Neurodegenerative Diseases

Stereology based … of course!

With a strong academic background in neuroscience and neurostereology we have conducted several preclinical studies of neurodegenerative diseases in state-of-the art preclinical rodent models of e.g. Parkinson and Alzheimer Disease.

It is all about sampling

Stereology is considered the gold standard for estimation of histological changes and assessing therapeutic effects in neurodegeneration models. With total numbers – not ratios – the method is unbiased by tissue processing artefacts!

Alzheimer Disease models

At Gubra, we have investigated regional plaque and tau load following long-term liraglutide (GLP-1) treatment in double APP/PS1 transgenic and Tau301L mouse models of Alzheimer's disease. Read papers here and here.

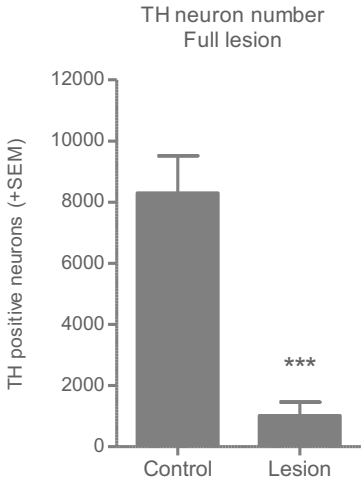
Hippocampal CA1 neuron loss

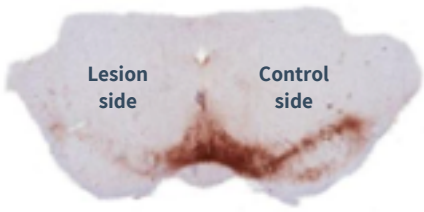
Using optical and physical fractionator designs, we have investigated hippocampal neuron loss in senescence-accelerated mouse prone 8 (SAMP8) mice, a model of age-related sporadic AD, and in a mouse model (rTg4510) carrying the human tau (hTau).

Parkinson Disease model

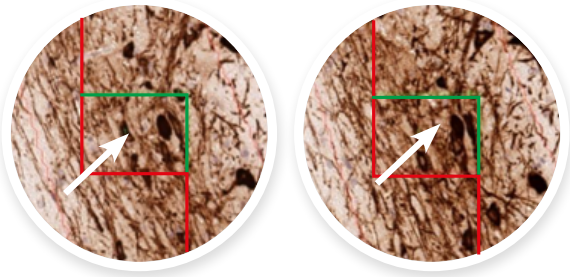
In animal models of Parkinson Disease (PD), estimation of dopaminergic neurons numbers and projections is imperative for model phenotyping and assessment of drug treatment effects. We are experienced with both 6-OHDA and MPTP models. See also our imaging platform.

Tau load in
Tau301L mouse





TH neuron loss in 6-OHDA Parkinson model



The optical disector for counting neurons