OSE Immunotherapeutics Presented New Translational Data on Tedopi® and Preclinical Data on PD-1/IL-7 Bifunctional Program BiCKI®-IL-7

Data presented at the 36th Annual Society for Immunotherapy of Cancer (SITC) Meeting

Nantes, France – November 16, 2021, 7:30 a.m. CET - OSE Immunotherapeutics SA (ISIN: FR0012127173; Mnemo: OSE) presented new clinical and translational data on Tedopi® (neoepitope-based cancer vaccine) in non-small cell lung cancer and the latest data from BiCKI®-IL-7 (bifunctional therapy targeting PD-1 and IL-7) preclinical programs at the Society for Immunotherapy of Cancer (SITC) 36th Annual Meeting in Washington D.C. (and virtually) held on November 10 – 14, 2021.

Nicolas Poirier, Chief Scientific Officer of OSE Immunotherapeutics, comments: *"We are happy to share our latest data demonstrating the advancements we made with our clinical and preclinical immuno-oncology products: the neoepitope-based vaccine Tedopi® and BiCKI®-IL-7, the novel bispecific therapy combining anti-PD1 and IL-7 cytokine. Both products aim at addressing the high unmet clinical needs of patients suffering from immune escape following checkpoint inhibitor treatments. This progress further reinforces the Company's leading position in immuno-oncology by pushing forward these high potential promising assets."*

The poster entitled: ***"Combined exploratory immunophenotyping and transcriptomic tumor analysis in patients treated with OSE2101 (Tedopi®) vaccine in HLA-A2+ advanced non-small cell lung cancer (NSCLC) from the ATALANTE-1 trial"*** included clinical data from a translational analysis performed from HLA-A2$^+$ patients treated with Tedopi® in the Atalante-1 Phase 3 clinical trial. Available tumor biopsies at initial diagnosis were analyzed to determine the expression of the tumor-associated antigens (TAAs) and to identify other tumor factors associated with long-term survival. This translational analysis showed :

- A high/high Immunoscore® associated with high CD8 T-cell tumor infiltration, and a higher proportion of CD8 cells interacting with PD-L1 cells in a patient with a partial response;
- Transcriptomic data have shown an activated macrophage pathway. High IFN-ɣ and expanded immune gene signatures scores were observed in long-term surviving patients with secondary resistance to immune checkpoint blockade.

The Phase 3 clinical trial Atalante-1 demonstrated a favorable benefit/risk ratio of Tedopi® versus standard of care (SoC) docetaxel or pemetrexed in advanced HLA-A2$^+$ NSCLC patients with secondary resistance to immune checkpoint inhibitors (data presented at the 2021 European Society for Medical Oncology Congress).

The poster entitled: ***"Long-term anti-tumor preclinical efficacy of an optimized anti-PD-1/IL-7 bifunctional antibody sustaining activation of progenitor stem-like CD8 TILs and disarming Treg suppressive activity"*** has described a monotherapy with BiCKI®-IL-7, an anti-PD1/IL-7 bifunctional

monoclonal antibody, that induces long-term survival, proliferation and responses without signs of exhaustion of T cells as well as robust *in vivo* anti-tumor memory response in different preclinical models.

Interestingly, targeting IL-7 on $PD1^+$ tumor-specific T cells has shown to have a unique property in selectively inducing the proliferation and survival of $TCF1^+$ (T Cell Factor 1) stem-like CD8 T cells *in vitro* in human T-cell exhaustion model and *in vivo* in mouse tumor model, avoiding exhaustion of stem tumor-reactive T cells and hence providing long-term anti-tumor memory.

$TCF1^+$ $PD1^+$ CD8 T cells, which express high level of IL-7R, have been broadly described these last years as T cells with potent stem-like properties promoting tumor control in response to vaccination or checkpoint blockade immunotherapy *(Siddiqui I. et al. Immunity 2019; Zhao Xudong et al. Nature Review Immunology 2021)*.

Poster #366 *"Combined exploratory immunophenotyping and transcriptomic tumor analysis in patients treated with OSE2101 vaccine in HLA-A2+ advanced non-small cell lung cancer (NSCLC) from the ATALANTE-1 trial"*
Category: Clinical Trials Completed

Poster #794 *"Long-term anti-tumor preclinical efficacy of an optimized anti PD-1/IL-7 bifunctional antibody sustaining activation of progenitor stem-like CD8 TILs and disarming Treg suppressive activity"*
Category: Immuno-conjugates and chimeric molecules

ABOUT OSE Immunotherapeutics

OSE Immunotherapeutics is an integrated biotechnology company focused on developing and partnering therapies to control the immune system for immuno-oncology and autoimmune diseases. The company's immunology research and development platform is focused on three areas: T-cell-based vaccination, Immuno-Oncology (focus on myeloid targets), Auto-immunity & Inflammation. Its balanced first-in-class clinical and preclinical portfolio has a diversified risk profile:

Vaccine platform

- **Tedopi®** (innovative combination of neoepitopes): the company's most advanced product; positive results for the Phase 3 trial (Atalante 1) in Non-Small Cell Lung Cancer patients after secondary resistance to checkpoint inhibitors.
  In Phase 2 in pancreatic cancer (TEDOPaM), sponsor GERCOR.
  In Phase 2 in ovary cancer, in combination with pembrolizumab (TEDOVA), sponsor ARCAGY-GINECO.
  In Phase 2 in non-small cell lung cancer in combination with nivolumab, sponsor Italian foundation FoRT.
- **CoVepiT**: a prophylactic second-generation vaccine against COVID-19, developed using SARS-CoV-2 optimized epitopes against multi variants. Positive preclinical and human ex vivo results. Voluntary and temporary Phase 1 enrollment suspension on-going (July 2021).

Immuno-oncology platform

- **BI 765063** (OSE-172, anti-SIRPα mAb on CD47/ SIRPα pathway): developed in partnership with Boehringer Ingelheim in advanced solid tumors; positive Phase 1 dose escalation results of BI 765063 in monotherapy or in combination with ezabenlimab (PD-1 antagonist); Expansion Phase 1 open for screening.
- **CLEC-1** (novel myeloid checkpoint target): identification of mAb antagonists of CLEC-1 blocking the "Don't Eat Me" signal that increase both tumor cell phagocytosis by macrophages and antigen capture by dendritic cells.

- **BiCKI®**: bispecific fusion protein platform built on the key backbone component anti-PD-1 (OSE-279) combined with new immunotherapy targets; 2nd generation of PD-(L)1 inhibitors to increase antitumor efficacity.

Auto-immunity and inflammation platform

- **FR104** (anti-CD28 monoclonal antibody): Licensing partnership agreement with Veloxis in the organ transplant market; ongoing Phase 1/2 in renal transplant (sponsored by the Nantes University Hospital); Phase 2-ready asset in an autoimmune disease indication.
- **OSE-127/S95011** (humanized monoclonal antibody targeting IL-7 receptor): developed in partnership with Servier; positive Phase 1 results; in Phase 2 in ulcerative colitis (OSE sponsor) and an independent Phase 2a ongoing in Sjögren's syndrome (Servier sponsor).
- **OSE-230** (ChemR23 agonist mAb): first-in-class therapeutic agent with the potential to resolve chronic inflammation by driving affected tissues to tissue integrity.

For more information: https://ose-immuno.com/en/
Click and follow us on Twitter and LinkedIn

Contacts

OSE Immunotherapeutics
Sylvie Détry
sylvie.detry@ose-immuno.com
+33 153 198 757

Investor Relations
Thomas Guillot
thomas.guillot@ose-immuno.com
+33 607 380 431

Media

U.S. Media: LifeSci Communications
Darren Opland, Ph.D.
darren@lifescicomms.com
+1 646 627 8387

Guillaume van Renterghem – LifeSci Advisors
gvanrenterghem@lifesciadvisors.com
+41 76 735 01 31

French Media: FP2COM
Florence Portejoie
fportejoie@fp2com.fr
+33 607 768 283

Forward-looking statements

This press release contains express or implied information and statements that might be deemed forward-looking information and statements in respect of OSE Immunotherapeutics. They do not constitute historical facts. These information and statements include financial projections that are based upon certain assumptions and assessments made by OSE Immunotherapeutics' management in light of its experience and its perception of historical trends, current economic and industry conditions, expected future developments and other factors they believe to be appropriate.

These forward-looking statements include statements typically using conditional and containing verbs such as "expect", "anticipate", "believe", "target", "plan", or "estimate", their declensions and conjugations and words of similar import. Although the OSE Immunotherapeutics management believes that the forward-looking statements and information are reasonable, the OSE Immunotherapeutics' shareholders and other investors are cautioned that the completion of such expectations is by nature subject to various risks, known or not, and uncertainties which are difficult to predict and generally beyond the control of OSE Immunotherapeutics. These risks could cause actual results and developments to differ materially from those expressed in or implied or projected by the forward-looking statements. These risks include those discussed or identified in the public filings made by OSE Immunotherapeutics with the AMF. Such forward-looking statements are not guarantees of future performance. This press release includes only summary information and should be read with the OSE Immunotherapeutics Universal Registration Document filed with the AMF on 15 April 2021, including the annual financial report for the fiscal year 2020, available on the OSE Immunotherapeutics' website. Other than as required by applicable law, OSE Immunotherapeutics issues this press release at the date hereof and does not undertake any obligation to update or revise the forward-looking information or statements.