Title: New Insights from the Brain Mapping Project in Japan: Modeling Human Diseases with Genetically Modified Common Marmosets

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Abstract

Brain/MINDS (Brain Mapping by Integrated Neurotechnologies for Disease Studies) is a national brain project started by Japan in 2014. With the goal of developing a unique non-human primate animal model, the common marmoset (*Callithrix jacchus*), the project aims to build a multiscale marmoset brain map, develop new technologies for experimentalists, create transgenic lines for brain disease modeling by taking advantage of genetic modification, and integrate translational findings from the clinical biomarker landscape. Namely, by studying the neural networks controlling higher networks controlling higher brain functions in the marmoset, we aim to gain new insights into information processing and disease of the human brain. Brain/MINDS researchers are highly motivated to identify the neuronal circuits responsible for the phenotype of neurological and psychiatric disorders, and to understand the development of these devastating disorders. Brain/MINDS will collaborate with global brain projects to share technologies and resources. In this symposium, I will talk about the plan and progress of Brain/MINDS, especially i) structural and functional mapping of marmoset brains using MRI and genetically encoded activity indicators, and ii) modeling Parkinson disease and Rett syndrome with genetically modified marmosets.

References