

prof. Peter Ponsaerts
Laboratory of Experimental Hematology
Neuroinflammation/regeneration group

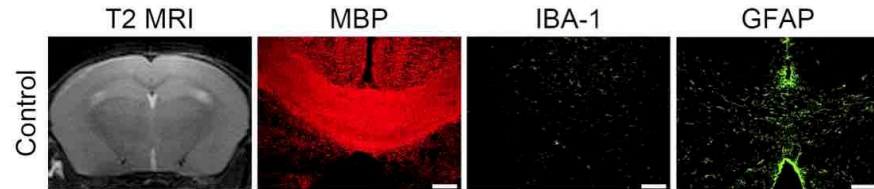
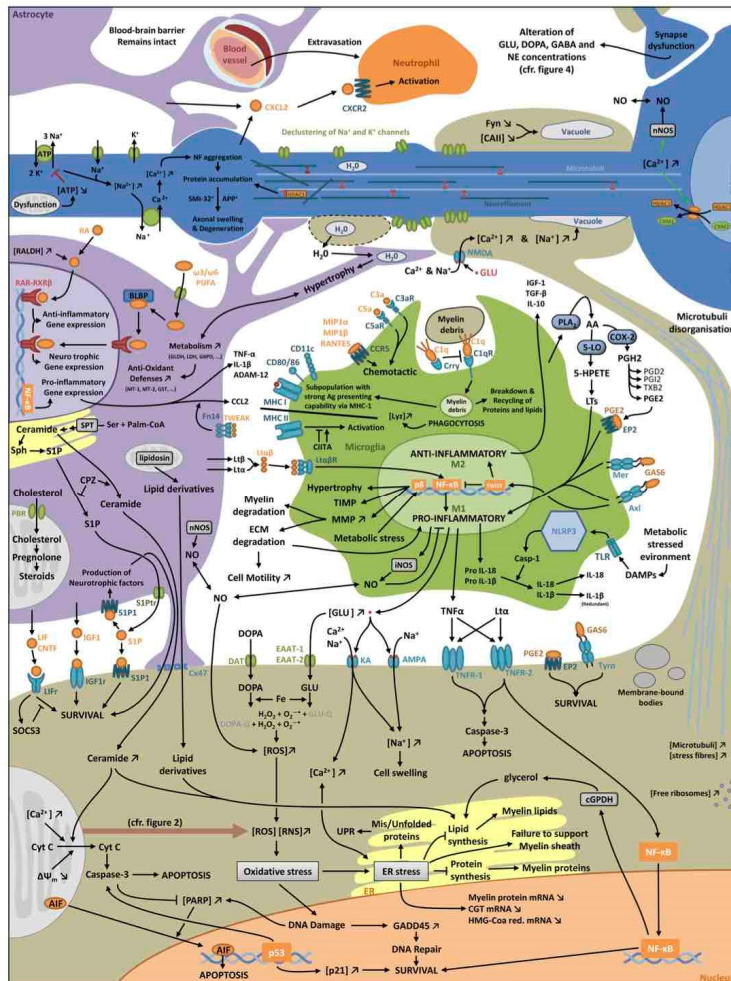


driving neuroinflammation into neuroregeneration

Universiteit Antwerpen

Cuprizone (CPZ) Mouse Model

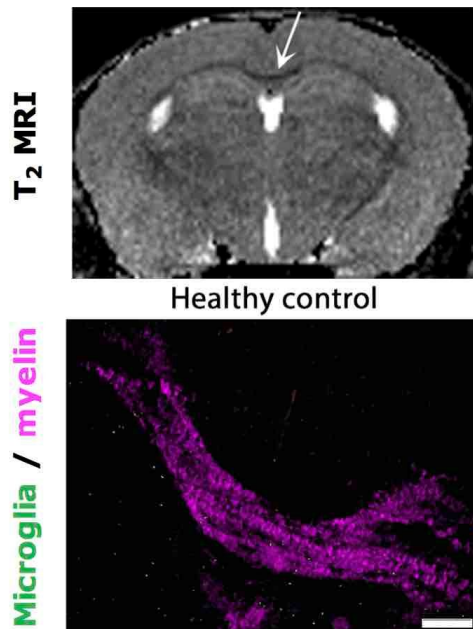
for imaging and study of neuroinflammation/regeneration



straightforward MRI and histological analyses
complex neuroinflammation/regeneration pathways

Interleukin 13

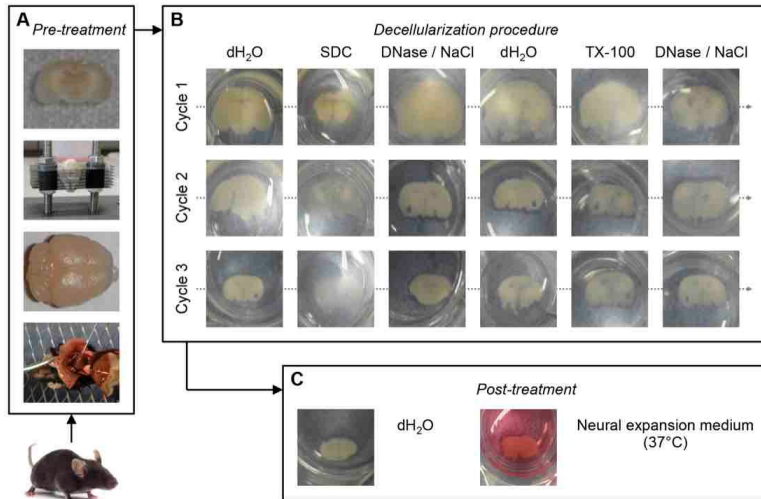
for in vivo modulation of neuroinflammation



targeted delivery of interleukin 13 to the brain or spinal cord,
by means of **lentiviral vector injection** or **implantation of genetically engineered stem cells**,
reduces inflammation and prevents demyelination

Decellularised Brain Tissue Scaffolds

for growth and differentiation of neural stem cells

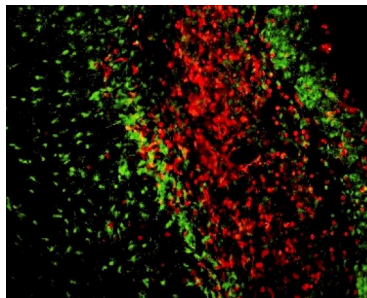


decellularised brain tissue scaffolds
for 3D growth of neural stem cells

non-invasive monitoring by means of
bioluminescence imaging (luciferase)
and **fluorescence microscopy** (eGFP)

iPSC-derived Microglia

for in vitro study and modulation of neuroinflammation

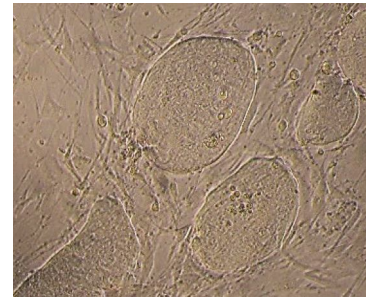


MCAO stroke lesion in
CX3CR1^{eGFP/+}CCR2^{RFP/+}
reporter mouse model

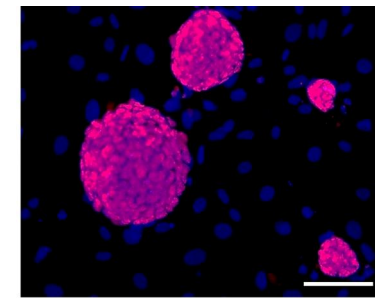
MEF isolation



Sox2, Oct4, Klf4



iPSC colonies

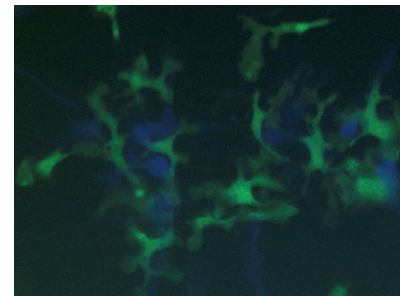


DAPI - DPPA4

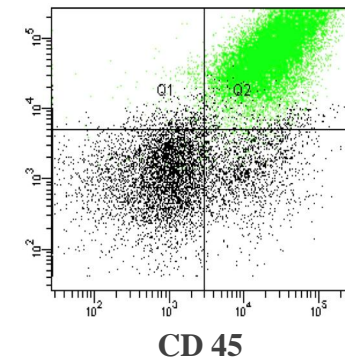
microglia
differentiation



differentiation of eGFP⁺RFP⁻ microglia
from CX3CR1^{eGFP/+}CCR2^{RFP/+} iPSC
in co-culture with astrocytes



astrocytes - microglia



Acknowledgments

neuroinflammation/regeneration group

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