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Press release

License agreement signed with an American start-up in the treatment of anaemia and rare genetic disorders.



GENERAL BIOLOGICS, INC.

On 10 December 2019, Erganeo signed an exclusive worldwide licence agreement with GENERAL BIOLOGICS, an American start-up founded in 2016 and based in Cambridge (Massachusetts, USA), on the use of antibody IH4, which improves the specificity of drugs developed by the company and reduces side effects. Two applications are initially under the spotlight: the treatment of anaemia associated with cancer and kidney failure in particular, and rare genetic disorders that can be treated by 'Protein Replacement Therapy.'

A powerful combination

The start-up, General Biologics, specialises in the production of immunoconjugate fusion proteins and synthetic-biological systems. Antibody IH4, the subject of the licence agreement, is a camel-derived 'single-domain' antibody (VHH) that is more easily produced than typical human antibodies. It has the ability to target a red blood cell protein, glycophorin A, more strongly and safely than other antibodies against this red blood cell protein. Combined with General Biologics protein-based drug candidates, antibody IH4 improves their lifetime in plasma by linking the proteins to the red blood cells, which survive about 100 days in the blood. As a result, these fused proteins have greatly prolonged lifetime in the body, less frequent dosing, increased efficacy and fewer side effects. A patent for this technology has been filed by Erganeo (INSERM, Université Paris Diderot, Université des Antilles et de la Guyane, Institut National de Transfusion Sanguine) on which General Biologics will be able to rely to develop new medicinal solutions.

Two promising medical applications

This innovation is expected to lead to two uses in patients:

- IH4 – Erythropoietin for the treatment of anaemia associated with cancer or other pathologies.

Anaemia associated with cancer or kidney failure, in particular, is today treated with erythropoietin. However, it can have significant side effects, increasing the risk of thrombosis (obstruction of the blood vessels leading to heart attacks, strokes, etc.) as well as accelerating tumor growth. Combining erythropoietin with antibody IH4 licensed by Erganeo will make it

possible to target the late red blood cell precursors that give rise to red blood cells and will reduce side effects caused by erythropoietin acting on the blood clotting system and tumor cells. A well-studied drug based on IH4, “Targeted Erythropoietin” has demonstrated activity and safety in animal test systems and is in late pre-clinical development.

- IH4 fusion proteins for genetic disorders.

“Protein replacement therapies” are a class of drugs in which a protein that is missing from a patient (for example due to a genetic disorder) is simply manufactured and injected back into the patient. Historically, such proteins have a high probability of success in clinical trials. Unfortunately, protein drugs must be injected, which often requires visits to a clinic and is profoundly inconvenient for patients. Attachment of such drugs to the IH4 antibody has the effect of prolonging their lifetime in the body, allowing for less frequent dosing and greater convenience to patients.

“This licensing deal will give General Biologics a key advantage in developing drugs with a very long plasma half-life.” said Dr. Jeffrey Way, the President of General Biologics. “And the ability to target erythropoietin specifically to red blood cell precursors, avoiding the cells that cause side effects due to blood clotting, such as strokes, heart attacks, and deep vein thrombosis. This will address the current difficulties of millions of patients suffering from anemia. At the same time, economically, it will give us unique access to a multi-billion dollar market. The long lifetime in the body will allow us to address a wide variety of rare genetic diseases by attaching replacement proteins to red blood cells.”

“We are pleased to complete this licensing deal with General Biologics.” said Mr. Suat Topsu, the President of Erganeo. “That's Erganeo's mission: to allow our partner to acquire a major competitive advantage during their growth phase thanks to our technologies!”

Through this licence agreement, Erganeo once again marks its investment in innovations with high medical potential.

About Erganeo – www.erganeo.com

Erganeo is an investment fund that specializes in breakthrough innovations (Deep Tech) with major societal impact. We invest early in the game to secure researchers' newest inventions before they are transferred to companies or before start-ups are founded, across a wide range of scientific fields: Biotech, Infotech (telecom, connected objects, big data, AI) and Enertech (new energy, chemistry, materials), among others.

Erganeo aims to accelerate and simplify links between research and industry for the benefit of society. To do so, we finance and accompany the new generation of French researchers and entrepreneurs on the road to international recognition and success.

As a member of the SATT Network, Erganeo draws on the Ile-de-France network in building the foundations of a better tomorrow, tapping into a talent pool of over 20,000 researchers across 370 cutting-edge, leading laboratories. Since it was founded, Erganeo has invested over €31m, thus contributing to the signing of 76 licensing agreements with companies of all sizes, and setting up 18 start-ups.

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About General Biologics –

General Biologics, Inc. is a new protein engineering and synthetic biology company with advanced platform technologies to create multi-component fusion proteins that reduce side effects and improve effectiveness of protein drugs.

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