

神経細胞生物学セミナー

Ventro-dorsal hippocampal pathway gates novelty-induced contextual memory formation

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場所 東京大学医学部教育研究棟 13階 第5セミナー室

セミナー要旨

Novelty facilitates memory formation and is detected by both the dorsal and ventral hippocampi. While dentate granule cells (GCs) in the dorsal hippocampus are known to mediate the formation of novelty-induced contextual memories, the required pathways and mechanisms remain unclear. Here we demonstrate that a powerful excitatory pathway from mossy cells (MCs) in the ventral hippocampus to dorsal GCs is necessary and sufficient for driving dorsal GCs activation in novel environment exploration. In vivo Ca^{2+} imaging in freely moving mice indicated that this pathway relays environmental novelty. Furthermore, manipulation of ventral MCs activity bidirectionally regulates novelty-induced contextual memory acquisition. Our results show that ventral MCs activity gates contextual memory formation through an intra-hippocampal interaction activated by environmental novelty.

多数の皆様のご来聴をお待ちしております。

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