CURRICULUM VITAE

Takaoki Kasahara

ADDRESS

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EDUCATION

1996	B.S., The University of Tokyo
1998	M.S., The University of Tokyo
2001	Ph.D., The University of Tokyo

RESEARCH EXPERIENCE

2001–2003	Research Scientist, RIKEN Brain Science Institute
2003–2006	Special Postdoctoral Researcher, RIKEN
2006–2007	Research Scientist, RIKEN Brain Science Institute
2007–Present	Deputy Laboratory Head, RIKEN Brain Science Institute

AWARDS AND HONORS

1998–2000	Research Fellowship of the Japan Society for the Promotion of Science for Young Scientists
2004	Ando Momofuku Honor Prize, Ando Foundation
2007	Academic Prize, Japanese Society for Biological Psychiatry
2011	Outstanding Presentation Award, Mouse Genetics 2011

TEACHING EXPERIENCE

2007	Lecture at Brain science training program, RIKEN BSI
2010–Present	Adjunct lecturer, Waseda University
2012	Ad-hoc visiting lecturer, The University of Tokyo

MEMBERSHIP

- Japanese Society of Biological Psychiatry (Board Member)
- The Molecular Biology Society of Japan
- The Japan Neuroscience Society

PUBLICATIONS

[Refereed Journal Articles]

1. Fuke, S., Kubota-Sakashita, M., Kasahara, T., Shigeyoshi, Y., and Kato, T. Regional variation in mitochondrial DNA copy number in mouse brain. *Biochim. Biophys. Acta* **1807**, 270–274 (2011).

2. Kasahara, T., Abe, K., Mekada, K., Yoshiki, A., and Kato, T. Genetic variation of melatonin productivity in laboratory mice under domestication. *Proc. Natl. Acad. Sci. USA.* **107**, 6412–6417 (2010).

3. Kubota, M., Kasahara, T., Iwamoto, K., Komori, A., Ishiwata, M., Miyauchi, T., and Kato, T. Therapeutic implications of down-regulation of cyclophilin D in bipolar disorder. *Int. J. Neuropsychopharmacol.* 13, 1355–1368 (2010)

4. Hayashi, A., Kasahara, T., Kametani, M., Kato, T. Attenuated BDNF-induced upregulation of GABAergic markers in neurons lacking *Xbp1*. *Biochem. Biophys. Res. Commun.* **376**, 758–763 (2008).

5. Hayashi, A., Kasahara, T., Kametani, M., Toyota, T., Yoshikawa, T., Kato, T. Aberrant endoplasmic reticulum stress response in lymphoblastoid cells from patients with bipolar disorder. *Int. J. Neuropsychopharmacol.* **4**, 1–11 (2008).

6. Kasahara, T., Kubota, M., Miyauchi, T., Ishiwata, M. and Kato, T. A marked effect of electroconvulsive stimulation on behavioral aberration of mice with neuron-specific mitochondrial DNA defects. *PLoS ONE* **3**, e1877 (2008).

7. Kato, T., Ishiwata, M., Yamada, K., Kasahara, T., Kakiuchi, C., Iwamoto, K., Kawamura, K., Ishihara, H. and Oka, Y. Behavioral and gene expression analyses of *Wfs1* knockout mice as a possible animal model of mood disorder. *Neurosci. Res.* **61**, 143–153 (2008).

8. Hayashi, A., Kasahara, T., Iwamoto, K., Ishiwata, M., Kametani, M., Kakiuchi, C., Furuichi, T. and Kato, T. The role of brain-derived neurotrophic factor (BDNF)-induced *XBP1* splicing during brain development. *J. Biol. Chem.* **282**, 34525–34534 (2007).

9. Kubota, M., Kasahara, T., Nakmura, T., Ishiwata, M., Miyauchi, T., and Kato, T. Abnormal Ca^{2+} dynamics in transgenic mice with neuron-specific mitochondrial DNA defects. *J. Neurosci.* **26**, 12314–12324 (2006).

10. Kasahara, T., Kubota, M., Miyauchi, T., Noda, Y., Mouri, A., Nabeshima, T., and Kato, T. Mice with neuron-specific accumulation of mitochondrial DNA mutations show mood disorder-like phenotypes. *Mol. Psychiatry* **11**, 577–593 (2006).

11. Kakiuchi, C., Iwamoto, K., Ishiwata, M., Bundo, M., Kasahara, T., Kusumi, I., Tsujita, T., Okazaki, Y., Nanko, S., Kunugi, H., Sasaki, T., and Kato, T. Impaired feedback regulation of XBP1 as a genetic risk factor of bipolar disorder. *Nat. Genetics* **35**, 171–175 (2003).

12. Kasahara, T., and Kato, T. A new redox-cofactor vitamin for mammals. *Nature* **422**, 832 (2003).

13. Kasahara, T., Okano, T., Haga, T., and Fukada, Y. Opsin–G_{11}-mediated signaling pathway for photic entrainment of the chicken pineal circadian clock. *J. Neurosci.* **22**, 7321–7325 (2002).

14. Okano, T., Yamamoto, K., Okano, K., Hirota, T., Kasahara, T., Sasaki, M., Takanaka, Y., and Fukada, Y. Chicken pineal clock genes: implication of BMAL2 as a bidirectional regulator in circadian clock oscillation. *Genes Cells* **6**, 825–836 (2001).

15. Hirota, T., Kagiwada, S., Kasahara, T., Okano, T., Murata, M., and Fukada, Y. Effect of brefeldin A on melatonin secretion of chick pineal cells. *J. Biochem.* **129**, 51–59 (2001).

16. Kasahara, T., Okano, T., Yoshikawa, T., Yamazaki, K., and Fukada, Y. Rod-type transducin α-subunit mediates a phototransduction pathway in the chicken pineal gland. *J. Neurochem.* **75**, 217–224 (2000).

17. Matsushita, A., Yoshikawa, T., Okano, T., Kasahara, T., and Fukada, Y. Colocalization of pinopsin with two types of G-protein α-subunits in the chick pineal gland. *Cell Tissue Res.* **299**, 245–251 (2000).

18. Okano, T., Yamazaki, K., Kasahara, T., and Fukada, Y. Molecular cloning of heterotrimeric G-protein α-subunits in chicken pineal gland. *J. Mol. Evol.* **44**, S91–97 (1997).

[Japanese Reviews and Books]

1. Kasahara., T., and Kato, T. Comprehensive analysis of rare variants of mitochondrial DNA polymerase gene (*POLG1*) identified in patients with bipolar disorder. *Jap. J. Biol. Psychiatry* **22**, 97–102 (2011).

2. Kasahara, T. A gene for melatonin synthesizing enzyme. *Jap. J. Mol. Psychiatry* **10**, 312–314 (2010).

3. Kasahara, T. Neuroscience of mood stabilizers and antidepressants. *Psychiatry* **16**, 543–549 (2010).

4. Kasahara, T., and Kato, T. Animal modes for bipolar disorder. *Biol. Sci.* **64**, 59–64 (2010).

5. Noji, N, Kasahara, T., and Asami, T. Approach to the hypothesis of vitamin PQQ. *Kagaku-to-Seibutsu* (The Japan Society for Bioscience, Biotechnology, and Agrochemistry) **46**, 339–345 (2008).

6. Kasahara, T.., and Kato, T. Mitochondrial dysfunctions in bipolar disorder. *Brain Sci. Mental Disord.* (The Japanese Society of Biological Psychiatry) **19**, 107–115 (2008).

7. Kasahara, T. Mice with neuron-specific accumulation of mitochondrial DNA mutations show mood disorder-like phenotypes. *Brain Sci. Mental Disord.* (The Japanese Society of Biological Psychiatry) **18**, 211–221 (2007).

8. Kato, T., and Kasahara, T. An animal model for bipolar disorder. *Jap. J. Mol. Psychiatry* **6**, 405–410 (2006).

9. Kasahara, T. "Handbook of Nutritional Data" [Partial contribution] Dobunshoin, Tokyo, Japan (2006).

10. Kato, T., Kakiuchi, C., Hayashi, A., and Kasahara, T. Endoplasmic reticulum stress in bipolar disorder. *Experimantal Med.* **23**, 2795–2798 (2005).

11. Kasahara, T. PQQ binding motif. *Seikagaku* (The Japanese Biochemical Society) **76**, 1582 (2004).

12. Kasahara, T.,and Kato, T. A mammalian enzyme using pyrroloquinoline quinone as a redox cofactor. *Chemistry and Chemical Industry* (The Chemical Society of Japan) **57**, 239–241 (2004).

13. Kasahara, T.,and Kato, T. Pyrroloquinoline quinone. *J. Med. Technol.* **48**, 104–106 (2004).

14. Kasahara, T.,and Kato, T. Fourteenth vitamin, pyrroloquinoline quinone. *Jap. J. Cli. Nutr.* **103**, 813–817 (2003).

15. Kato, T., and Kasahara, T. Identification of a mammalian enzyme using pyrroloquinoline quinone as a cofactor. *BRAIN Technol. News* **99**, 22–25 (2004).

16. Kato, T., and Kasahara, T. A novel vitamin: pyrroloquinoline quinone (PQQ). *Med. Technology* **32**, 1266–1267 (2003).

17. Kasahara, T. New vitamin on the complex. *Look Japan* **49**, 27 (2003).

18. Kasahara, T.,and Kato, T. Pyrroloquinoline quinone: a new vitamin for mammals. *J. Cli. Exp. Med.* **203**, 228–229 (2003).

19. Kasahara, T. The day when PQQ (pyrroloquinoline quinone) becomes a new vitamin. *Food Correspondence* **389**, 18–19 (2003).

20. Kasahara, T. "The 100 Wonders of the Light" (Samaki, ed.) [Partial contribution] Tokyo Shoseki Co. Ltd., Tokyo, Japan (2001).

21. Kasahara, T.,and Okano, T. Visualizing of the circadian phase of clock cells. *Bioimaging* **7**, 221−226 (1999).

22. Fukada, Y. and Kasahara, T. Pinopsin, an extraretinal photopigment, in "Phototransductions" (Hasunuma, Kimura, Tokunaga, ed.), Springer-Verlag Tokyo, Inc., Tokyo, Japan. (1999).

INVITED TALKS

April, 2012	Biological approach to bipolar disorder. Japanese Ophthalmological Society. Tokyo, Japan.
December, 2011	A possible role of mitochondrial dysfunction in bipolar disorder. The American College of Neuropsychopharmacology. Waikoloa, USA.

May, 2011	Evolution of mice under domestication: melatonin productivity. Japanese Association for Laboratory Animal Science. Tokyo, Japan.
February, 2011	Mitochondrial DNA polymerase (POLG1) and bipolar disorder: from genetics to animal models. RIKEN Mental Disorder Workshop. RIKEN BSI, Wako, Japan.
November, 2010	Genetic variation in melatonin synthesizing enzymes - chance or necessity? Japanese Society for Chronobiology. Tokyo, Japan.
September, 2010	Approach to the mouse pseudoautosomal region. The Genetics Society of Japan. Sapporo, Japan.
September, 2009	Mouse models for bipolar disorder based on rare hereditary diseases. The Japan Neuroscience Society. Kyoto, Japan.
September, 2009	Mitochondrial dysfunction in bipolar disorder. World Congress of Biological Psychiatry Asia-Pacific Congress. Toyama, Japan.
November, 2007	Mitochondrial dysfunction in bipolar disorder, of an animal model and humans. Korean Society of Biological Psychiatry. Seoul, Korea.
September, 2007	Mitochondrial dysfunction in mental disorders. Neuro 2007 (The Japan Neuroscience Society). Yokohama, Japan.
November, 2006	Chronobiology of bipolar disorder model mice. Japanese Society for Chronobiology. Tokyo, Japan.
November, 2004	Molecular basis of bipolar disorder. China-India-Japan-Korea Joint Workshop on Neurobiology and Neuroinformatics. Manesar, India.
July, 2003	Pyrroloquinoline quinone as a vitamin. Invited seminar, The University of Shiga Prefecture. Hikone, Japan.

OUTREACH ACTIVITIES

August, 2012	Talk on brain and neuroscience (given to 10th graders). RIKEN BSI.
February, 2012	Lecture on neuroscience (given to 10–12th graders). Fukui-minami High School, Fukui-shi, Fukui.
December, 2011	Talk on brain and neuroscience (given to 8th graders). RIKEN BSI.
July, 2011	Lecture on brain and neuroscience (given to 5–6th graders). Wako Kids' College, Wako-shi, Saitama.
October, 2010	Talk on brain and neuroscience (given to 10th graders). RIKEN BSI.
July, 2010	Talk on brain and neuroscience (given to 7th graders). RIKEN BSI.
April, 2009–March, 2010	Instructor (given to 5–6th graders). Chofu Science Center, Chofu-shi, Tokyo.

February, 2009	Lecture on neuroscience (given to undergraduates and graduate students). Career Symposium, The University of Tokyo, Tokyo.
February, 2008	Lecture on mental disorders (given to lay people). Science Cafe (Art@RIKEN), Tokyo.
September, 2006	Lecture on neuroscience (given to 10–12th graders). Kumagaya Girls' Senior High School, Kumagaya-shi, Saitama.
July, 2006	Lecture on science (given to 3rd–4th graders). Kazo-minami Elementary School, Kazo-shi, Saitama.
December, 2004	Lecture on molecular biology (given to prep school students). Kawai-juku Prep School, Nagoya-shi, Aichi.
February, 2004	Lecture and experiment about DNA extraction from foods (given to 9th graders). Kazo-Kita Junior High School, Kazo-shi, Saitama.
January, 2004	Lecture on neuroscience (given to science teachers of junior high and high schools). Saitama Prefectural Education Center. Saitama-shi, Saitama.
December, 2003	Lecture on discovery of vitamins (given to lay people). Umetaro Suzuki Honoring Association. Shizuoka-shi, Shizuoka.
November, 2003	Lecture on neuroscience and discovery of vitamins (given to 10th graders). Fujishima High school, Fukui-shi, Fukui.
November, 2003	Lecture on molecular biology (given to prep school students). Kawai-juku Prep School, Nagoya-shi, Aichi.
March, 2003	Lecture and experiment, DNA extraction from foods (given to 5th graders). Kazo-minami Elementary School, Kazo-shi, Saitama.

[February, 2013]