PRESS RELEASE

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# MexBrain, a Lyon-based medtech developing a new free metal extraction technology for therapeutic purposes, announces the authorization of its second clinical trial, focused on ACLF (Acute-on-Chronic Liver Failure) in France.

**A second key milestone in the clinical development of its medical device, MexBrain announces that the French authorities have authorized a clinical trial for the treatment of patients suffering from ACLF (acute-on-chronic liver failure). The trial is taking place in the surgical intensive care unit of Hôpital Croix-Rousse, as part of the Lyon Hepatology Institute EVEREST.**

**ACLF is a syndrome of abrupt decompensation of cirrhosis, usually of unknown cause, which may be due to infection or active alcoholism, but in 40-50% of cases the etiology remains unexplained. This particular form of decompensation is associated with a high mortality rate. An excessive inflammatory response, associated with a high level of "bad free iron" in the blood, seems to play an important role in the development of ACLF.**

Founded at the end of 2017, MexBrain is a Medtech specializing in the extraction of excess metals present in the body. To this end, it has designed a medical device for metal extraction, combining chelating biopolymers and hemodialysis, a technology that confers greater extraction speed, greater specificity and above all greater safety compared with solutions currently on the market. The special feature of MexBrain's treatment is that it uses a very low volume of dialysis fluid, enabling efficient extraction of free metals in a short time, thus limiting side effects.

Excess free iron can worsen the health status of intensive care patients by fueling the excessive inflammatory response via the recruitment of pro-inflammatory macrophages and the generation of iron-dependent and -optional reactive oxygen species, as well as stimulating bacterial proliferation. In the case of patients suffering from ACLF syndrome, the excessive inflammatory response is responsible for multiple organ failure, and very frequently prevents patients from receiving an organ transplant (liver and/or kidney), which is the only definitive therapeutic option for these patients. In addition, patients suffering from ACLF are extremely susceptible to secondary infections, worsening their clinical situation and with the direct consequence of making infected patients ineligible for organ transplantation.

MexBrain’s treatment extracts free iron from the blood and should help break the vicious circle of excessive inflammatory response by reducing the recruitment of pro-inflammatory macrophages and the generation of reactive oxygen species and oxidative stress, as well as inhibiting bacterial proliferation. It could therefore halt the progression of ACLF syndrome and restore their eligibility for liver transplantation, and enable, with or without transplantation, a more rapid discharge from intensive care, and above all prolonged survival.

During this clinical trial, each patient will receive three sessions of slow, low-volume MEX-CD1 dialysis to remove excess free iron. The data collected during this trial will help validate the safety of the MEX-CD1 medical device, as well as measure its efficiency in removing free iron, thus demonstrating its potential for the treatment of ACLF syndrome.

*"Obtaining authorization to conduct this clinical trial for ACLF patients shows that our concept of a medical device combined with slow, low-volume dialysis has convinced the authorities in terms of both patient safety and benefit-risk ratio. Indeed, the patients targeted in this clinical trial have an excessively low life expectancy (only 20% surviving more than 30 days), mainly due to the lack of an adequate therapeutic solution. Indeed, these patients with a life-threatening disease currently receive only supportive care. MexBrain's treatment offers a new hope for them to improve the management of ACLF syndrome. We hope to obtain further authorizations that will enable us to target a wider panel of patients with pathologies associated with the presence of toxic free metals in the blood",* says **Thomas Brichart, President of MexBrain**.

*"We are delighted to take part in this clinical trial, especially as it targets a disease with a high mortality rate, that could give new hope to patients for whom there is currently no therapeutic solution other than liver transplantation, when possible. It is our hope that MexBrain's treatment will allow liver recovery or transplantation, by improving patients' health status*. **Doctor Céline Guichon, Head of the Surgical Intensive Care Unit at Hôpital Croix-Rousse, Lyon.**

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**About MexBrain**

A spin-off from the University of Lyon, MexBrain was founded in 2017 by several researchers including Olivier Tillement (Professor at the University of Lyon 1) with the aim of combining dialysis and metal capture technologies for the purification of biological systems from toxic metals. The start-up's aim is to pave the way for a new method of treating the metal intoxications implicated in numerous pathologies. The MexBrain team currently numbers 12 people and has a family of patents registered in its name.

MexBrain has been supported since its creation by the Institut Lumière Matière (Université Lyon 1 / CNRS) from which it originated, SATT Pulsalys and the Auvergne-Rhône-Alpes region. It raised over €6 million in March 2021 for its Series A from Financière Arbevel, Bpifrance, Kreaxi, Buffavent Holding and Angelor.

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