EsoBiotec Doses First Patient in Investigator Initiated Trial of *In Vivo* BCMA CAR-T Candidate ESO-T01 for Multiple Myeloma

Initial clinical observations suggest high level of T cells reprogramming and CAR-T expansion at the starting dose without lymphodepletion

At 28 days after a single dose of ESO-T01, no cancer cells were detected in the bone marrow

ESO-T01 is being developed in collaboration with Shenzhen Pregene Biopharma

Mont-Saint-Guibert, Belgium (January 8, 2025) – EsoBiotec SA, a biotechnology company empowering cells *in vivo* to fight cancer, in collaboration with Pregene Biopharma, today announced the first patient has been dosed in an investigator-initiated clinical trial in China of ESO-T01 for relapsed/refractory multiple myeloma. ESO-T01 is an immune shielded lentiviral vector that specifically reprograms T lymphocytes *in vivo* into highly effective BCMA CAR-T cells.

The multi-center, single arm, open-label, dose escalation clinical trial (NCT06691685) is designed to evaluate the safety, tolerability and preliminary clinical activity, including *in vivo* reprogramming efficiency of a single intravenous infusion, across escalating doses of ESO-T01 in up to 24 patients with multiple myeloma. Primary endpoints for the study include incidence and severity of cytokine release syndrome and immune effector cell-associated neurotoxicity syndrome, dose-limiting toxicities, and treatment-associated adverse effects.

“Initial clinical observations with ESO-T01 indicate a favorable safety profile and promising efficacy already at the first dose level of 0.25E+09 transducing unit per patient, with pharmacokinetic characteristics comparable to autologous *ex vivo* CAR-T therapies,” said Principal Investigator Professor Heng MEI, Ph.D., M.D., Union Hospital, Tongji Medical College, Huazhong University of Science and Technology. “The first patient received a starting dose of ESO-T01 without prior lymphodepletion. By Day 28, minimal residual disease in the bone marrow was undetectable, and the elevated free light chain levels secreted by tumor cells had normalized. No significant adverse events were reported during treatment.”

“ESO-T01 has the potential to offer a simplified patient journey, with several benefits over current treatments for multiple myeloma that are often costly and have unfavorable side effects,” said EsoBiotec CEO Jean-Pierre Latere, Ph.D. “Our treatment does not require lymphodepletion, is immediately available to patients without any waiting time, and is administrated in a single intravenous dose that takes less than 10 minutes. This is why we value our collaboration with Pregene Biopharma to develop ESO-T01, as we share the common goal of making this groundbreaking treatment affordable and available to patients globally. We look forward to sharing initial clinical data in the second half of 2025.”

"The clinical success of autologous CAR-T in treating hematologic malignancies is well established," said Pregene Biopharma Chief Executive Officer and co-founder Dr. Li Hongjian. "With *in vivo* delivery, more multiple myeloma patients can benefit from CAR-T. Moreover, we anticipate expanding to therapeutic areas such as autoimmune diseases, enabling broader patient access to effective treatment. Through this collaboration, we are pioneering innovative scientific advancements that have the potential to redefine the future of cell therapy".

ESO-T01 is the first *in vivo* BCMA CAR-T candidate to be dosed in a human clinical trial, and has been developed by EsoBiotec using its third-generation immune-shielded cell specific lentiviral vector platform, ENaBL, that reprograms immune cells inside the body. Combined with a BCMA CAR-T transgene developed by Pregene Biopharma and a robust industrial manufacturing process, ESO-T01 potentially represents a transformational therapeutic to provide patients with an off-the-shelf treatment at a cost of goods possibly one order of magnitude lower compared to *ex vivo* CAR-T therapy, which could redefine access to advanced therapies.

About ESO-T01

ESO-T01 is a third-generation replication-deficient self-inactivating lentiviral vector expressing a BCMA-targeted CAR construct under a T cell-specific synthetic promoter. It is immune shielded and resistant to phagocytosis. ESO-T01 is an "off-the-shelf" single dose treatment, directly administered systemically without the need for lymphodepletion.

About ENaBL Platform

EsoBiotec's Engineered NanoBody Lentiviral (ENaBL) platform vectors are designed to specifically reprogram T cells and have demonstrated a high level of CAR T potency in animal studies. In large scale clinical manufacturing, the company has preserved vector specificity with high physical titer and high purity. EsoBiotec's lead product candidate, ESO-T01, leverages the ENaBL platform to validate this novel technological approach using a clinically proven antigen.

About EsoBiotec SA

EsoBiotec is a privately held biotechnology company that specializes in the *in vivo* engineering of T-cells and other immune cells to develop cost-effective, off-the-shelf therapeutics. Investors include Thuja Capital, UCB Ventures, Invivo Partners, Wallonie Entreprendre (WE), SambrInvest and Investsud. Therapeutics are developed using the company's Engineered NanoBody Lentiviral (ENaBL) platform to deliver state-of-the-art cell therapies and maximize accessibility to life-changing cancer care. An Investigator-Initiated Clinical Trial is underway evaluating ESO-T01, EsoBiotec's BCMA CAR-T candidate, for the treatment of multiple myeloma. EsoBiotec's pipeline features two first-in-class, combination candidates—ESO-TX101 and ESO-TX102—designed to build on the simultaneous engineering of T cells and monocytes to remodel the tumor microenvironment as treatments for solid tumors.

For more information on EsoBiotec, please visit http://www.esobiotec.com. Follow @EsoBiotec on LinkedIn.

About Pregene Biopharma

Pregene Biopharma is a clinical-stage biopharmaceutical company that specializes in developing innovative cell and gene therapies supported by advanced cell and vector manufacturing technologies. Utilizing its proprietary antibody discovery platform and high-throughput CAR prioritization platform, Pregene has built a robust pipeline of clinical-stage candidates, including autologous and allogeneic CAR-T, CAR-NK, TCR-T, stem cell, and biologics. For more information on Pregene Biopharma, please visit http://www.pregene.com.

Contacts

Investor Relations
Stephanie Carrington
ICR Healthcare
Stephanie.Carrington@icrhealthcare.com
(646) 277-1282

Media Relations
Alexis Feinberg
ICR Healthcare
Alexis.Feinberg@icrhealthcare.com
(203) 939-2225

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