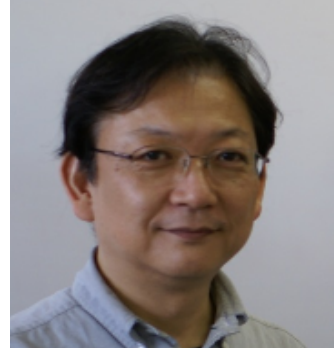


Kazuhiko Yamaguchi



Deputy Laboratory Head
Laboratory for Motor Learning Control
RIKEN Brain Science Institute

2-1 Hirosawa Wako
Saitama 351-0198
Japan
Phone: +81-48-462-1111 ext. 7335
E*-mail: kazuhiko.yamaguchi@riken.jp

Education

1975 BSc in Biology, Faculty of Science, University of Tokyo
1980 PhD in Biology, School of Science, University of Tokyo
1987 PhD in Physiology, School of Medicine, University of Tokyo

Research Experience

1984-1985 Postdoctoral Fellow, Purdue University
1985-1993 Research Associate,
National Institute for Physiological Sciences
1993-1999 Associated Professor, Medical School, Kyorin University
1999-2000 Senior Scientist, BSI RIKEN
2000-present Deputy Laboratory Head, BSI RIKEN

Awards and Honors

1983-1984 JSPS Scholarship

Educational Experience (Part time Lecturer)

1997-2002	Medical School, University of Tokyo
2003-2004	Medical School, Keio University
2004	Faculty of Science, University of Tokyo
2008	Faculty of Science, University of Tokyo
2012	Faculty of Science, University of Tokyo

Publications

- Kaneko M, Yamaguchi K, Eiraku M, Sato M, Takata N, Kiyohara Y, Mishina M, Hirase H, Hashikawa T, Kengaku M. (2011) Remodeling of monopolar Purkinje cell dendrites during cerebellar circuit formation. PLoS One 6(5): e20108. Epub May 31
- Yamashita N, Mosinger B, Roy A, Miyazaki M, Ugajin K, Nakamura F, Sasaki Y, Yamaguchi K, Kolattukudy P, Goshima Y. (2011) CRMP5 (Collapsin Response Mediator Protein 5) regulates dendritic development and synaptic plasticity in the cerebellar Purkinje cell. J. Neurosci. 31: 1773-1779.
- Shiina N, Yamaguchi K and Tokunaga M. (2010) RNG105 deficiency impairs the dendritic localization of mRNAs for Na⁺/K⁺ ATPase subunit isoforms and leads to the degeneration of neuronal networks. J. Neuroscience 30: 12816-12830.
- Endo, S., Shuto, F., Le, D.T., Okamoto, T., Ikeda, T., Suzuki, M., Kawahara, S., Yanagihara, D., Sato, Y., Yamada, K., Sakamoto, T., Kirino, Y., Hartell, N.A., Yamaguchi, K., Itohara, S., Naim, A., Greengard, P., Nagao, S., Ito, M. (2009) Dual involvement of G-substrate in motor learning revealed by gene deletion. Proc.Natl.Acad.Sci.USA 106: 3525-3530.
- Tanaka, M., Yamaguchi, K., Tatsukawa, T., Nishioka, C., Nishiyama, H., Theis, M., Willecke K., Itohara, S. (2008) Lack of connexin43-mediated Bergmann glial gap junctional coupling does not affect cerebellar long-term depression, motor coordination or eyeblink conditioning. Front.Behav.Neurosci. 2: 1-14.
- Tatsukawa, T., Chimura, T., Miyakawa, H., Yamaguchi, K. (2006) Involvement of basal protein kinase C and extracellular signal-regulated kinase 1/2 activities in constitutive internalization of AMPA receptors in cerebellar Purkinje cells. J. Neurosci. 26: 4820-4825.
- Koekkoek, S.K.E.***, **Yamaguchi, K.***, **Milojkovic, B.A.***, **Dortland, B.R.***, Ruigrok, T.J.H., Maex, R., De Graaf, W., Smit, A.E. VanderWerf, F., Bakker, C.E., Willemsen, R., Ikeda, T., Kakizawa, S., Onodera, K., Nelson, D.L., Mientjes, E., Joosten, M., De Schutter, E., Oostra, B.A., Ito, M., and De Zeeuw, C.L. (2005) Deletion of FMR1 in Purkinje cells enhances parallel fiber LTD, enlarges spines, and attenuates cerebellar eyelid

conditioning in fragile X syndrome. *Neuron* 47: 339-352. (***These authors contributed equally**)

- Nakayama T, Momoki-Soga T, Yamaguchi K, Inoue N. (2004) Efficient production of neural stem cells and neurons from embryonic stem cells. *NeuroReport* 15 : 487-491.
- Hama H, Hara C, Yamaguchi K, Miyawaki A. (2004) PKC signaling for global enhancement of excitatory synaptogenesis in neurons is triggered by local contact with astrocytes. *Neuron* 41:405-415.
- Nakada C, Ritchie K, Oba Y, Nakamura M, Hotta Y, Iino R, Kasai RS, Yamaguchi K, Fujiwara T, Kusumi A. (2003) Accumulation of anchored proteins forms membrane diffusion barriers during neuronal polarization. *Nature Cell Biol.* 5: 626-632.
- Yamaguchi K, Tanaka M, Mizoguchi, A, Hirata Y, Ishizuka H, Kaneko K, Miyoshi J, Takai Y. (2002) A GDP/GTP exchange protein for the Rab3 small G protein family up-regulates a postdocking step of synaptic exocytosis in central synapses. *Proc. Natl. Acad. Sci.USA* 99: 14536-14541.
- Agarwala KL, Ganesh S, Suzuki T, Akagi T, Kaneko K, Amano K, Tsutsumi Y, Yamaguchi K, Hashikawa T, Yamakawa K.(2001) Dscam is associated with axonal and dendritic features of neuronal cells. *J. Neurosci.Res.* 66:337-346.
- Kohara K, Ogura A, Akagawa K, Yamaguchi K. (2001) Increase in number of functional release sites by cyclic AMP-dependent protein kinase in cultured neurons isolated from hippocampal dentate gyrus. *Neurosci.Res.* 41:79-88.
- Kogure M, Tajima O and Yamaguchi K, (2000) Suppressive effects of serotonin on the autaptic transmission in the cultured rat hippocampal neurons. In "Slow synaptic responses and modulation" Eds: Kuba,K., Higashida H, Brown DA and Yoshioka T. Springer pp. 266-267 .
- Watanabe, T., Fujiwara, T., Komazaki, S., Yamaguchi, K., Tajima, O., Akagawa, K. (1999) HPC-1/syntaxin 1A suppresses exocytosis of PC12 cells. *J.Biochem.* 125: 685-689.
- Osanai M, Takada M, Fujiwara T, Akagawa K and Yamaguchi K. (1999) Analysis of the regulatory mechanisms of synaptic exocytosis using an autapse of cultured rat hippocampal neuron. In "Neural development" Eds:Uyemura K, Kawamura K and Yazaki T. Springer, pp.481-485
- Yamaguchi K, Takada M, Fujimori K, Tsuchimoto Y, Kushima Y, Sanada M, Fujiwara T and Akagawa K. (1997) Enhancement of synaptic transmission by HPC-1 antibody in the cultured hippocampal neuron. *NeuroReport* 8: 3641-3644.
- Fujiwara T, Yamamori T, Yamaguchi K and Akagawa K. (1997) Interaction of HPC-1/syntaxin 1A with the cytoskeletal protein, tubulin. *Biochem. Biophys.I Res. Comm.* 231: 352-355.
- Nagamatsu S, Nakamichi Y, Yamaguchi K, Sawa H. and Akagawa K. (1997) Overexpressed

syntaxin 1A/HPC-1 inhibits insulin secretion via a regulated pathway, but does not influence glucose metabolism and intracellular Ca²⁺ in insulinoma cell line bTC3 cells. *Biochem Biophys Res Comm* 231: 89-93.

Yamaguchi K, Nakayama T, Fujiwara T and Akagawa K. (1996) Enhancement of neurite-sprouting by suppression of HPC-1/syntaxin 1A activity in cultured vertebrate nerve cells. *Brain Res.* 740: 185-192.

Yamaguchi K and Akagawa K. (1994) Exocytosis relating proteins in the nervous system. *Neuroscience Research* 20: 289-292.

Yamaguchi K and Ohmori H. (1993) Suppression of the slow K-current by cholinergic agonists in cultured chick cochlear ganglion neurones. *J. Physiology (London)* 464: 213-228,.

Nakajima Y, Stanfield PR, Yamaguchi K and Nakajima S. (1991) Substance P excites cultured cholinergic neuron in the basal forebrain: In "The basal forebrain", Eds. Napier TC, Kalivas PW and Hanin I, Plenum, New York. pp. 157-167.

Yamaguchi K, Nakajima Y, Nakajima S and Stanfield PR. (1990) Modulation of inwardly rectifying channels by substance P in cholinergic brain neurones in culture. *J. Physiol. (London)* 426: 499-520.

Yamaguchi K. (1990) Enhancement of the Ca²⁺-current by a serum-factor in cultured dorsal root ganglia neurons of the adult guinea-pig. *Brain Res.* 529: 286-293.

Yamaguchi K and Ohmori H. (1990) Voltage gated and chemically gated ionic channel in the cultured cochlear ganglion neurone of the chick. *J. Physiology (London)* 420: 185-206.

Yamaguchi K, Satou M and Ueda K. (1988) Induced wave and its generation mechanism in the carp olfactory bulb. *Comp. Biochem. Physiol.* 89A: 605-608.

Masuko S, Nakajima Y, Nakajima Y and Yamaguchi K. (1986) Noradrenergic neurons from the locus ceruleus in dissociated cell culture: Culture methods, morphology and electrophysiology. *J. Neurosci.* 6: 3229-3241.

Kasai H, Kameyama M, Yamaguchi K and Fukuda J. (1986) Single transient K channels in mammalian sensory neurons. *Biophys.J.* 49: 1243-1247

Nakajima Y, Nakajima S, Leonard RJ and Yamaguchi K. (1986) Acetylcholine raises excitability by inhibiting the fast transient Potassium current in cultured hippocampal neurons. *Proc. Natl.Acad. Sci. USA* 83: 3022-3026.

Fukuda J, Yamaguchi K, Akimoto S and Tada Y. (1985) NGF-dependent and independent growth of neurites from sympathetic ganglion cells of the aged human in a serum-free culture. *Neurosci.Res.* 2: 460-471.

Stanfield PR, Nakajima Y and Yamaguchi K. (1985) Substance P raises neuronal membrane excitability by reducing inward rectification. *Nature* 315: 498-501.

- Yamaguchi K and Ueda K. (1984) Rhythmic discharge of mitral cells in the carp olfactory bulb. Brain Res. 322: 378-381.
- Nakajima Y, Nakajima S, Obata K, Carlson CG and Yamaguchi K. (1985) Dissociated cell culture of cholinergic neurons from nucleus basalis of Meynert and other basal forebrain nuclei. Proc. Natl. Acad. Sci. USA 82: 6325-6329.
- Satou M, Fujita I, Ichikawa M, Yamaguchi K and Ueda K. (1983) Field potential and intracellular potential studies of the olfactory bulb in the carp: Evidence for a functional separation of the olfactory bulb into lateral and medial subdivisions. J. Comp. Physiol. A 152: 319-333.
- Fukuda J, Kurata T and Yamaguchi K. (1983) Specific reduction in Na-currents after infection with Herpes simplex virus in cultured mammalian nerve cells. Brain Res. 268: 367-371
- Fukuda J, Kurata T, Yamamoto A and Yamaguchi K. (1983) Morphological and physiological Studies on the cultured nerve cells from guinea-pig infected with Herpes simplex virus in vitro. Brain Res. 262: 79-89.
- Fukuda J, Kurata T, Yamamoto A and Yamaguchi K. (1983) Morphological and physiological Studies on the cultured nerve cells from guinea-pig infected with Herpes simplex virus in vitro. Brain Res. 262: 79-89.
- Fukuda J and Yamaguchi K (1981) Nerve cells of senescent mouse grown in tissue culture. Neurosci. Letters 28: 331-335.
- Fukuda J and Yamaguchi K. (1981) Electrophysiological properties of tissue-cultured nerve cells from senescent mouse. Neurosci. Letters 26: 263-268.
- Fukuda J, Kameyama M and Yamaguchi K. (1981) Breakdown of cytoskeletal filaments selectively reduced Na and Ca spike in cultured mammal neurones. Nature 294: 82-85.
- Satou M, Oka Y, Fujita I, Yamaguchi K, Nagai T, Koyama Y, Shirahata S and Ueda K.(1980) Effect of preoptic lesions on male reproductive behavior in the hime salmon, land-locked *Onchorhynchus nerka*. In: Integrative control functions of the brain. Vol.III Ed: Ito M, Tsukahara K, Kubota K, Yagi K. Kodansya Ltd , Tokyo and Elsevier, Amsterdam. pp. 333-335,.

Invited Talk

- Yamaguchi, K. (2010) AMPA-receptor trafficking in cerebellar Purkinje cell: A kinetic analysis using a whole-cell recording technique. IBRO School of Neuroscience Hong Kong.
- Yamaguchi, K. (2010) AMPA-receptor trafficking in cerebellar Purkinje cell: A kinetic analysis.

Symposium "Neural circuit: Develop and Plasticity" 5th Congress of FAONS and XXVIII Annual Meeting of IAN. Lucknow India

Yamaguchi, K. (2008) Role of actin in constitutive and activity-dependent trafficking of AMPA-receptors in the cerebellar Purkinje cell. US-Japan Brain Research Collaborative Program Pacific Grove, California USA, Feb 2008.

Yamaguchi, K., Tatsukawa., Gireesh-Dharmaraj E., Nagao, S. and Ito, M (2007.) Constitutive and activity dependent trafficking of AMPA-receptors in cerebellar Purkinje cell. 7th IBRO World Congress of Neuroscience, Melbourne Australia.

Yamaguchi, K. (2007) Regulatory roles of actin dynamics in constitutive and activity-dependent trafficking of AMPA-receptors in cerebellar Purkinje cell. The 2nd Japan-Korea Neuroscience Symposium (A Satellite Symposium to Neuro2007)"Cutting Edge of Neuroscienc Yokohama

Yamaguchi K. (2006) AMPA-receptor trafficking and synaptic plasticity in cerebellar Purkinje cell. Cooperative Joint Conference on Neuroscience in Gifu, Invited speaker. Gifu, Japan.

Yamaguchi, K. (2005) Autapse: the simplest neuronal network. Lecture at College of Medicine, National Taiwan Univ. Taipei Taiwan.

Yamaguchi K. (2005) Regulation of synaptic expression of AMPA-receptor by membrane-trafficking in cerebellar Purkinje cell. 2nd NHRI Conference on Neuroscience Miaoli Taiwan.