

NEWS RELEASE

Onco-Innovations' Licensed Technology Shows Promise in Enhancing Chemotherapy Effectiveness by Overcoming Cancer Cell Resistance and Inhibiting Cancer Cell Repair

Vancouver, Canada – January 30, 2025 – Onco-Innovations Limited (CSE: **ONCO**) (Frankfurt: **W1H**, WKN: **A3EKSZ**) ("**Onco**" or the "**Company**") is pleased to provide information on its licensed technology of a new class of PNKP (Polynucleotide Kinase 3'-Phosphatase) inhibitors (the "**Technology**") which has demonstrated, in a study¹, the ability to enhance the efficacy of cancer killing inhibitors, known as topoisomerase I poisons, in certain cancer treatments. By enhancing cancer cells' sensitivity to topoisomerase I poisons, this breakthrough technology shows the potential, through further research and development, to one day improve patient outcomes across certain cancers by making chemotherapy more effective while also directly inhibiting cancer cells' ability to repair their own DNA. This innovation holds the potential to become a promising and important part of the expanding global cancer therapy market.²

"Our Technology aims to address a critical challenge, which is to overcome drug resistance in cancer treatment and stop cancer cells from being able to repair themselves. With the goal of enhancing the sensitivity of cancer cells to existing therapies, we believe we can continue moving towards improving patient outcomes. That is what drives us in our journey to transform cancer care as we position Onco-Innovations as a key player in a rapidly growing multi-billion-dollar market," said Thomas O'Shaughnessy, CEO of the Company.

Topoisomerase I poisons work by disrupting the DNA replication process in cells, a critical step for cell division. Normally, the enzyme Topoisomerase enzymes cleave the hypercoiled segments of DNA, relax the DNA strands, and then reattach the cleaved ends, thereby allowing the transcription to progress.³ When topoisomerase I poisons are introduced, they prevent the enzyme from reattaching cut ends, leading to breaks in the DNA that can cause cancer cells to die.⁴ However, the challenge with topoisomerase I poisons is that cancer cells can sometimes activate their DNA repair mechanisms to fix the breaks caused by these drugs, which can reduce the overall effectiveness of the treatment.⁵ This ability to repair the damage allows some cancer cells to survive and continue proliferating despite the therapy, leading to potential treatment resistance.⁶

¹ Front. Oncol., 22 December 2021 Sec. Cancer Molecular Targets and Therapeutics Volume 11 - 2021 | <https://doi.org/10.3389/fonc.2021.772920>

² <https://www.coherentmarketinsights.com/market-insight/cancer-therapy-market-5335>

³ "All tangled up: how cells direct, manage and exploit topoisomerase function" in Nat Rev Mol Cell Biol. 2011 Nov 23;12(12):827-41. doi: 10.1038/nrm3228. See Section [Type IA: single-stranded 'strand-passage' enzymes.](#)

⁴ Managing DNA's topology to keep genes active. Center for Cancer Research, National Cancer Institute. 2017. Available at: <https://ccr.cancer.gov/news/milestones-2017/article/managing-dnas-topology-keep-genes-active>.

⁵ "Topoisomerase I inhibition in colorectal cancer: biomarkers and therapeutic targets." *British journal of cancer* vol. 106,1 (2012): 18-24. doi:[10.1038/bjc.2011.498](https://doi.org/10.1038/bjc.2011.498)

⁶ "[Survival of the fittest: cancer stem cells in therapeutic resistance and angiogenesis.](#)" *Journal of clinical oncology: official journal of the American Society of Clinical Oncology* vol. 26,17 (2008): 2839-45.

Human polynucleotide kinase-phosphatase (PNKP) has been recognized as a crucial enzyme in the DNA repair process, particularly following damage caused by ionizing radiation (IR) or topoisomerase I poisons in multiple cancer types, including colorectal cancer (CRC). By targeting PNKP to make cancer cells more sensitive to these drugs, Onco-Innovations' Technology has shown promise in enhancing the effectiveness of these treatments, a therapeutic potential validated by various research groups⁷. This innovative approach holds the promise of one day potentially improving outcomes for patients undergoing cancer therapy. Unlike traditional treatments that often face limitations in targeting resistant cancer cell populations, the Technology has been shown in a study⁸ to directly inhibit cancer cells' ability to repair their own DNA, a critical factor in their survival.

Conventional treatments frequently fail for several reasons. Radiation therapy, for instance, struggles with poor target definition and can be less effective in tumors that lack sufficient oxygen (hypoxia). Chemotherapy, meanwhile, often faces challenges related to poor drug delivery or the body's inability to properly metabolize the treatment. In both cases, cancer cells are notoriously adept at evading destruction, whether by developing resistance, down-regulating pathways that promote cell death, or through the high sensitivity of normal tissues to these therapies. The ability of cancer cells to repair DNA damage inflicted by these treatments is one of the key factors that allows them to survive and continue proliferating despite ongoing therapy.⁹

Onco's novel Technology holds promise in treating tumors that have previously shown resistance to conventional therapies, potentially offering a more effective solution for patients who have exhausted existing options. Moreover, by selectively targeting cancer cells' repair systems, the Technology could potentially minimize the harmful effects on normal tissues, with the goal of further improving patient outcomes. We note that the Company's plans with respect to the Technology include pursuing U.S. Federal Drug Administration Phase I trials, with the aim of commencing the trials this year.

About Onco-Innovations Limited

Onco-Innovations is a Canadian-based company dedicated to cancer research and treatment, specializing in oncology. Onco's mission is to prevent and cure cancer through pioneering research and innovative solutions. The company has secured an exclusive worldwide license to patented groundbreaking technology that targets solid tumours, setting new standards in cancer treatment. Onco's commitment to excellence and innovation drives it to develop advanced therapies that improve patient outcomes and offer hope in the fight against cancer.

ON BEHALF OF ONCO-INNOVATIONS LIMITED,

"Thomas O'Shaughnessy"

Chief Executive Officer

For more information, please contact:

Thomas O'Shaughnessy

Chief Executive Officer

Tel: + 1 888 261 8055

investors@oncoinnovations.com

⁷ *Nano-Delivery of a Novel Inhibitor of Polynucleotide Kinase/Phosphatase (PNKP) for Targeted Sensitization of Colorectal Cancer to Radiation-Induced DNA Damage* in *Frontiers in Oncology*. Volume 11, 2021 Dec 22 11:772920

⁸ *Front. Oncol.*, 22 December 2021 *Sec. Cancer Molecular Targets and Therapeutics* Volume 11 - 2021 | <https://doi.org/10.3389/fonc.2021.772920>

⁹ *"Cancer chemotherapy and beyond: Current status, drug candidates, associated risks and progress in targeted therapeutics"* in *Genes & Diseases*, Volume 10, Issue 4, July 2023: pp. 1367-1401

The CSE and Information Service Provider have not reviewed and do not accept responsibility for the accuracy or adequacy of this release.

Forward-Looking Statements Caution. This news release contains forward-looking statements relating to the further development, potential commercialization and benefits of the Technology, the Company's ability to submit and complete U.S. FDA trials, and the prospects of the Company, and the Company's business and plans generally, and other statements that are not historical facts. Forward-looking statements are often identified by terms such as "will", "may", "potential", "should", "anticipate", "expects" and similar expressions. All statements other than statements of historical fact, included in this release are forward-looking statements that involve risks and uncertainties. There can be no assurance that such statements will prove to be accurate and actual results and future events could differ materially from those anticipated in such statements. Important factors that could cause actual results to differ materially from the Company's expectations include the failure to further develop, prove out or commercialize the Technology, the failure to complete U.S. FDA clinical trials, the failure to receive regulatory approval in respect of the Technology, and other risks detailed from time to time in the filings made by the Company with securities regulators. The reader is cautioned that assumptions used in the preparation of any forward-looking information may prove to be incorrect. Events or circumstances may cause actual results to differ materially from those predicted, as a result of numerous known and unknown risks, uncertainties, and other factors, many of which are beyond the control of the Company. The reader is cautioned not to place undue reliance on any forward-looking information. Such information, although considered reasonable by management at the time of preparation, may prove to be incorrect and actual results may differ materially from those anticipated. Forward-looking statements contained in this news release are expressly qualified by this cautionary statement. The forward-looking statements contained in this news release are made as of the date of this news release and the Company will update or revise publicly any of the included forward-looking statements as expressly required by applicable law.