

Neuroanatomy and Cellular Neurobiology

1. Staffs and Students (April, 2010)

Professor	Sumio TERADA	
Assistant Professor	Masahiko KAWAGISHI,	Mitsunobu HOSHINO
Technician	Mie TAGUCHI	
Graduate Student	Hiroaki HORI,	Toshiya TERAISHI,
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2. Purpose of Education

Section of neuroanatomy and cellular neurobiology takes charge of basic neuroscience education for medical undergraduate student (Lectures and Wet labs), especially from the morphological point of view.

For graduate school students, we offer introductory courses on both optical and electron microscopy (Lectures and Wet labs), with close relation to molecular and cellular neurobiology.

3. Research Subjects

- 1) Molecular mechanism of intracellular transport, quality control of transporting cargos, and their interrelation (Slow axonal transport and neurodegeneration)
- 2) Development of the real-time detection system of the biomolecular network in vivo and its application to cell biology
- 3) Molecular and cellular biological analysis of neuron-specific small G proteins
- 4) Development of new spectroscopic methods to visualize the localization of biomolecules without fluorescence labeling
- 5) Search for new cellular morphological regulatory factors on cytoskeletal dynamics
- 6) Functional image analysis on neuropsychiatric disorders

4. Publications

1. Terada S, Kinjo M, Aihara M, Takei Y, Hirokawa N. Kinesin-1/Hsc70-dependent mechanism of slow axonal transport and its relation to fast axonal transport. *EMBO J.* 2010 Feb 17;29(4):843-854.
2. Hoshino M, Tsujimoto T, Yamazoe S, Uesugi M, Terada S. Adhesamine, a new synthetic molecule, accelerates differentiation and prolongs survival of primary cultured mouse hippocampal neurons. *Biochem J.* 2010 Mar 29;427(2):297-304.
3. Hori H, Ozeki Y, Teraishi T, Matsuo J, Kawamoto Y, Kinoshita Y, Suto S, Terada S, Higuchi T, Kunugi H: Relationships between psychological distress, coping styles, and HPA axis reactivity in healthy adults. *Journal of Psychiatric Research J Psychiatr Res.* 2010 Oct;44(14):865-73. Epub 2010 Mar 23.
4. Nagashima Y, Suzuki T, Terada S, Tsuji S, Misawa K. Improved signal extraction method for single-pulse heterodyne CARS spectroscopy (Proceedings Paper). *Proc SPIE, 7376 Laser Applications in Life Sciences*, Matti Kinnunen, Risto Myllylä Editors, 73760S, 24 Nov 2010.