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OncoSec Presents Significant Advancements in Electroporation Technology for Immunotherapy

SAN DIEGO, June 28, 2016 /PRNewswire/ -- OncoSec Medical Incorporated ("OncoSec") (NASDAQ: ONCS), a company developing DNA-based intratumoral cancer immunotherapies, presented recent advancements in electroporation (gene electro-transfer) for immunotherapy in two poster presentations at the American Association for Cancer Research (AACR) Special Conference on Engineering and Physical Sciences in Oncology in Boston. New data related to OncoSec's Tissue-based Real-time Adaptive Controlled Electroporation (TRACE™) technology and helical integrated applicator (Helix™) showed that these technologies have the potential to reduce procedural frequency as well as enhance usability by physicians. Together, these novel technologies may improve a patient's experience to gene electro-transfer and improve therapeutic outcomes, which will help broaden the adoption of gene-electro transfer technologies in immunotherapy.

The TRACE™ and Helix™ technologies are central to OncoSec's next-generation device development and represent a significant advancement in electroporation technology. Existing electroporation systems apply fixed pulses, independent of tissue conditions, that are typically optimized by heuristics. The new TRACE™ technology brings together OncoSec's research and engineering efforts to adapt the pulses to tissue conditions in real time and detect when optimal conditions have been achieved to complete electroporation treatment. The new Helix™ applicator integrates engineering advancements to function synergistically with the TRACE™ technology. The TRACE™ and Helix™ technologies have the potential to improve delivery of new therapeutic agents and access a variety of new tumor types and locations.

"The new TRACE™ and Helix™ technologies are a testament to the expertise of OncoSec's engineering and research teams," said Punit Dhillon, President and CEO. "Electroporation is a powerful gene delivery tool, and we believe that these novel technologies are a breakthrough in the field of electroporation therapy. As we look beyond the proof-of-concept stage for our intratumoral immunotherapy programs, these advancements are a major step forward in being able to consistently deliver more advanced therapeutic agents with the potential to target multiple facets of tumor immune subversion."

TRACE™ Technology
The poster presentation entitled "Feedback Optimized Gene Electro-Transfer for Immunotherapy" highlights the efficacy of modulating pulse durations in real-time for the intratumoral delivery of plasmid DNA in mouse tumor models. OncoSec's generator incorporating TRACE™ technology was used to perform electroporation with electrochemical impedance spectroscopy feedback operating in a closed-loop configuration to optimize each pulse duration in real-time.

Preclinical studies demonstrated electroporation integrating TRACE™ technology is capable

of achieving maximum expression of reporter genes with minimal energy delivered. Based on these findings, it is hypothesized that this technology will minimize collateral cell death and reduce treatment variability observed in patients. These findings represent a significant advancement in gene electro-transfer, because retaining the viability of transfected cells is critical for treatment success.

Helix™ Technology
The poster presentation entitled "A Novel Applicator for Endoscopic Gene Electro-Transfer" discusses the role of DNA dispersion during intratumoral gene delivery and its impact on gene electro-transfer efficiency. OncoSec researchers developed a single-helical injection needle that anchors the target tissue and delivers plasmid DNA. This achieves delivery of the plasmid to an area three times larger than that of a standard injection needle. Helix™ combines the helical needle with electroporation electrodes on a single applicator, which may enhance gene delivery by increasing surface area for tissue-DNA-electroporation interaction.

The Helix™ technology showed enhanced efficacy of IL-12 plasmid electroporation in an aggressive B16.F10 mouse melanoma model, significantly reducing tumor growth rate and increasing survival after a single treatment. The anchoring associated with the helical needle and the close proximity of the electrodes ensures co-localization of the electric field with the injected plasmid DNA as well as repeatable treatment of malleable tumors. In addition, the compact design of the electrodes and helical needle could make the applicator compatible with standard medical devices, including trocars, endoscopes, and other catheter based devices, thus enabling the application of intratumoral gene immunotherapy to a broad range of deep tissue cancers.

The poster presentations are available in thePublications section of OncoSec's website.

About OncoSec Medical Incorporated
OncoSec is a biotechnology company developing DNA-based intratumoral immunotherapies with an investigational technology, ImmunoPulse™, for the treatment of cancer. ImmunoPulse™ is designed to enhance the local delivery and uptake of DNA-based immune-targeting agents, such as IL-12. In Phase I and II clinical trials, ImmunoPulse™ IL-12 has demonstrated a favorable safety profile and evidence of anti-tumor activity in the treatment of various solid tumors and has shown the potential to reach beyond the site of local treatment to initiate a systemic immune response. OncoSec's lead program, ImmunoPulse™ IL-12, is currently in clinical development for several indications, including metastatic melanoma and triple-negative breast cancer. In addition to ImmunoPulse™ IL-12, the Company is also identifying and developing new immune-targeting agents for use with the ImmunoPulse™ platform. For more information, please visit www.oncosec.com.

Cautionary Note Regarding Forward-Looking Statements
This press release contains "forward-looking statements" within the meaning of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by words such as "potential," "may," "will," "can," "could," "understand," "intended," "designed," and similar references to future periods.

Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based on management's current preliminary expectations and are subject to risks and uncertainties, which may cause our results to differ materially

and adversely from the statements contained herein. Potential risks and uncertainties that could cause actual results to differ from those predicted include, among others, the following: uncertainties inherent in pre-clinical studies and clinical trials, such as the ability to enroll patients in clinical trials and the risk of adverse events; unexpected new data, safety and technical issues; our ability to raise additional funding necessary to fund continued operations; and the other factors discussed in OncoSec's filings with the Securities and Exchange Commission.

Undue reliance should not be placed on forward-looking statements, which speak only as of the date they are made. OncoSec disclaims any obligation to update any forward-looking statements to reflect new information, events or circumstances after the date they are made, or to reflect the occurrence of unanticipated events.

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