

‘What we do must translate to effective and sustainable drug therapy’



PROFESSOR LARS ITTNER

NeuRA’s Prof Lars Ittner is a world leader in ageing and neurodegeneration research. Educated in Germany as a medical doctor and later in Switzerland, Prof Ittner combines his medical understanding with his molecular expertise to translate today’s discoveries into tomorrow’s drug treatments for patients suffering from neurodegenerative conditions.

CURRENT PROJECTS:

Understanding the cause of Alzheimer’s disease.

This project has – for the first time – identified how the two hallmark proteins amyloid- β and tau orchestrate the disease, leading to brain degeneration and loss of cognition. Now Prof Ittner’s team is working on interfering with this process to eventually halt progression of the disease.

Enhance clearance of toxic waste products from the brain.

Accumulation of proteins that have undergone aged-dependent modifications that render them toxic to brain cells is involved in the development of dementia. Prof Ittner’s team has identified a key step in this process and is now providing first approaches for enhancing clearance of these protein deposits from the brain.

Antibody therapies for dementia.

This project takes advantage of the ability of the human immune system to produce proteins, called antibodies to get rid of toxic proteins. In boosting antibody production against those modified proteins that cause the brain to degenerate, Prof Ittner’s team has achieved stabilisation of disease progression even in advance models of Alzheimer’s disease.

Brain and nervous system research matters because:

Based on projections of population ageing and growth, the number of **people with dementia** will reach almost

400,000

by 2020

(that's equivalent to the capacity of four MCGs)



and around **900,000** by 2050.

Dementia is the **second leading cause of death in Australia**



There are approximately **25,100** people in Australia with younger onset dementia

(that's equivalent to the capacity of 29.4 Airbus A380's)

An estimated **1.2 million** people are involved in the care of a person with dementia



By the 2060s, spending on dementia is set to outstrip that of any other health condition.

It is projected to be \$83 billion (in 2006-07 dollars), and will represent around

11% of health and residential aged care sector spending



NeuRA

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