



Universität
Basel

Research Project

Molecular mechanisms of neuronal synapse formation

Third-party funded project

Project title Molecular mechanisms of neuronal synapse formation

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Organisation / Research unit

Departement Biozentrum

Departement Biozentrum / Cell Biology (Scheiffele)

Department

Project start 01.08.2018

Probable end 31.07.2022

Status Completed

The assembly and function of neuronal circuits in the central nervous system requires an array of selective cell-cell interactions and the establishment of unique cell type-specific properties. Cell surface interactions and recognition events direct cell migration, targeted growth, recognition of appropriate target cells, and the differentiation of pre- and postsynaptic structures. The specific synaptic connections, the functional synaptic properties of individual connections, and the intrinsic properties of individual classes of neuronal cells are fundamental to neuronal circuit function and – ultimately – animal behavior. The aim of our studies is to understand the molecular mechanisms underlying synaptic specificity programs in the central nervous system. In particular, we are focusing on how RNA-regulatory mechanisms contribute to the spatio-temporal control of neuronal gene expression to coordinate choice of synaptic partners and acquisition of the appropriate functional properties of individual synapses and specific neuronal populations.

Financed by

Swiss National Science Foundation (SNSF)

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