



Center for
Neuroscience,
ART

第53回脳神経科学コアセンターセミナーのお知らせ

日時 2017年7月27日(木) 17:00-18:00

会場 医学部 第1セミナー室
(医学部仮設校舎2階)

演題 Functional roles of reciprocal connections
in mouse fronto-parietal cortex

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Cortical areas are intertwined with networks of reciprocal connectivity. Such connectivity distributes cortical computation across multiple areas. However, the circuit logic underlying the connectivity is unknown. Here we report the basic principle behind how reciprocal connectivity contributes to communication between sensory and motor cortices in mice. Using a newly developed eye movement task, combined with electrical stimulation, anatomical tracing and two-photon calcium imaging, we identified a small area of motor cortex (MOs) that controls eye movements, encoding both motor commands and visual information. We found similar encoding in higher visual areas of the parietal cortex (Vhigh), which reciprocally connected to the MOs. Despite the intermixed signals in the two areas, the information flow between them was selective: motor information was conveyed preferentially from MOs to Vhigh, and sensory information in the opposite direction. We propose that the reciprocal connectivity streamlines information flow, implementing localized processing in the distributed network.

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