

## Abstract

### **To determine the functional relevance of circadian Fabp7 expression in memory consolidation**

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Fatty-acid binding protein 7 (Fabp7) is closely related to sleep/wake cycle and regulated in a circadian pattern. To investigate whether the expression affects learning and memory behavior, we used the Drosophila model. Transgenic lines of FABP7 were conditionally expressed in order to test the hypotheses that FABP7 altered the formation of long-term memory (LTM). Unlike the circadian rhythm, much less has been known for the behavioral state and the homeostatic regulation of sleep control at the molecular and genetic levels. Previous results show that all synapses are affected in a similar manner, and the molecules that have a diurnal pattern of expression at synapses throughout the brain after sleep/wake cycle would be excellent candidates for cellular correlates responsible for the homeostatic arm of sleep regulation, and they are also targets of therapeutic approaches to neurological diseases. Therefore, identifying and investigating the targeted synaptic molecules involved in the sleep/wake rhythm is important for a better understanding of mental illness.

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