



## Overview of in vivo and in vitro Preclinical Assays

### Scope of application

- CNS disorders (stroke, trauma, Alzheimer, Parkinson)
- Neuroprotection and Neuroregeneration
- Neurogenesis and Stem Cell Transplantation
- Memory Deficits
- Mouse Phenotyping

### *Global Ischemia*

Transient 2- vessel occlusion in gerbils

Transient 2-vessel occlusion in rats

4-vessel occlusion in rats

### *Focal Ischemia*

Endothelin-induced MCAO in narcotised or freely moving rats

Photothrombotic lesion in rats

Permanent occlusion in mice

Sensorimotor testing: Ladder rung walking, Rotarod, Beam walk

### *Parkinson Model*

MPTP mouse

### *In vitro Neuroprotection (Organotypic hippocampal and coritco-straital slice cultures)*

Oxygen-glucose deprivation (OGD), prpidium iodode and apoptosis assays

Focal trauma (transection of Schaffer collaterals)

Kainate and Staurosporine toxicity

### *Neurogenesis in vivo and in vitro*

Neuro- and gliogenesis, immunohistochemistry and confocal laser scan microscopy

Drug effects on proliferation of endogenous stem cells

Transplantation of stem cells into the rat brain

### *Electrophysiology for testing nootropica and side effects*

Field potential recording in rats in vivo and in vitro (mice in vitro)

LTP and LTD, paired pulse inhibition

### *Basic Pharmacokinetic Services*