

PI3K/PTEN signaling for synaptic plasticity and social behavior

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The PI3K/PTEN pathway controls important aspects of most physiological processes in the body, from embryonic development, to metabolism or cognitive function. This pathway is critical for neuronal differentiation and survival during brain development, and also for synaptic plasticity in mature neurons during adult life. Understandably, alterations in the PI3K and/or PTEN function have been previously linked to mental disease, such as autism spectrum disorders. However, both developmental functions as well as synaptic plasticity mechanisms are expected to contribute to cognitive function. During this presentation I will describe our latest results on PI3K/PTEN signaling and its contribution to neuronal function and social behavior. Particularly, we will try to decipher specific mechanisms differentially engaged during neuronal development versus acute synaptic plasticity events, and their cognitive consequences.