

Department of Neuropathology

1. Staff and Students (April 2009)

Professor:	Hitoshi Okazawa	
Associate professor:	Yasushi Enokido	
MTT fellow:	Masaki Sone	
Assistant professor:	Takuya Tamura,	Akihiko Komuro
Secretary:	Atsuko Isobe	
Technical Staff:	Tayoko Tajima	
Research scientist:	Shigeki Marubuchi	
Graduate students:	Hikaru Ito,	Hiroki Shiwaku,
	Chan Li,	Min Xu,
	Yoshie Yuki,	Zi-Hyang Chin,
	Risa Shiraishi	
Research trainees:	Sainawer Maimaiti	

2. Purpose of Education

As educational tasks, we have lecture and experiment classes of neuropathology for medical/dental graduate school program and medical school program. We also have general pathology and neuropathology classes for graduate school for health sciences, and clinical anatomical and therapeutic pathology classes for research students. We also guide practical research techniques on neuropathology especially neurodegenerative diseases.

3. Research Subjects

Following studies have been intensively carried out in our laboratory with various techniques including molecular biology, cell biology, biochemistry, Drosophila and mouse models.

- 1) Investigation of molecular pathologies of neurodegenerative diseases.
- 2) Studies on impairment of DNA-repair in neurodegenerative diseases.
- 3) Development of new seed drugs for neurodegeneration.
- 4) Development of new seed drugs for mental retardation.
- 5) Investigation of molecular functions of Oct-3/4

4. Clinical Services

DNA sequence based diagnosis of PQBP1-related mental retardation.

Publications

Original Articles

1. Takahashi K, Yoshina S, Maekawa M, Ito W, Inoue T, Shiwaku H, Arai H, Mitani S, and Okazawa H (2009) Nematode Homologue of PQBP1, a Mental Retardation Causative Gene, Is Involved in Lipid Metabolism. *PLoS One* 4, e4104 .
2. Tamura T, Sone M, Yamashita M, Wanker EE, and Okazawa H (2009) Glial cell lineage expression of mutant ataxin-1 and huntingtin induces developmental and late-onset neuronal pathologies in Drosophila models. *PLoS One* 4, e4262 .
3. Sone M, Uchida A, Komatsu A, Suzuki E, Ibuki I, Asada M, Shiwaku H, Tamura T, Hoshino M, Okazawa H, and Nabeshima Y (2009) Loss of yata, a novel gene regulating the subcellular localization of APPL, induces deterioration of neural tissues and lifespan shortening. *PLoS One* 4, e4466.
4. Takahashi M, Mizuguchi M, Shinoda H, Aizawa T, Demura M, Okazawa H, Kawano K (2009) Polyglutamine tract binding protein-1 is an intrinsically unstructured protein. *Biochimica et Biophysica Acta*. 1794(6):936-43.
5. Ito H, Yoshimura N, Kurosawa M, Ishii S, Nukina N, Okazawa H (2009) Knock down of PQBP1 impairs anxiety-related cognition in mouse. *Human Molecular Genetics*. 18:4539-54
6. Chin JH, Shiwaku H, Goda O, Komuro A, Okazawa H (2009) Neural stem cells express Oct-3/4. *Biochemical and Biophysical Research Communications*. 388(2):247-51
7. Enokido Y, Tamura T, Ito H, Arumughan A, Komuro A, Shiwaku H, Sone M, Foulle R, Sawada H, Ishiguro H, Ono T, Murata M, Kanazawa I, Tomilin N, Tagawa K, Wanker EE, and Okazawa H (2010) Mutant Huntingtin impairs Ku70-mediated DNA repair. *Journal of Cell Biology*. in press