

Medicine, Nursing and Health Sciences

Biomedicine Discovery Seminar

Monash Biomedicine Discovery Institute

Sensorimotor regulation of limb movement and its disorder: insights from nonhuman primate studies



Wednesday 30 November, 2016



12.00 – 1.00 pm



**M2 Lecture Theatre
37 Rainforest Walk
Clayton campus**



Presenter

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PhD

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Abstract

Voluntary movements produce a large amount of sensory signals, which might overwhelm the central nervous system if not properly regulated. This regulation is called “gating” and occurs at several levels of the central nervous system. In this talk, I will show that cutaneous sensory-evoked potentials in the spinal cord, primary somatosensory and motor cortex, and premotor cortex in macaque monkeys performing an instructed delay task show modulation in task-relevant manner, and that some of gating could be ascribed to presynaptic inhibition at the spinal level. We also found the pattern of modulation could be different between muscle and cutaneous afferent, suggesting that sensory gating is highly selective process. In addition, I will briefly introduce our recent attempt to generate a transgenic marmoset model of the Spinocerebellar ataxia (SCA3), showing progressive neurological symptoms including motor impairment.

About the presenter

Dr. Seki received his Ph.D. in medical science at Tsukuba University in 1998. He spent four years in the Dept of Physiol. Biophys, Seattle, USA as a HFSP long-term fellow (supervisor: Prof. Eberhard E. Fetz). From 2002 he worked at the Dept. Dev. Physiol, NIPS, Okazaki, Japan as a assistant professor (Head: Prof. Tadashi ISA). Then, he has been moved to the Dept Neurophysiol. of NCNP as director of department in October 2009. His research interests are in system neuroscience of spinal cord circuitry including descending and ascending tract, and spinal reflex systems. He is also interested in generating primate model of the disease of central nervous system and has been established a model of Stroke and Spinocerebellar ataxia (SCA3). using Common Marmoset.

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(http://www.ncnp.go.jp/nin/guide/r_model/index-e.html).



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