About TauRx Therapeutics Ltd – Pioneering new treatment pathways

TauRx Therapeutics Ltd was created to help bring to market potential treatments and diagnostic solutions in a range of neurodegenerative disorders, based on a new research approach in this area of medicine. The company was founded by Professor Claude Wischik, a research scientist and clinician from the University of Aberdeen who pioneered and pursued the research, and the late Dr. K M Seng, a clinician and investor from Singapore.

TauRx has its company headquarters in Singapore and its primary research facilities in Aberdeen, UK, where the team includes highly skilled and internationally recognised scientists and pharmaceutical experts in drug discovery and development.

Since its founding, TauRx has focused on developing a novel treatment for Alzheimer's disease based on targeting tau tangles in the brain which were originally discovered by Dr Alois Alzhiemer in 1907.

Alzheimer's disease and tau as a new therapeutic target

There are two defining features of Alzheimer's disease - the build-up of tangles of tau protein inside neurons and amyloid plaques outside them[1]. In 1991, the Wischik team discovered that the spread of tau tangles, which are made up of abnormal fibres of tau protein inside neurons, are highly correlated with the clinical progression of dementia and concluded that the tau tangle pathway is the main driver of Alzheimer's disease.

Amyloid plaques, the second lesion found in the brains of Alzheimer's patients, have been the focus of many other research approaches but have to date been poorly correlated with the presence and progression of dementia.

30 years of research – to present day

TauRx's tau aggregation inhibitors (TAIs) have arisen from nearly 30 years of research, and work by undoing the tau tangles that cause dementia, thereby potentially slowing and even arresting memory loss.[2] The Company's first-generation TAI, rember®, showed promising results in a Phase 2 clinical trial[3] and the second-generation TAI, LMTX®, a novel chemical entity with an improved bioavailability profile, has recently completed Phase 3 clinical trials involving over 1,900 patients and comprising three separate studies: two in Alzheimer's disease and one in the rare neurodegenerative disorder, behavioural variant frontotemporal dementia (bvFTD).

An abstract from the first of its two Phase 3 trials in Alzheimer's disease was presented at the 2016 Alzheimer's Association International Conference (AAIC) in Toronto, Canada, in July and the results were published online in *The Lancet* in November 2016.[4]

Top-line results from the second Phase 3 trial in Alzheimer's disease, in mild patients only, were presented at the 2016 Clinical Trials in Alzheimer's Disease (CTAD) conference in San Diego, USA in December and TauRx will shortly submit a paper containing more detailed results and analysis for publication in a peer-reviewed journal.

Results from the Phase 3 trial in bvFTD were presented for the first time at the 10th International Conference in Frontotemporal Dementias (ICFTD) in Munich in September 2016.

Based on the results from both trials, TauRx is planning further Phase 3 trials for LMTX® in Alzheimer's disease, details of which will be shared by the company when appropriate.

The company is also developing a pipeline of new small-molecule TAIs, immunotherapeutics and imaging ligands for use in the poorly-served field of neurodegenerative diseases and is looking at other pathologies, outside of Alzheimer's disease, with a particular interest in Parkinson's disease and other neurodegenerative disorders based on protein aggregation.

References

1. Alzheimer's Association (2016) Alzheimer's Disease Facts and Figures. Available at: http://www.alz.org/documents_custom/2016-facts-and-figures.pdf. Accessed February 2017

2. Wischik CM, et al. (2014) Tau-aggregation inhibitor therapy for Alzheimer's disease. Biochem Pharmacol 88:529-39.

3. Wischik CM, Staff RT, Wischik DJ, et al. (2015) Tau aggregation inhibitor therapy: an exploratory Phase 2 study in mild or moderate Alzheimer's disease. J Alzheimers Dis 44:705–720.

4. Gauthier S, et al. Efficacy and safety of tau-aggregation inhibitor therapy in patients with mild or moderate Alzheimer's disease: a randomized, controlled, double-blind, parallel-arm, phase 3 trial. The Lancet 2016. Available at: http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)31275-2/fulltext Accessed 25 November 2016.