

Press release

Discovery provides model for Alzheimer's breakthrough

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Researchers at the University of Sydney have made a major breakthrough that will lead to a greater understanding of the causes of and treatments for neurodegenerative diseases.

At present neither Alzheimer's disease (AD) nor Frontotemporal dementia (FTD) can be cured. Therefore, it is important to model the human diseases in animals to determine what is causing them and to develop a cure for these debilitating diseases.

Exciting new work by Dr Lars Ittner and Professor Jürgen Götz from the University's Brain and Mind Research Institute, which is published this week in the *Proceedings of the National Academy of Sciences**, goes some way to providing an answer to these problems.

The paper describes a novel mouse strain of Pick's disease, a form of Frontotemporal dementia, that reproduces, for the first time, Parkinsonism (resting tremor, muscle rigidity, bradykinesia, and postural instability) in a mouse model.

"The mice even show a reduced footstep length that is reminiscent of Parkinson's disease," said Professor Götz. The researchers could also show that a single dose of L-Dopa (which is used to treat Parkinson's patients) caused a marked improvement in the transgenic mice.

The researchers, who are based at the Alzheimer's and Parkinson's Laboratory of the Brain and Mind Research Institute of the University of Sydney, could show that it is impaired transport along the long axons of nerve cells, which causes the observed phenotype.

"Specifically, we could show that transport is not generally impaired but rather that specific types of cargoes are not transported properly from the cell body to the synapses," said Professor Götz.

Ittner and Götz are now in the process of developing strategies to overcome the transport impairment in their mice. The researchers are convinced that with their unique model of Pick's disease, FTD-associated Parkinsonism and memory impairment, they will be able to contribute to the finding of a cure of these diseases.

* [Ittner LM, Fath T, Ke YD, Bi M, van Eersel J, Li KM, Gunning P, Götz J.](#) Parkinsonism and impaired axonal transport in a mouse model of frontotemporal dementia. Proc Natl Acad Sci U S A. 2008 Oct 2.

For further information contact Prof. Jürgen Götz on +61 2 9351 0789 or jgoetz@med.usyd.edu.au