UCB and University of Lille anti-tau immunotherapy research highlighted in prestigious international scientific journal ‘Brain’

- Research demonstrates potential for anti-tau immunotherapy in treatment of Alzheimer’s and other tau-driven diseases including progressive supranuclear palsy (PSP).
- Findings, combined with previous *in vitro* research, highlight important differences between tau antibodies.
- Expanding evidence base supports UCB’s decision to progress clinical studies of its anti-tau immunotherapy candidate in humans.

Brussels, Belgium, May 2nd, 2019, 07:00 (CEST): UCB Biopharma, and a team of scientists from *Inserm* (*Institut national de la santé et de la recherche médicale*, the French National Institute of Health and Medical Research), led by Dr. Luc Buée, CNRS research professor at the University of Lille, France, have demonstrated the beneficial effects of anti-tau immunotherapy in a murine model of Alzheimer’s disease, published in the current online edition of the international scientific journal ‘Brain’.¹

The research set out to evaluate two antibodies targeting tau in an *in vivo* model to determine their effects on disease onset and progression in mice injected with extracts from Alzheimer’s disease brains and a second mouse model designed to evaluate spread of disease.

The study found that the novel UCB antibody targeting a central epitope on tau effectively blocked the onset of disease in mice by preventing the formation of neurofibrillary tangles. The antibody also prevented the spread of pathologic tau protein to other parts of the brain in mice,
which is commonly associated with disease progression in Alzheimer’s disease. The other antibody evaluated, which targeted a different tau epitope, was less efficacious at blocking tau-induced pathology, highlighting the impact of the choice of tau epitope on in vivo efficacy.

UCB has previously studied a series of antibodies against tau that have the in vitro ability to block tau aggregation. In murine models, where the pathology is initiated by injecting brain extracts from patients with Alzheimer's disease, some antibodies pre-selected in vitro block tau aggregation. In addition, these antibodies prevent the spread of neuronal degeneration within the brain of the mouse.

Describing the research, Dr. Morvane Colin from the University of Lille, France, who co-directed this research with Dr. Jean-Philippe Courade of UCB explained: “Not all antibodies targeting tau are equally effective. Indeed, in this study and a previous in vitro study, antibodies targeting the most central part of tau protein showed potential for improved efficacy.”

Tau protein is one of the major proteins that aggregate to lead to neuronal death in many neurodegenerative diseases, including Alzheimer's disease and progressive supranuclear palsy. Immunotherapy targeting extracellular tau protein is a new and promising therapeutic approach for these pathologies.

Results from this animal study, coupled with the characterization of these antibodies by UCB, has supported the start of clinical studies in humans.

Dr. Martin Citron, Head UCB Neuroscience explained: “These data, when considered together with previously published in vitro studies, suggest that the choice of a tau epitope could be a critical determinant of therapeutic efficacy of tau antibodies. We are excited to progress our clinical program to explore the potential benefits of our anti-tau antibody in neutralizing pathological species present in brains of people with Alzheimer's disease and PSP.”

The journal paper is available online via the following link: https://academic.oup.com/brain/article-lookup/doi/10.1093/brain/awz100.

For further information:
About the University of Lille, CHU-Lille, Inserm, France “Alzheimer & tauopathies” Team
The Alzheimer & Tauopathies laboratory (University of Lille, CHU-Lille, Inserm, France), led by Luc Buée, is interested in the molecular, cellular and physiological aspects of Alzheimer's disease and dementia. This team is part of LabEx DISTALZ (a French consortium dedicated to Alzheimer's disease) and the LICEND: Lille Center of Excellence for neurodegenerative disorders. http://lucbee.fr/. For more information, visit: http://crjpa.fr/en/alzheimer-and-tauopathies/team-1-presentation/

About UCB
UCB, Brussels, Belgium (www.ucb.com) is a global biopharmaceutical company focused on the discovery and development of innovative medicines and solutions to transform the lives of people living with severe diseases of the immune system or of the central nervous system. With around 7 500 people in approximately 40 countries, the company generated revenue of € 4.6 billion in 2018. UCB is listed on Euronext Brussels (symbol: UCB). Follow us on Twitter: @UCB_news

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References