



MOLECULAR AND CELLULAR NEUROBIOLOGY

12h15 a.m.

TUESDAY
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2022

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https://www.sleep.unibe.ch/research/aims/index_eng.html



Paradoxical somato-dendritic decoupling supports cortical plasticity during REM sleep

REM sleep is associated with the consolidation of emotional memories encoded in mammals. Here, we found that REM sleep is associated with a somato-dendritic decoupling in pyramidal neurons of the prefrontal cortex, using simultaneous 2-photon calcium imaging and electrophysiological recordings in sleeping mice. This decoupling reflects a shift of inhibitory balance between PV and SOM interneurons. REM-specific optogenetic suppression of dendritic activity led to a loss of danger versus safety discrimination during associative learning and a lack of synaptic plasticity, whereas optogenetic release of somatic inhibition resulted in enhanced discrimination and synaptic potentiation.

Collectively, our results demonstrated that somato-dendritic decoupling during REM sleep promotes opposite synaptic plasticity mechanisms that optimize emotional response to future behavioral stressors.

Salle de Conférence du CBI :
118 route de Narbonne, 31400 Toulouse

Et sur Zoom: <https://univ-tlse3-fr.zoom.us/j/97605071545>

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