November 18, 2020

OncoSec Provides Highlights from Analyst & Investor Day and SITC 2020 and Announces KEYNOTE-695 Reaches Full Enrollment

-- Significance of 30% overall response rate (ORR), 6% complete responses (CR), durability and favorable safety data from KEYNOTE-695 Phase 2b trial discussed by Key Opinion Leaders (KOLs) specializing in melanoma treatment --

-- In KEYNOTE-695, the combination of TAVO and KEYTRUDA® (pembrolizumab) exhibited an immune response in both local and distant tumors --

-- Phase 2 KEYNOTE-890 trial of TAVO in triple negative breast cancer (TNBC), IL-12 delivery as a vaccine adjuvant and visceral lesion applicator (VLA) seen as compelling pipeline programs -

PENNINGTON, N.J. and SAN DIEGO, Nov. 18, 2020 /PRNewswire/ -- OncoSec Medical Incorporated (NASDAQ:ONCS) (the "Company" or "OncoSec") today provided highlights from its Analyst & Investor Day and Symposium held at the Society for Immunotherapy of Cancer (SITC)'s 35th Anniversary Annual Meeting. KOLs shared their views and insights regarding the Company's positive interim data from its KEYNOTE-695 registration-enabled Phase 2b clinical trial evaluating TAVO™ (tavokinogene telseplasmid), a DNA plasmid-based interleukin-12 (IL-12), in combination with KEYTRUDA® (pembrolizumab) in rigorously defined anti-PD1 checkpoint resistant metastatic melanoma patients as well as other programs leveraging TAVO and its gene electrotransfer platform. The Company also announced that KEYNOTE-695 is now fully enrolled.

Highlights from the Investor & Analyst Day

Tara C. Mitchell, M.D., Associate Professor of Medicine at Penn Medicine, who exclusively treats patients with melanoma, provided her clinical impressions of the KEYNOTE-695 data and the PD-1 checkpoint refractory patient population. Dr. Mitchell stated, "Patients are eager to have this type of option, with an excellent safety profile and durable efficacy. I see this treatment as promising and look forward to offering it to patients who have progressed on PD-1 blockade and to seeing ongoing study results from this combination."

Dr. Mitchell also commented:

- Regarding efficacy, the 30% ORR observed in KEYNOTE-695 is what oncologists want to see in this patient population.
- Of note, there was a 35% response rate in M1c and M1d patients, who have organ or brain metastatic disease.
- The response rate of 40% in patients who had disease progression after both anti-PD-1 and anti-CTLA-4 (ipilimumab) is promising.
- The safety data presented in KEYNOTE-695 are highly convincing, with only 3 patients experiencing Grade 3 SAE's (~5%) and reassuring that TAVO did not add to any unexpected toxicities with KEYTRUDA.

Matteo Carlino, M.D., Medical Oncologist and Clinical Senior Lecturer at Westmead and Blacktown Hospitals and University of Sydney, and one of the KEYNOTE-695 trial investigators, commented, "I'm confident that the KEYNOTE-695 data will remain positive and now that we have completed enrollment of 100 patients, we expect to continue to see deepened responses over time. Since a number of patients with stable disease over several months have become responders with continued treatment, we believe the data has the potential to improve over time."

Dr. Carlino also provided his perspective on other therapeutic approaches in the checkpoint refractory metastatic melanoma patient population and where the TAVO plus KEYTRUDA combination fits in the field:

- Not all intratumoral approaches are equal, as some do not elicit a distant immune response; however, the combination of TAVO and KEYTRUDA has been shown to exhibit an immune response in both local and distant visceral tumor responses.
- The toxicity profile for TAVO and KEYTRUDA is exceptionally favorable.

Additional topics covered included OncoSec's CORVax12 vaccine, the Company's novel DNA-encodable vaccine that combines TAVO with the National Institute of Health (NIH)/ National Institute of Allergy and Infectious Diseases (NIAID) Vaccine Research Center's SARS-CoV-2 virus "spike" protein. OncoSec is developing CORVax12 in collaboration with Portland Providence Medical Center and the vaccine candidate is expected to enter a Phase 1 clinical trial shortly, after the recent acceptance of an Investigational New Drug application.

Bernard Fox, Ph.D., Harder Family Chair for Cancer Research, Chief of the Laboratory of Molecular Tumor Immunology at Earle A. Chiles Research Institute, said, "By combining the immune stimulant IL-12, we aim to augment the vaccine response to produce more durable neutralizing antibodies. This approach is relevant particularly for the most vulnerable populations, such as the elderly, patients with immunodeficiencies or immunocompromised cancer patients. We look forward to seeing if IL-12 can help these patients boost their immune system against the virus."

Experts also shared insights about OncoSec's new neoadjuvant melanoma clinical trial and opinions on the VLA program, looking to the future of gene electrotransfer in both lung and liver tumors.

A replay of the Analyst and Investor Day webcast can be accessedhere via the OncoSec website.

Highlights from the SITC Symposium

- Based on KEYNOTE-695 data, additional KOLs presenting at the Symposium highlighted TAVO's potential to improve upon current systemic or local delivery of immuno-stimulant IL-12 by providing clinically relevant efficacy without severe side effects.
- TAVO has the unique ability to produce a vaccine-like effect through the local delivery of plasmid IL-12, which catalyzes endogenous IL-12, resulting in heightened antigenicity in both the treated and distant lesions, with the potential to be an effective treatment option across several oncologic indications.
- Among the advantages of Gene ElectroTransfer for Immunotherapy (GET-IT), OncoSec's approach for the delivery of TAVO, include rapid transfection, versatility in the type of molecules delivered and cells targeted and the opportunity to treat both surface and visceral lesions with a non-invasive method of cell transfection that does not include chemical or toxic substances.
- Positive preclinical data from OncoSec's VLA program showed promise for the development of intratumoral immunotherapy treatments with TAVO or other immunologically relevant genes in deep visceral tumors.

The SITC Symposium presentation can be accessed here.

Key highlights from the CORVax12 poster presentation include:

- Early pre-clinical data show that intramuscular and/or intradermal injection of plasmids encoding the SAR-CoV-2 spike protein with plasmid-encoded murine IL-12, followed by electroporation (EP), can induce spike-specific IgG antibodies, as well as the disruption of SARS-CoV-2 binding to targets.
- EP of CORVax12 elicited anti-spike IgG antibodies, as well as IgG antibodies targeting the receptor binding domain of the spike protein approximately 40 days after a booster vaccination.
- The addition of IL-12, at least transiently, increased Surrogate Virus Neutralization Test titers, a marker detecting increasing levels of neutralizing antibodies to SARS-CoV-2.
- Preliminary data up to 150 days post vaccination showed that EP of CORVax alone or with IL-12 was safe and continued to produce anti-viral antibodies.

On November 3, the Company announced FDA acceptance of its Investigational New Drug application approval for a first-in-human Phase 1 trial to evaluate the safety and immunogenicity of CORVax12. The poster presentation can be accessed here.

Key highlights from the TNBC poster presentation include:

- Intratumoral injection of TAVO in several pre-clinical models of TNBC led to complete tumor regression and long-term survival in a significant proportion of mice.
- An increase in T cell infiltration and induction of PD-1/PD-L1 in the tumor microenvironment was observed. This signature was also demonstrated in patient samples from a single arm, prospective clinical trial of TAVO monotherapy in TNBC (OMS-I140).

The poster presentation can be accessed here.

About KEYNOTE-695

KEYNOTE-695 is OncoSec's registration-directed Phase 2b trial (NCT#03132675) evaluating TAVO™ (tavokinogene telseplasmid), a DNA plasmid-based interleukin-12 (IL-12) + KEYTRUDA® (pembrolizumab) in patients with rigorously confirmed anti-PD-1 checkpoint resistant metastatic melanoma. The trial aims to enroll up to 100 patients with refractory, locally advanced or metastatic disease defined as unresectable Stage III/IV metastatic melanoma that had definitively progressed on a full-course of anti-PD-1 treatment with KEYTRUDA® (pembrolizumab) or OPDIVO® (nivolumab). TAVO™ has received Fast Track Designation from the U.S. Food and Drug Administration (FDA) for the treatment of metastatic melanoma following progression on KEYTRUDA or OPDIVO.

About TAVO™

OncoSec's gene therapy technology combines TAVO™ (tavokinogene telseplasmid), a DNA plasmid-based interleukin-12 (IL-12), with an intratumoral electroporation gene delivery platform to achieve endogenous IL-12 production in the tumor microenvironment that enables the immune system to target and attack tumors throughout the body. TAVO™ has demonstrated a local and systemic anti-tumor response in several clinical trials, including the pivotal Phase 2b trial KEYNOTE-695 for metastatic melanoma and the KEYNOTE-890 Phase 2 trial in triple negative breast cancer (TNBC). TAVO™ has received Orphan Drug and Fast-Track Designation by the U.S. Food & Drug Administration (FDA) for the treatment of metastatic melanoma following progression on KEYTRUDA or OPDIVO.

About CORVax12

CORVax12 is the only known DNA vaccine that uses an immune stimulant to promote an immune response against the SARS-CoV-2 virus. The CORVax12 vaccine approach combines the co-administration of a DNA-encodable version of the stabilized SARS-CoV-2 spike or "S" glycoprotein trimer with TAVO™ (plasmid IL-12) to enhance the immunogenicity of this vaccine developed by scientists at the National Institute of Allergy and Infectious Diseases (NIAID) Vaccine Research Center. CORVax12 is designed to drive a coordinated vaccine response, capable of drawing upon the innate and adaptive humoral and cellular arms. This multi-pronged immune response has the potential to generate a robust and durable anti-viral response.

About OncoSec Medical Incorporated

OncoSec Medical Incorporated (the "Company," "OncoSec," "we" or "our") is a late-stage biotechnology company focused on developing cytokine-based intratumoral immunotherapies to stimulate the body's immune system to target and attack cancer. OncoSec's lead immunotherapy investigational product candidate – TAVO™ (tavokinogene telseplasmid) – enables the intratumoral delivery of DNA-based interleukin-12 (IL-12), a naturally occurring protein with immune-stimulating functions. The technology, which employs electroporation, is designed to produce a controlled, localized expression of IL-12 in the tumor microenvironment, enabling the immune system to target and attack tumors throughout the body. OncoSec has built a deep and diverse clinical pipeline utilizing TAVO™ as a potential treatment for multiple cancer indications either as a monotherapy or in combination with leading checkpoint inhibitors; with the latter potentially enabling OncoSec to address a great unmet medical need in oncology: anti-PD-1 non-responders. Results from recently completed clinical studies of TAVO™ have demonstrated a local immune response, and subsequently, a systemic effect as either a monotherapy or combination treatment approach along with an acceptable safety profile, warranting further development. In addition to TAVO™, OncoSec is identifying and developing new DNA-encoded therapeutic

candidates and tumor indications for use with its new Visceral Lesion Applicator (VLA), to target deep visceral lesions, such as liver, lung or pancreatic lesions. For more information, please visit www.oncosec.com. TAVO™ is a trademark of OncoSec Medical Incorporated.

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KEYTRUDA® is a registered trademark of Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc.

OPDIVO® is a registered trademark of Bristol-Myers Squibb Company.

Risk Factors and Forward-Looking Statements
This release, as well as other information provided from time to time by the Company or its employees, may contain forward-looking statements that involve a number of risks and uncertainties that could cause actual results to differ materially from those anticipated in the forward-looking statements. Forward-looking statements provide the Company's current beliefs, expectations and intentions regarding future events and involve risks, uncertainties (some of which are beyond the Company's control) and assumptions. For those statements, we claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995. You can identify forward-looking statements by the fact that they do not relate strictly to historical or current facts. These statements may include words such as "anticipate," "believe," "could," "estimate," "expect," "intend," "may," "plan," "potential," "should," "will" and "would" and similar expressions (including the negative of these terms). Although we believe that expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. The Company intends these forward-looking statements to speak only at the time they are published on or as otherwise specified and does not undertake to update or revise these statements as more information becomes available, except as required under federal securities laws and the rules and regulations of the Securities Exchange Commission ("SEC"). In particular, you should be aware that the success and timing of our clinical trials, including safety and efficacy of our product candidates, patient accrual, unexpected or expected safety events, the impact of COVID-19 on the supply of our candidates or the initiation or completion of clinical trials and the usability of data generated from our trials may differ and may not meet our estimated timelines. Please refer to the risk factors and other cautionary statements provided in the Company's Annual Report on Form 10-K for the fiscal year ended July 31, 2020 and subsequent periodic and current reports filed with the SEC (each of which can be found at the SEC's website www.sec.gov), as well as other factors described from time to time in the Company's filings with the SEC.

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