

## **Role of intracellular trafficking of AMPAR during LTP**

Bonnet C., Pecoraro V., Charpentier J., Choquet D. and Coussen F.

Interdisciplinary Institute for Neuroscience, UMR5297, Université de Bordeaux,  
33076 Bordeaux, France

Abundance of AMPA receptors (AMPA) at synapse is essential for the establishment and maintenance of synaptic function. Their synaptic localization is dependent on a highly dynamic exocytosis, endocytosis and plasma membrane mobility events.

Using our new biochemical tool combined with photonic live imaging, we controlled and followed the intracellular transport of tagged GluA1 containing receptors in cultured rat hippocampal neurons. Analyzes are performed for GluA1 WT and mutants of GluA1 C-terminus domain in basal condition and during LTP. In organotypic hippocampal slices we combine imaging and electrophysiology experiments to analyze the impact of intracellular transport of AMPAR on LTP.

Localization of AMPAR is regulated by their intracellular trafficking thru interaction of their C-terminus domains with different intracellular partners. These interactions play a major role in the exocytosis and localization of the receptor at the plasma membrane both in basal condition of during cLTP. In hippocampal slice intracellular transport of AMPAR plays a major role during LTP.