大学院生命融合科学教育部・特別講義・セミナー

第 27 回 最先端脳科学セミナー

Brain circuits for triggering and reversing fear memories

演 者: Joshua Johansen チームリーダー

理研 BSI 記憶神経回路研究チーム

日 時: 2016 年 1 月 22 日（金）17:00～18:30

場 所: 日医工オーディトリアム（医薬イノベーションセンター1F）

Neural circuits underlie our ability to interact in the world and to learn adaptively from experience. Fear conditioning is a simple form of associative learning that provides a powerful model system to study associative plasticity. Dr. Johansen has shown that Optical activation of lateral amygdala pyramidal cells instructs associative fear learning and demonstrated that in vivo optogenetic control of LA neurons provides compelling support for the idea that fear learning is instructed by aversive stimulus-induced activation of LA pyramidal cells(1,2)

In RIKEN Brain Science Institute, Dr. Johansen provided an insight into how aversive experiences trigger aversive memories by showing that Hebbian plasticity is not sufficient alone in moderate conditions which are similar to our daily life to produce physiological and behavioral effects unless neuromodulatory systems were coactivated (3)

In this seminar Dr. Johansen will talk about brain circuits for triggering and reversing fear memories, and how this could be implementation for preventing the excessive aversive memories which could lead to anxiety disorder as Post Traumatic Stress Disorder (PTSD).

Reference

1) ***PNAS***, 107: 12692-12697, 2010
2) ***Cell***, 147: 509-524, 2011
3) ***PNAS***, 111: E5584- E5592, 2014

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