

Cell biology

1. Staffs and students (April 2009)

Professor	Takao NAKATA
Associate Professor	Akihiro INOUE
Assistant Professor	Tomohiro ISHII
Research Technician	Satoko NAKAMURA
Graduate Student	Toshiyuki KAKUMOTO

2. Purpose of Education

We teach cell biology II to 1st year medical students, cell structure II to 2nd year medical students, and histology to 3rd year medical students. Cell biology II deals with excitatory cells, and serves as introduction to neuroscience. In cell structure II and histology, we deal with histology of human body. The courses are composed of sets of lecture and laboratory study of tissues and organs. Our goal in undergraduate course is to provide students with fundamental knowledge and skill to analyze microscopic samples of normal human body.

3. Research Subject

We started a new laboratory from April 2009. We are interested in the cellular responses to spatio-temporal activation of signaling molecules. For this purpose, we rewire cellular signaling pathway, combining molecular biology, molecular genetics, live-imaging techniques.

4. Publications

Original Articles

1. Numano F, Inoue A, Enomoto M, Shinomiya K, Okawa A, Okabe S: Critical involvement of Rho GTPase activity in the efficient transplantation of neural stem cells into the injured spinal cord. *Molecular Brain* 2009, 2:37
2. Yamagata Y, Kobayashi S, Umeda T, Inoue A, Sakagami H, Fukaya M, Watanabe M, Hatanaka N, Totsuka M, Yagi T, Obata K, Imoto K, Yanagawa Y, Manabe T, Okabe S : Kinase-dead knock-in mouse reveals an essential role of kinase activity of Ca²⁺/calmodulin-dependent protein kinase IIalpha in dendritic spine enlargement, long-term potentiation, and learning. *Journal of Neuroscience* 2009, 29:7607-18.
3. Leinders-Zufall T, Ishii T, Mombaerts P, Zufall F and Boehm T. Structural requirements for the activation of vomeronasal sensory neurons by MHC peptides. *Nature Neuroscience* 2009, 12:1551-1558.