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Press release

Gene and cell therapy by suicide gene to treat liver cancer.

An exclusive license was signed on 10 November, 2022, between Erganeo and the start-up Persea, for development of a new treatment for liver cancer. It is a cell therapy via enhanced suicide gene to eradicate the tumour and prevent recurrence.

Liver cancer kills 700,000 people worldwide each year, and close to 10,000 in France, It is the number three cause of cancer death with a five-year survival rate of less than 17%. Only one quarter of patients receive curative treatment that does not prevent recurrence, and that also causes significant side effects. Three-quarters of patients receive palliative treatment such as inter-arterial treatments, biotherapies and immunotherapies, which, in the case of liver cancer, achieve only modest survival rate improvements at the expense of multiple unwanted side effects.

Product and action mechanism

A research collaboration between INSERM, the CNRS, AP-HP and Université Paris-Cité led to the discovery of an innovative new targeted treatment approach for solid tumors, particularly hepatocarcinoma. This technology is driven and developed by the start-up Persea, based on research work conducted by Prof. Philippe Beaune and Dr. Isabelle De Waziers (Université Paris-Cité, INSERM U 1138). The start-up creators are Sophie de Ferrières, Olivier Pellerin and Marc Sapoval (European Hospital Georges Pompidou).

This innovative new approach combines the suicide gene and cell therapy methods. It is based on a therapeutic strategy known as BioTrojan, in reference to the “Trojan Horse”. This cellular Trojan Horse carries a suicide gene that is thirteen times more effective than the wild-type gene, protected by a patent filed in 2012, initiated by Philippe Beaune and I. de Waziers. It will be expressed in mesenchymal stem cells injected in a targeted manner into the tumour via intra-arterial administration. The homing capacity of the mesenchymal stem cells enables them to nest preferentially in the tumour and thus spare the healthy surrounding tissue. A prodrug therapy (cyclophosphamide) will then be injected intravenously and converted into its active metabolite, which can then spread in the tumour cells (direct bystander effect) and lead to their cell death. In addition, the gradual destruction and eradication of the tumour will also be mediated by the production of an immune reaction, involving CD8 T cells directed against tumour cells, thus helping prevent recurrence of the cancer (direct bystander effect).

The technology has been subject to three patent filings (2012, 2019) as well as support for a maturation plan with Erganeo, resulting in a proof of concept (POC) for hepatocarcinoma.



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L'AVENIR EST FAIT D'AUDACE



Outlook and developments

Persea's goal is to kick off a first clinical trial in humans by the end of 2025, with market launch estimated for 2030. BioTrojan will supplement existing treatments and will constitute a first line treatment for intermediate or advanced liver cancer.

About Erganeo – www.erganeo.com

Erganeo is a French tech transfer company specialises in breakthrough innovations (deep tech) with a 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 350 cutting-edge, leading laboratories. Since it was founded, Erganeo has invested over €42m, thus contributing to the signing of 88 licensing agreements with companies of all sizes and setting up 31 start-ups.

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About Persea

Persea is a French biotechnology start-up that is revolutionizing the treatment of solid cancers by developing the first treatment that achieves full remission of liver cancer: BioTrojan.

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