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Secreted Frizzled related Proteins: from development to neurodegeneration

Proteolytical processing is emerging as a fundamental mechanism to control the strength and timing of cell-to-cell communication, which is at the basis of organ development and function. Members of the ADAM family of *m*etalloproteinases are mayor effectors of this event. We have recently shown that Secreted Frizzled-Related Proteins (sFRPs), soluble molecules previously characterized as Wnt signaling antagonists, bind and inhibit ADAM10 a member of the family responsible for cleavage of the Notch receptor. Thus, genetic inactivation of Sfrps leads to enhanced Notch activity and impaired retinal neurogenesis *(Esteve et al., 2011, Nat. Neurosci).*

I will present data, which support that Sfrp1/2 mediated control of ADAM10 is relevant to other developmental and homeostatic events in the CNS. In particular, I will show that in absence of *Sfrp1/2* the growth of retinal ganglion cell axons is altered due to a abnormal processing of two ADAM10 substrates, L1 and N-Cadherin, previously implicated in axon growth and fasciculation. Furthermore, I will present data indicating that Sfrp1 may represent an important regulator of APP processing in the adult brain.

Host:

Andreas Faissner
Department of Cellmorphology ans Molecular Neurobiology,
Faculty of Biology and Biotechnology, Ruhr-University Bochum

Guests are welcome

International Graduate School of Neuroscience
Ruhr-University Bochum