Lys therapeutics

Lys Therapeutics secures funding from The Michael J. Fox Foundation to accelerate the development of its drug candidate in Parkinson's disease

$600,000 intended for funding the completion of preclinical research on Lys Therapeutics' first-in-class monoclonal antibody, paving the way for a clinical trial in Parkinson's disease

Lyon & Caen, France, 15 March 2023 – Lys Therapeutics, a French biotechnology company pioneering a revolutionary approach to treat patients suffering from neurodegenerative or neurovascular disorders, announced today that it has received more than $600,000 in funding from The Michael J. Fox Foundation for Parkinson's Research (MJFF) Translational Pipeline Program. This funding from a prestigious U.S. patient organization dedicated to the fight against Parkinson's disease is further confirmation of the excellence of the research efforts around the mechanism of action of the antibody developed by Lys Therapeutics, Glunozumab.

Lys Therapeutics is a preclinical stage biotechnology company pioneering a revolutionary approach to treat neurological diseases through antagonism of the interaction between the tissue plasminogen activator (tPA) and the NMDA receptor (NMDAr) in blood vessels, leading to the restoration of physiological function of the NMDAr and of the blood-brain barrier (BBB), and the associated neuroinflammatory and neurodegenerative processes. MJFF's funding support in Lys Therapeutics' Parkinson's research is also confirming the acceleration toward a new strategic axis and the use of the company's main drug against neurodegenerative disorders, in addition to its application for the treatment of neurovascular diseases, including ischemic stroke.

The research program promoted by Lys Therapeutics that is the subject of this funding will accelerate the research progress carried out in a several-years long collaboration in the United States by the teams of Prof. Daniel Lawrence at the University of Michigan and in France by the teams of Lys Therapeutics and of Prof. Denis Vivien at INSERM-Caen-Normandy University ("Blood & Brain @Caen-Normandy Institute ").

Lys Therapeutics' monoclonal antibody Glunozumab is based on a revolutionary approach to treat neurological diseases by antagonizing the interaction in blood vessels between a protease overexpressed in patients, tissue plasminogen activator (tPA), and the NMDA receptor (NMDAr), leading to the restoration of the physiological function of NMDAr and the blood-brain barrier (BBB), hence blocking the associated neuroinflammatory and neurodegenerative processes.

The work carried out to date by Prof. Daniel Lawrence's and Prof. Denis Vivien's teams has demonstrated the involvement of endogenous tPA in the pathophysiology of Parkinson's disease, and its role via its interaction with NMDAr in regulating the passage of inflammatory cells in the brain, which is the cause of neuroinflammation and degeneration of dopaminergic neurons.

"MJFF values innovative research that fulfills the unmet needs of people with Parkinson's disease," said Ariana Farrand, PhD, Associate Director of Translational Research at MJFF. "We are proud to support the research of a novel immunotherapy at Lys Therapeutics."

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"Our research has demonstrated the importance of the tPA-NMDA receptor interaction in our model of Parkinson's disease, and the associated neurodegenerative processes of neuroinflammation. The recognition that this pathway may be active in Parkinson's disease suggests that the use of an antibody to block this mechanism may be a promising approach for the treatment of this debilitating disease," explains Prof. Daniel A Lawrence, Department of Internal Medicine and Department of Molecular & Integrative Physiology at the University of Michigan.

"Professor Daniel A Lawrence's work demonstrates once again the involvement of the tPA-NMDAr interaction in the pathophysiology of a neurological disease, in this case Parkinson's disease, as also demonstrated in other neurodegenerative and neurovascular disorders. We are very pleased that the monoclonal antibody developed initially in our laboratory may have an application for patients with Parkinson's disease, in addition to the work carried out previously in stroke and multiple sclerosis," said Prof. Denis Vivien, PU-PH and Director of the Blood and Brain Institute @ Caen-Normandie Institute.

"We sincerely thank The Michael J. Fox Foundation for its trust and assistance in identifying the potential of the preliminary work done in collaboration with Professors Lawrence and Vivien's teams in the hope of better treating Parkinson's disease patients. The support from The Michael J. Fox Foundation will allow us to significantly accelerate our preclinical and clinical developments, and to expand our presence in the United States in addition to Europe," said Manuel Blanc, CEO and co-founder of Lys Therapeutics.

About Parkinson's Disease

Parkinson's disease is a degenerative brain disorder associated with motor symptoms (slow movements, tremors, rigidity and imbalance) and other complications including cognitive, mental health, sleep, pain and sensory problems.
Worldwide, disability and mortality from Parkinson's disease are increasing faster than any other neurological disorder. The prevalence of the disease has doubled in the last 25 years. According to the World Health Organization (WHO), more than 8.5 million people had Parkinson's disease in 2019, causing 329,000 deaths. There are approximately 272,500 patients in France, with 25,000 new cases occurring each year. In the United States, there are about 1 million Parkinson's patients and 60,000 new cases each year. Actor Michael J Fox, himself suffering from Parkinson's disease, has chosen to dedicate his Foundation to the fight against this disease and to the emergence of new treatments.

About Lys Therapeutics

Lys Therapeutics is a biotechnology company pioneering a revolutionary approach to treat patients suffering from neurodegenerative or neurovascular disorders with high unmet medical needs. Its main drug is a first-in-class monoclonal antibody, **Glunozumab**, displaying an exclusive and groundbreaking mechanism of action.

An endogenous protease called **tissue plasminogen activator** (tPA) has been demonstrated to be involved in the pathophysiology of neurological diseases such as **multiple sclerosis, Parkinson's disease, ischemic stroke** and other neurodegenerative disorders through its overexpression and binding to NMDA receptors (NMDAr) present on vascular endothelial cells and regulating blood brain barrier (BBB) permeability. Hyperactivation of vascular NMDA receptors leads to BBB dysfunction via increased permeability **allowing transmigration of toxic inflammatory cells to the brain parenchyma** resulting in severe **neuroinflammation** and ultimately **neuronal degeneration.**

By preventing the tPA-NMDAr interaction within the blood vessels, Glunozumab restores both the physiological function of the NMDAr and the blood-brain barrier **(no disruption of their basal functions)**, thus blocking the associated **neuroinflammatory and neurodegenerative processes.**

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This unique mechanism of action implies that **Glunozumab does not need to cross the BBB to act on the central nervous system**, a major advantage for the treatment of neurological diseases.

Find out more: lystherapeutics.com

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