Seminar/Talk

Cerebellar regulation of associative motor learning

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Host: Ryuichi Shigemoto

The question how memories are formed in our brain is one of the major challenges for neuroscientists today. A widely used paradigm to study learning and memory formation is Pavlovian eyeblink conditioning. More than four decades of intense research have led to a very precise delineation of the neural circuits involved, showing that the cerebellum is both essential and sufficient for this type of learning. During my talk I will first focus on the role of the cerebellar cortex. Single-unit electrophysiological recordings from Purkinje cells and interneurons in the cerebellar cortex during eyeblink conditioning in awake behaving mice demonstrate that their neural activity can be directly correlated with the newly acquired behavior. Second, I will focus on the neurophysiological activity of the cerebellar nuclei and, moreover, show that eyeblink conditioning can induce robust axonal growth and even formation of new synapses in the cerebellar nuclei. Finally, I will talk about the importance of neuro-modulation by the amygdala during eyeblink conditioning.

Thursday, August 24, 2017 04:00pm - 05:00pm
Seminar Room, Lab Building East

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