

平成29年度「医学特論」大学院特別セミナー

## 第36回 最先端脳科学セミナー

### Function and mechanisms of memory retrieval

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場所: 薬学部研究棟II 7階 セミナー室 8

#### 要旨

Memory retrieval is not a passive process. Instead, it triggers a number of processes including reconsolidation and extinction of fear memory, that either reinforce or alter (update) stored information. I have investigated mechanisms by which the fate of memory is determined after retrieval (especially, reactivated memory is either reconsolidated or extinguished), at the molecular, cellular and circuit levels. Using contextual fear conditioning and inhibitory avoidance tasks, I found that (1) consolidation, reconsolidation and extinction show similar but distinct molecular mechanisms including signal transductions, gene expression and protein degradation and modifications, (2) memory reconsolidation and extinction are not independent processes; these memory phases interact one another at behavioral, anatomical and molecular levels, (3) memory reconsolidation and extinction are regulated by distinct neurons and neural circuits. These findings indicate the dynamic nature of memory. Furthermore, I have tried to understand molecular mechanisms of memory retrieval and recently, found that hippocampal circadian clock regulates efficiency of memory retrieval via cAMP-PKA signaling pathway. I will talk about these findings.

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