

### *Selected Publications*

Sakry D, **Trotter J.** (2016) The role of the NG2 proteoglycan in OPC and CNS network function. *Brain Research*, 1638: 161-166.

Sakry D, Neitz A, Singh J, Frischknecht R, Marongiu D, Binamé F, Perera SS, Endres K, Lutz B, Radyushkin K, **Trotter J**, Mittmann T. (2014) Oligodendrocyte precursor cells modulate the neuronal network by activity-dependent ectodomain cleavage of glial NG2. *PLoS Biol*, 12(11): e1001993.

Sakry D, Karram K, **Trotter J.** (2011) Synapses between NG2 glia and neurons. *J Anat.*, 219(1): 2-7.

Karram K, Goebbels S, Schwab M, Jennissen K, Seifert G, Steinhäuser C, Nave KA, Trotter J. (2008) NG2-expressing cells in the nervous system revealed by the NG2-EYFP-knockin mouse. *Genesis*, 46(12): 743-757.

White R, Gonsior C, Krämer-Albers EM, Stöhr N, Hüttelmaier S, **Trotter J.** (2008) Activation of oligodendroglial Fyn kinase enhances translation of mRNAs transported in hnRNP A2-dependent RNA granules. *J Cell Biol.*, 181(4): 579-586.

# Bonn Lecture Series in Neuroscience



## More than Myelination: Oligodendrocyte Progenitor Cells as Players in the Neuronal Network

**Jacqueline Trotter, Prof. Dr.**

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Friday, January 27<sup>th</sup> 2017, 15:00h

Life & Brain, Seminar Room, Ground Floor

OPC have been long known to receive signals via their expression of neurotransmitter receptors and to respond to them. This regulates for example myelination. We have shown in the past that OPC also relay signals to neurons, via modulation of neuronal neurotransmitter responses upon binding of the released ectodomain of the NG2 protein, a characteristic marker of these cells. The release of the NG2 ectodomain via ADAM10-mediated cleavage is under control of neuronal network activity. We are studying the expression and local translation of distinct mRNAs at the tips of OPC processes. This is analogous to the local translation of mRNAs at synapses between neurons. We find that a surprising range of mRNAs are locally expressed in OPC processes and their translation into protein appears to be regulated by distinct neurotransmitters. These results shed new light on additional functions of OPC in addition to their role as precursors to myelinating oligodendrocytes.