

第90回 埼玉大学脳科学セミナー

主催: 埼玉大学脳末梢科学研究センター

Discovering novel brain circuits via optogenetics

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The well-defined anatomy of the cerebellum make this brain region an ideal platform for understanding how neural circuits process information. We have used optogenetics-based photostimulation to map the function and spatial organization of cerebellar local circuits with unprecedented speed and precision. Our results have uncovered several novel features of information processing by cerebellar interneurons that may be of general value in understanding interneuron function throughout the brain. We have also identified the first new cerebellar molecular layer interneuron since the days of Cajal; we have called these **Ito cells** in honor of the enormous contributions of Masao Ito to our understanding of cerebellar function. Ito cells are unique because they are the only interneurons to receive feedback inhibition from Purkinje cells; this property may allow Ito cells to play an important role in motor learning by synchronizing the activity of neighboring Purkinje cells.

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