



Histochemistry of Stem Cells (*in vivo*)

Scope of application

- Evaluation of endogenous stem cell proliferation and neurogenesis in ischemia and neurodegenerative (e.g. Parkinson's; Alzheimer's) diseases
- Examination of effects of neuroprotective, neuroregenerative and neuromodulatory compounds on cell composition, cell proliferation, neurogenesis and protein expression
- Testing for side effects of proliferation affecting compounds

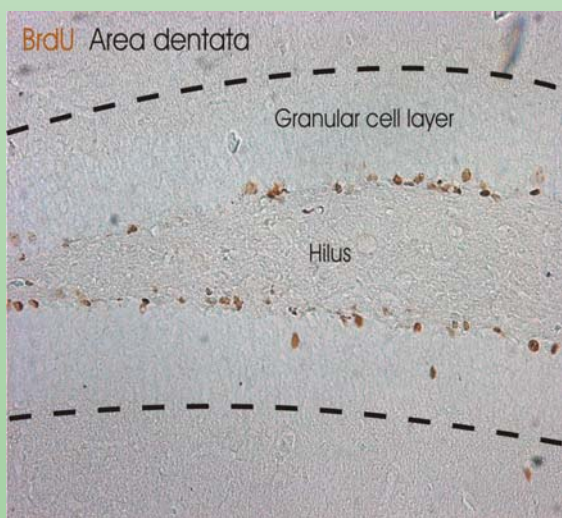
Models

Quantitative evaluation of newborn stem cells

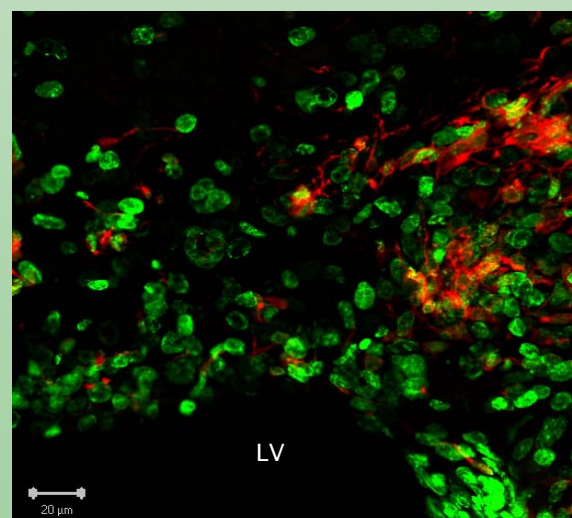
Newborn cells are marked with BrdU via intraperitoneal injection. After decapitation of animals at defined time-points BrdU positive cells are identified immunohistochemically. Quantitative evaluation of BrdU positive cells is performed by using morphometry and cell counting in defined brain areas (e.g. subventricular zone and hippocampal dentate area)

Evaluation of neurogenesis or gliogenesis

The cellular characteristics of BrdU-positive cells can be determined by double labelling with neuronal and glial markers (e.g. β -III-Tubulin, DCX, NeuN / GFAP, S100- β). For evaluation and quantification of double-stained preparations we employ confocal microscopic analysis systems.



BrdU-staining (DAB) in the Area dentata



Doublelabelling BrdU and DCX, SVZ