

“The reciprocal GABAergic septo-hippocampal connection: target selectivity and function related to theta oscillations”

Tamas Freund, PhD

Institute of Experimental Medicine of the Hungarian Academy Sciences
Budapest

Ecole Polytechnique Fédérale de Lausanne (EPFL)
Swiss Federal Institute of Technology Lausanne

July 8, 2016

The talk will summarize how decades of research involving functional anatomical and electrophysiological tools, as well as their multiple combinations led to a better understanding of the mechanism of generation and possible function of hippocampal theta oscillations. The remarkable selectivity of the GABAergic septohippocampal pacemaker cells in targeting GABAergic hippocampal interneurons led to the electrophysiological demonstration of disinhibition, and to the identification of relationships of interneuronal activity to various phases of theta. This shed new light not only on the roles of different interneuron types in hippocampal circuits, but also on the possible roles of theta activity in encoding and retrieval of information.

.