

CONTROL AND MODULATION OF HIPPOCAMPAL OLM INTERNEURONS IN MEMORY FORMATION

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CONTROL AND MODULATION OF HIPPOCAMPAL OLM INTERNEURONS IN MEMORY FORMATION

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Research Abstract

Neuronal wiring patterns are specific connections within the nervous system necessary for cognitive processes and behavior. Specific insight into circuit functionality is required to provide further knowledge into neuronal signaling and their dysfunctions in disease. Conditions in which defective neuronal circuitry may be the underlying cause are represented by psychiatric and neurologic disorders,

such as schizophrenia, depression, and Alzheimer's.

Selective interference with or ablation of the functionality of aberrant axonal projections or certain neuronal populations has proven efficient to better understand these systems. We here propose to investigate neuronal circuitry and identify

genetic determinants of specific interneuron populations and their function.

Combined with other powerful methods, including electrophysiology, pharmacology, optogenetics and in-vivo recordings, we strive to be a state-of-the art laboratory for interrogation of neuronal microcircuitry. This proposal will analyze contributions from defined populations of interneurons in functions including motor control and memory. It will provide insights into the functionality of local interneurons in the hippocampus that control memory formation. This application

will also address the role of modulatory input to the hippocampus, including the exploration of the novel transporter VAAT. Thus, the approach proposed here will interrogate functionality of circuits that are compromised in disorders of memory, such as Alzheimer's Disease and dementia.

Further information available at:

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