic ductal adenocarcinoma (PDAC) patients treated with pelareorep + modified FOLFIRINOX +/- atezolizumab.
Presentation Type: Poster
Session Title: Poster Session B: Cancers of the Pancreas, Small Bowel, and Hepatobiliary Tract
Session Date and Time: January 24, 2025, 11:30 a.m. – 1:00 p.m. PT

A promising efficacy signal in metastatic pancreatic ductal adenocarcinoma (PDAC) was previously observed for the combination of pelareorep, gemcitabine, nab-paclitaxel, and atezolizumab. To expand the potential of pelareorep to benefit PDAC patients, and after discussion with key opinion leaders, a cohort was added to the GOBLET study to evaluate pelareorep combined with modified FOLFIRINOX (mFOLFIRINOX) both with and without atezolizumab. This cohort is being funded by a US$5 million grant from the Pancreatic Cancer Action Network (PanCAN). The three-patient safety run-in for each treatment arm has completed enrollment, and patients have completed the necessary evaluation period. The safety data have been reviewed by the Data Safety Monitoring Board (DSMB) and Paul Ehrlich Institute (PEI), Germany's medical regulatory body, and they have recommended patient enrollment continue without modification.

Abstracts from the ASCO Gastrointestinal Cancers Symposium are currently available on the event website, which can be accessed by clicking here.

References

1. Rao S, et al. Phase II study of retifanlimab in patients (pts) with squamous carcinoma of the anal canal (SCAC) who progressed following platinum-based chemotherapy. Annals of Oncology. 2020 September. doi: https://doi.org/10.1016/j.annonc.2020.08.2272.
2. Marabelle A, et al. Pembrolizumab for previously treated advanced anal squamous cell carcinoma: results from the non-randomised, multicohort, multicentre, phase 2 KEYNOTE-158 study. Lancet Gastroenterol Hepatol. 2022 May;7(5):446-454. doi: 10.1016/S2468-1253(21)00382-4.
3. Lonardi S, et al. Randomized phase II trial of avelumab alone or in combination with cetuximab for patients with previously treated, locally advanced, or metastatic squamous cell anal carcinoma: the CARACAS study. J Immunother Cancer. 2021 November;9(11):e002996. doi: 10.1136/jitc-2021-002996. PMID: 34815354; PMCID: PMC8611452.

About GOBLET

The GOBLET (**G**astrointestinal tum**O**rs exploring the treatment com**B**inations with the oncolytic reovirus pe**L**ar**E**orep and an**T**i-PD-L1) study is a phase 1/2 multiple indication study in advanced or metastatic gastrointestinal tumors. The study is being conducted at 17 centers in Germany and is being managed by AIO-Studien-gGmbH. The co-primary endpoints of the study are objective response rate (ORR) and/or disease control rate assessed at week 16 and safety. Key secondary and exploratory endpoints include additional efficacy assessments and evaluation of potential biomarkers. The study comprises five treatment groups:

1. Pelareorep in combination with atezolizumab, gemcitabine, and nab-paclitaxel in 1st line advanced/metastatic pancreatic cancer patients;

2. Pelareorep in combination with atezolizumab in 1st line MSI (microsatellite instability)-high metastatic colorectal cancer patients;

3. Pelareorep in combination with atezolizumab and TAS-102 in 3rd line metastatic colorectal cancer patients

4. Pelareorep in combination with atezolizumab in 2nd line advanced and unresectable anal cancer patients; and

5. Pelareorep in combination with mFOLFIRINOX with and without atezolizumab in newly diagnosed metastatic PDAC patients.

Any cohort meeting pre-specified efficacy criteria in Stage 1 may be advanced to Stage 2 and enroll additional patients.

About AIO
AIO-Studien-gGmbH (AIO) emerged from the study center of the medical oncology working group within the German Cancer Society (DKG). AIO operates with a non-profit purpose of promoting science and research with a focus on medical oncology. Since its foundation, AIO has become a successful sponsor and study management company and has established itself both nationally and internationally.

About Oncolytics Biotech Inc.
Oncolytics is a clinical-stage biotechnology company developing pelareorep, an intravenously delivered immunotherapeutic agent. Pelareorep has demonstrated promising results in two randomized Phase 2 studies in metastatic breast cancer and Phase 1 and 2 studies in pancreatic cancer. It acts by inducing anti-cancer immune responses and promotes an inflamed tumor phenotype -- turning "cold" tumors "hot" -- through innate and adaptive immune responses to treat a variety of cancers.

Pelareorep has demonstrated synergies with multiple approved oncology treatments. Oncolytics is currently conducting and planning combination clinical trials with pelareorep in solid malignancies as it advances towards registrational studies in metastatic breast cancer and pancreatic cancer, both of which have received Fast Track designation from the FDA. For further information, please visit: www.oncolyticsbiotech.com or follow the company on social media on LinkedIn and on X @oncolytics.

Tecentriq® (atezolizumab) is a registered trademark of Genentech, a member of the Roche Group.

This press release contains forward-looking statements, within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended and forward-looking information under applicable Canadian securities laws (such forward-looking statements and forward-looking information are collectively referred to herein as "forward-looking statements"). Forward-looking statements contained in this press release include statements regarding Oncolytics' belief as to the potential, mechanism of action and benefits of pelareorep as a cancer therapeutic; our plans to provide updates on the safety and efficacy of pelareorep-based combinations therapy; our expectation that additional data from the fourth cohort of our Stage 2 GOBLET study will provide a sufficiently strong efficacy signal to move the treatment regimen into a registration-enabling study; our plans to advance pelareorep to registration-enabling studies for the treatment of breast and pancreatic cancers; and other statements related to

anticipated developments in Oncolytics' business and technologies. In any forward-looking statement in which Oncolytics expresses an expectation or belief as to future results, such expectations or beliefs are expressed in good faith and are believed to have a reasonable basis, but there can be no assurance that the statement or expectation or belief will be achieved. Such forward-looking statements involve known and unknown risks and uncertainties, which could cause Oncolytics' actual results to differ materially from those in the forward-looking statements. Such risks and uncertainties include, among others, the availability of funds and resources to pursue research and development projects, the efficacy of pelareorep as a cancer treatment, the success and timely completion of clinical studies and trials, Oncolytics' ability to successfully commercialize pelareorep, uncertainties related to the research and development of pharmaceuticals, uncertainties related to the regulatory process and general changes to the economic environment. We may incur expenses or delays relating to events outside of our control, which could have a material adverse impact on our business, operating results and financial condition. Investors should consult Oncolytics' quarterly and annual filings with the Canadian and U.S. securities commissions for additional information on risks and uncertainties relating to the forward-looking statements. Investors are cautioned against placing undue reliance on forward-looking statements. The Company does not undertake any obligation to update these forward-looking statements, except as required by applicable laws.

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