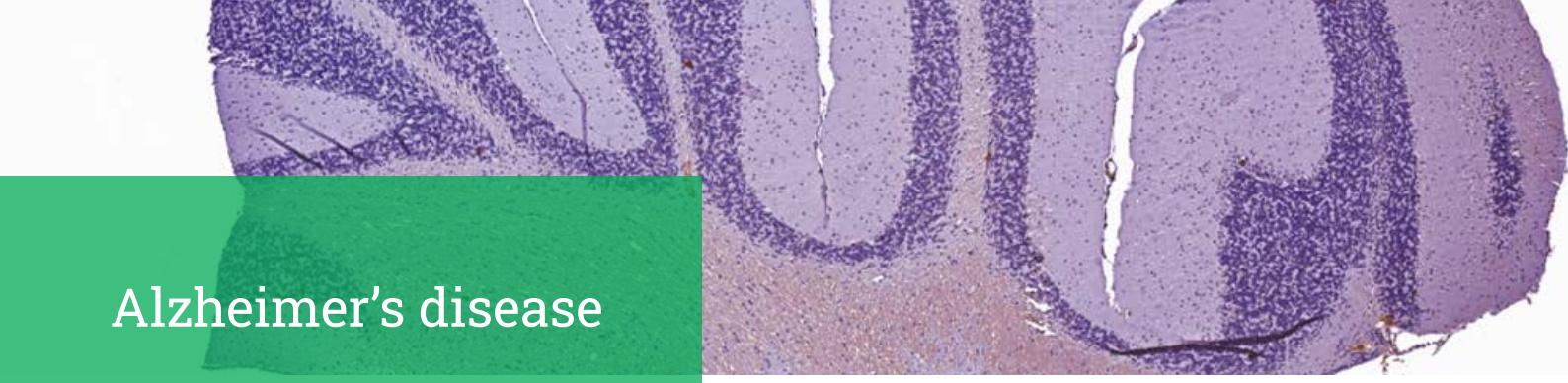


Alzheimer's disease

Gubra provides whole-brain quantitative data on histopathological hallmarks and therapeutic endpoints in mouse models of Alzheimer's disease and tauopathies.

Key models of Alzheimer's disease

Determine brain-wide drug therapeutic effects in rodent models of Alzheimer's disease (AD). We offer ex vivo studies on several mouse models of Alzheimer's disease, with data on transgenic APP/PS1 models (ARTE10, hAPPSwe/PS1ΔE, hAPPLon/PS1A246E), tauopathy models (Tg4510, hTauP301L) and senescence-accelerated dementia (SAMP8 mouse).

Key model traits

- Plaque and tangle deposition assessed by unbiased whole-brain quantitative 3D imaging.
- Neuronal loss and brain atrophy assessed by unbiased stereology.

Diet	Regular chow (Altromin 1324)	Rodent models with key histological hallmarks of AD.
Strain	Commercial models	

Study outline

Termination:
+ Cardiac perfusion fixation with NBF and isolation of whole brains

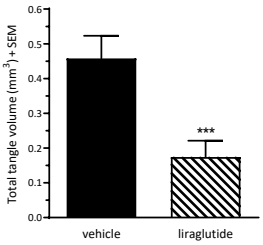
Immunohistochemistry:
+ iDISCO with anti-βA
+ Congo Red staining
+ Tissue Clearing

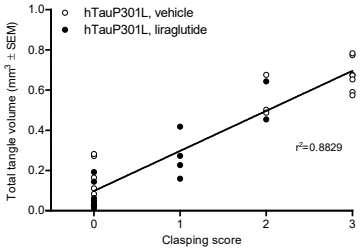
Microscopy:
+ Light sheet ultramicroscope imaging

Image Analysis:
+ Quantification of β-amyloid plaques, absolute numbers.
+ Quantification of β-amyloid plaques, total volume.
+ Quantification of brain volume.

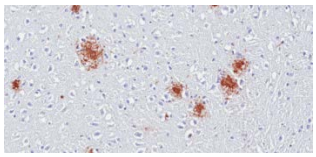
Whole-brain plaque and tangle burden

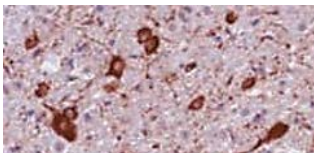
Stereological assessment of phosphorylated Tau burden (neurofibrillary tangle volume) in hTauP301L mice (**left**). Correlation between disease progression (clasping score) and total tangle volume (**right**).

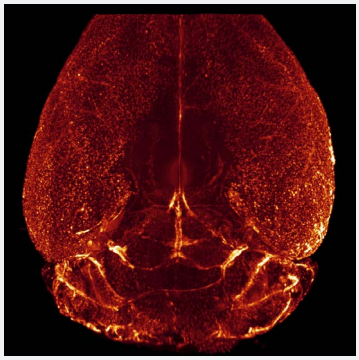




Plaque and tangle immunohisto-chemistry in AD mouse models.

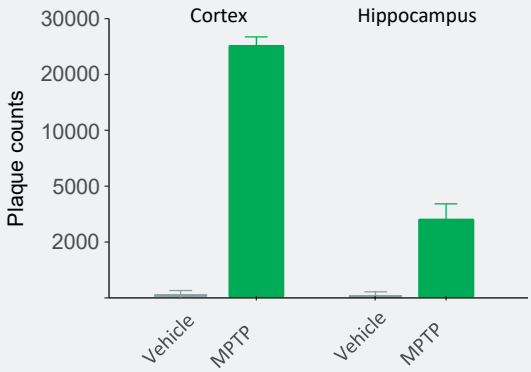


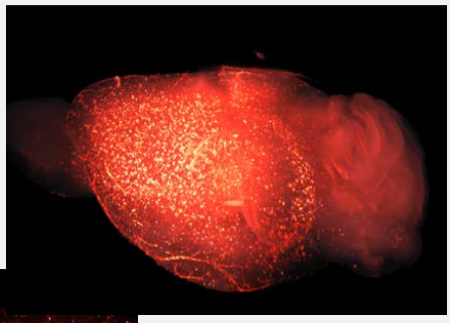


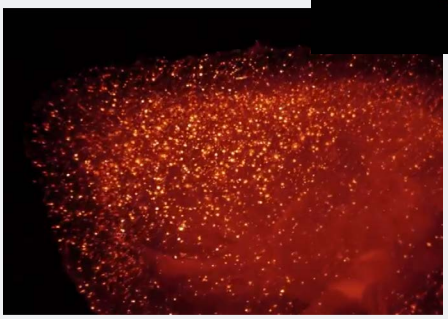


Drug distribution and whole-brain plaque burden

Brain distribution of aducanumab-like antibody following intravenous administration in transgenic APP/PS1 mice - dorsal (**top left**). Whole brain plaque volume as determined by Congo red staining (**below**).







Cortical distribution of plaques labelled with CongoRed.

Neuronal loss and brain atrophy

Stereological quantification of hippocampal neuronal loss in a transgenic mouse tauopathy model (rTg4510) of frontotemporal dementia (**left**). Whole-brain 3D visualization of cortical atrophy in rTg4510 mice (**right**).