

CURRICULUM VITAE

1) Name: Kozo Kaibuchi

2) Sex: Male

3) Nationality: Japanese

4) Affiliation and Position: Center for Medical Science,

Fujita Health University

1-98 Dengakugakubo, Kutsukake-cho, Toyoake, Aichi 470-1192, Japan

Director

5) Family Relation: Sachiko Kaibuchi Wife

Two Daughters

6) Training and Employment:

Education Institutions and Places of Employment	Fields of Study and Position	Period	Degree
Kobe University School of Medicine	General Medicine	From April, 1974 to March, 1980	M.D. (March, 1980)
Graduate School of Kobe University School of Medicine (Supervised by Prof. Y. Nishizuka)	Biochemistry	From April, 1980 to March, 1984	Ph.D. (April, 1984)
Department of Biochemistry, Kobe University School of Medicine	Biochemistry, (Research Associate)	From April, 1984 to January, 1989	
DNAX Research Institute of Molecular and Cellular Biology	Molecular Biology (Postdoctoral Fellow)	From October, 1985 to November, 1987	
Department of Biochemistry, Kobe University School of Medicine	Biochemistry (Assistant Professor)	From February, 1989 to August, 1990	
Department of Biochemistry, Kobe University School of Medicine	Biochemistry (Associate Professor)	From September, 1990 to March, 1994	
Division of Signal Transduction, Nara Institute of Science and Technology	Biochemistry and Molecular Biology (Professor)	From April, 1994 to March, 2001	
Department of Cell Pharmacology, Nagoya University Graduate School of Medicine	Biochemistry and Molecular Biology (Professor)	From April, 2000 to March, 2021	
Institute for Comprehensive Medical Science*, Fujita Health University	Biochemistry and Neuroscience (Director)	From April, 2021 to Present	

* Center for Medical Science as of April 2022

7) Professional Societies

Japanese Society of Cell Biology (Board member)
Japanese Biochemical Society (Board member)
Japanese Neurochemical Society
Japanese Molecular Biology Society (Board member)
Japanese Society for Neuroscience (Board member)
Japanese Society for Pharmacology
American Society of Cell Biology
Society for Neuroscience

8) Awards

Tokai Yomiuri Medical Award (2008)
Tokizane Memorial Award (Japanese Society of Neuroscience)(2009)
Chunich Cultural Award (2011)
Ebashi Memorial Award (Japanese Society of Pharmacology) (2015)
The Medal of Honor with Purple Ribbon (2017)

Selected papers

1. Amano, M., Mukai, H., Ono, Y., Chihara, K., Matsui, T., Hamajima, Y., Okawa, K., Iwamatsu, A., **Kaibuchi, K.** Identification of a putative target for Rho as a serine-threonine kinase protein kinase N *Science* 271, 648-650 (1996)
2. Kimura, K., Ito, M., Amano, M., Chihara, K., Fukata, Y., Nakafuku, M., Yamamori, B., Feng, J., Nakano, T., Okawa, K., Iwamatsu, A., and **Kaibuchi, K.** Regulation of myosin phosphatase by Rho and Rho-associated kinase (Rho-kinase) *Science* 273, 245-248 (1996)
3. Amano, M., Chihara, K., Kimura, K., Fukata, Y., Nakamura, N., Matsuura, Y., and **Kaibuchi, K.** Formation of actin stress fibers and focal adhesions by Rho-kinase. *Science* 275, 1308-1311 (1997)
4. Kuroda, S., Fukata, M., Nakagawa, M., Fujii, K., Nakamura, T., Ookubo, T., Izawa, I., Nagase, T., Nomura, N., Shoji, I., Matsuura, Y., Yonehara, S., and **Kaibuchi, K.** Role of IQGAP1, a target of the small GTPases Cdc42 and Rac1, in the regulation of E-cadherin-mediated cell-cell adhesion. *Science* 281, 832-835 (1998)
5. Fukata, Y., Kimura, K., Oshiro, N., Saya, H., Matsuura, Y and **Kaibuchi, K.** Association of the myosin-binding subunit of myosin phosphatase and moesin: dual regulation of moesin phosphorylation by Rho-kinase and myosin phosphatase. *J. Cell Biol.* 141, 409-418 (1998)
6. Fukata, Y., Oshiro, N., Kinoshita, N., Kawano, Y., Matsuoka, Y., Bennett, V., Matsuura, Y. and **Kaibuchi, K.** Phosphorylation of adducin by Rho-kinase plays a crucial role in cell motility, *J. Cell Biol.*, 145(2), 347-361 (1999)
7. Inagaki, N., Chihara, K., Arimura, N., Menager, C., Kawano, Y., Matsuo, N., Nishimura, T., Amano, M., and **Kaibuchi, K.**, CRMP-2 induces axons in cultured hippocampal neurons, *Nature Neurosci.* 4, 781-782 (2001)
8. Fukata, Y., Itoh, T. J., Kimura, T., Menager, C., Nishimura, T., Shiromizu, T., Watanabe, H., Inagaki, N., Iwamatsu, A., Hotani, H., and **Kaibuchi, K.** CRMP-2 binds to tubulin heterodimers to promote microtubule assembly. *Nat Cell Biol* 4, 583-591. (2002)
9. Fukata, M., Watanabe, T., Noritake, J., Nakagawa, M., Yamaga, M., Kuroda, S., Matsuura, Y., Iwamatsu, A., Perez, F., and **Kaibuchi, K.** Rac1 and Cdc42 capture microtubules through IQGAP1 and CLIP-170. *Cell* 109, 873-885. (2002)
10. Nishimura, T., Fukata, Y., Kato, K., Yamaguchi, T., Matsuura, Y., Kamiguchi, H., and **Kaibuchi, K.** CRMP-2 regulates polarized Numb-mediated endocytosis for axon growth. *Nat Cell Biol* 5, 819-826. (2003)
11. Nishimura, T., Kato, K., Yamaguchi, T., Fukata, Y., Ohno, S., and **Kaibuchi, K.** Role of the PAR-3-KIF3 complex in the establishment of neuronal polarity. *Nat Cell Biol* 6, 328-334. (2004)
12. Watanabe, T., Wang, S., Noritake, J., Sato, K., Fukata, M., Takefuji, M., Nakagawa, M., Izumi, N., Akiyama, T., and **Kaibuchi, K.** Interaction with IQGAP1 Links APC to Rac1, Cdc42, and Actin

- Filaments during Cell Polarization and Migration. *Dev Cell* 7, 871-883. (2004)
13. Nishimura, T., Yamaguchi, T., Kato, K., Yoshizawa, M., Nabeshima, Y. I., Ohno, S., Hoshino, M., and **Kaibuchi, K.** PAR-6-PAR-3 mediates Cdc42-induced Rac activation through the Rac GEFs STEF/Tiam1. *Nat Cell Biol* 7, 270-277. (2005)
 14. Yoshimura, T., Kawano, Y., Arimura, N., Kawabata, S., Kikuchi, A., and **Kaibuchi, K.** GSK-3beta regulates phosphorylation of CRMP-2 and neuronal polarity. *Cell* 120, 137-149. (2005)
 15. Taya, S., Shinoda, T., Tsuboi, D., Asaki, J., Nagai, K., Hikita, T., Kuroda, S., Kuroda, K., Shimizu, M., Hirotsune, S., Iwamatsu, A., and **Kaibuchi, K.** DISC1 regulates the transport of the NUDEL/LIS1/14-3-3epsilon complex through kinesin-1. *J Neurosci* 27, 15-26. (2007)
 16. Nishimura, T., and **Kaibuchi, K.** Numb controls integrin endocytosis for directional cell migration with aPKC and PAR-3. *Dev Cell* 13, 15-28. (2007)
 17. Yamashiro, S., Yamakita, Y., Totsukawa, G., Goto, H., **Kaibuchi, K.**, Ito, M., Hartshorne, D. J., and Matsumura, F. Myosin phosphatase-targeting subunit 1 regulates mitosis by antagonizing polo-like kinase 1. *Dev Cell* 14, 787-797 (2008)
 18. Nakayama, M., Goto, T. M., Sugimoto, M., Nishimura, T., Shinagawa, T., Ohno, S., Amano, M., and **Kaibuchi, K.** Rho-kinase phosphorylates PAR-3 and disrupts PAR complex formation. *Dev Cell* 14 (2), 205-215. (2008)
 19. Arimura, N., Kimura, T., Nakamuta, S., Taya, S., Funahashi, Y., Hattori, A., Shimada, A., Menager, C., Kawabata, S., Fujii, K., Iwamatsu, A., Segal, R. A., Fukuda, M., and **Kaibuchi, K.** Anterograde transport of TrkB in axons is mediated by direct interaction with Slp1 and Rab27. *Dev Cell* 16 (5), 675-686. (2009)
 20. Amano, M., Tsumura, Y., Taki, K., Harada, H., Mori, K., Nishioka, T., Kato, K., Suzuki, T., Nishioka, Y., Iwamatsu, A., and **Kaibuchi, K.** A proteomic approach for comprehensively screening substrates of protein kinases such as Rho-kinase. *PLoS one* 5, e8704 (2010)
 21. Nakano, A., Kato, H., Watanabe, T., Min, K. D., Yamazaki, S., Asano, Y., Seguchi, O., Higo, S., Shintani, Y., Asanuma, H., Asakura, M., Minamino, T., **Kaibuchi, K.**, Mochizuki, N., Kitakaze, M., and Takashima, S. AMPK controls the speed of microtubule polymerization and directional cell migration through CLIP-170 phosphorylation. *Nat Cell Biol* 12, 583-590 (2010)
 22. Nakamuta S, Funahashi Y, Namba T, Arimura N, Picciotto MR, Tokumitsu H, Soderling TR, Sakakibara A, Miyata T, Kamiguchi H, **Kaibuchi K.** Local Application of Neurotrophins Specifies Axons Through Inositol 1,4,5-Trisphosphate, Calcium, and Ca²⁺/Calmodulin-Dependent Protein Kinases *Science Signaling* ra76 (2011)
 23. Kuroda, K., Yamada, S., Tanaka, M., Iizuka, M., Yano, H., Mori, D., Tsuboi, D., Nishioka, T., Namba, T., Iizuka, Y., Kubota, S., Nagai, T., Ibi, D., Wang, R., Enomoto, A., Isotani-Sakakibara, M., Asai, N., Kimura, K., Kiyonari, H., Abe, T., Mizoguchi, A., Sokabe, M., Takahashi, M., Yamada, K., and Kaibuchi, K. Behavioral alterations associated with targeted disruption of exons 2 and 3 of the Disc1 gene in the mouse. *Hum Mol Genet.* 20(23):4666-83, (2011)
 24. Wang, S., Watanabe, T., Matsuzawa, K., Katsumi, A., Kakeno, M., Matsui, T., Ye, F., Sato, K., Murase, K., Sugiyama, I., Kimura, K., Mizoguchi, A., Matsuda, M., Ginsberg, MH., Collard, JG., and Kaibuchi, K. Tiam1 interaction with the PAR complex promotes talin-mediated Rac1 activation during polarized cell migration. *J Cell Biol.* 199(2):331-45, (2012).
 25. Funahashi, Y., Namba, T., Fujisue, S., Itoh, N., Nakamuta, S., Kato, K., Shimada A., Xu, C., Shan, W., Nishioka, T., and Kaibuchi, K. ERK2-mediated phosphorylation of Par3 regulates neuronal polarization. *J Neurosci.* 33(33),13270-13285, (2013)
 26. Namba, T., Kibe, Y., Funahashi, Y., Nakamuta, S., Takano, T., Ueno, T., Shimada, A., Kozawa, S., Okamoto, M., Shimoda, Y., Oda, K., Wada, Y., Masuda, T., Sakakibara, A., Igarashi, M., Miyata, T., Faivre-Sarrailh, C., Takeuchi, K., and Kaibuchi, K. Pioneering axons regulate neuronal polarization in the developing cerebral cortex. *Neuron.* 81, 814-829, (2014)
 27. Amano, M., Hamaguchi, T., Shohag, MH, Kozawa, K., Kato, K., Zhang, X., Yura, Y., Matsuura, Y., Kataoka, C., Nishioka, T., and Kaibuchi, K. Kinase-interacting substrate screening is a novel method to identify kinase substrates. *J Cell Biol.* 209(6), 895-912, (2015)
 28. Tsuboi, D., Kuroda, K., Tanaka, M., Namba, T., Iizuka, Y., Taya, S., Shinoda, T., Hikita, T., Muraoka, S., Iizuka, M., Nimura, A., Mizoguchi, A., Shiina, N., Sokabe, M., Okano, H., Mikoshiba, K., and Kaibuchi, K. Disrupted-in-schizophrenia 1 regulates transport of ITPR1 mRNA for synaptic plasticity. *Nat Neurosci.* 18(5), 698-707, (2015)
 29. Nagai, T., Nakamuta, S., Kuroda, K., Nakauchi, S., Nishioka, T., Takano, T., Zhang, X., Tsuboi, D., Funahashi, M., and Kaibuchi, K. Phospho-proteomics of the dopamine pathway enables discovery of Rap1 activation as a reward signal in vivo. *Neuron.* 89,550-565, (2016)
 30. Matsuzawa, K., Akita, H., Watanabe, T., Kakeno, M., Matsui, T., Wang, S., and **Kaibuchi, K.** PAR3-aPKC regulates Tiam1 by modulating suppressive internal interactions. *Mol Biol Cell.*

27(9):1511-1523. (2016)

31. Takano, T., Wu, M., Nakamuta, S., Naoki, H., Ishizawa, N., Namba, T., Watanabe, T., Xu, C., Hamaguchi, T., Yura, Y., Amano, M., Hahn, K.M., and **Kaibuchi, K.** Discovery of long-range inhibitory signaling to ensure single axon formation. *Nat Commun*, 8(1):33. (2017)
32. Takagishi M, Sawada M, Ohata S, Asai N, Enomoto A, Takahashi K, Weng L, Ushida K, Ara H, Matsui S, **Kaibuchi K**, Sawamoto K, Takahashi M. Daple coordinates planar polarized microtubule dynamics in ependymal cells and contributes to hydrocephalus. *Cell Rep*. 20, 960-972, (2017)
33. Bin Saifullah MA, Nagai T, Kuroda K, Wulaer B, Nabeshima T, **Kaibuchi K**, Yamada K. Cell type-specific activation of mitogen-activated kinase in D1 receptor-expressing neurons of the nucleus accumbens potentiates stimulus-reward learning in mice. *Sci Rep* 8(1):14413 (2018)
34. Wulaer B, Nagai T, Sobue A, Itoh N, Kuroda K, **Kaibuchi K**, Nabeshima T, Yamada K. Repetitive and compulsive-like behaviors lead to cognitive dysfunction in *Disc1^{d2-3/d2-3}* mice. *Genes Brain Behav*. E12478 (2018)
35. Owa T, Taya S, Miyashita S, Yamashita M, Adachi T, Yamada K, Yokoyama M, Aida S, Nishioka T, Inoue YU, Goitsuka R, Nakamura T, Inoue T, **Kaibuchi K**, Hoshino M. *Meis1* coordinates cerebellar granule cell development by regulating *Pax6* transcription, BMP signaling and *Atoh1* degradation. *J Neurosci*. 38, 1277-1294 (2018)
36. Funahashi, Y, Ariza, A., Emi, R., Xu, Y., Shan, W., Suzuki, K., Kozawa, S., Ahammad, R.U., Wu, M., Takano, T., Yura, Y., Kuroda, K., Nagai, T., Amano, M., Yamada, K., and **Kaibuchi, K.** Phosphorylation of *Npas4* by MAPK Regulates Reward-Related Gene Expression and Behaviors. *Cell Rep*. 29, 10, 3235-3252. (2019)
37. Zhang, X., Nagai, T., Ahammad, R.U., Kuroda, K., Nakamuta, S., Nakano, T., Yukinawa, N., Funahashi, Y., Yamahashi, Y., Amano, M., Yoshimoto, J., Yamada, K., and **Kaibuchi, K.** Balance between dopamine and adenosine signals regulates the PKA/Rap1 pathway in striatal medium spiny neurons. *Neurochem Int*. 122, 8, 18. (2019)
38. Nakamura M, Shiozawa S, Tsuboi D, Amano M, Watanabe H, Maeda S, Kimura T, Yoshimatsu S, Kisa F, Karch CM, Miyasaka T, Takashima A, Sahara N, Hisanaga SI, Ikeuchi T, **Kaibuchi K**, Okano H. Pathological progression induced by the frontotemporal dementia-associated R406W Tau mutation in patient-derived iPSCs. *Stem Cell Reports* 13, 684-699, (2019)
39. Arimura N, Okada M, Taya S, Dewa KI, Tsuzuki A, Uetake H, Miyashita S, Hashizume K, Shimaoka K, Egusa S, Nishioka T, Yanagawa Y, Yamakawa K, Inoue YU, Inoue T, **Kaibuchi K**, Hoshino M. DSCAM regulates delamination of neurons in the developing midbrain. *Sci. Adv*. 6, eaba1693 (2020)

Selected Reviews

1. **Kaibuchi, K.**, Kuroda, S. and Amano, M. (1999) Regulation of cytoskeletons and cell adhesions by the Rho family GTPases in mammalian cells. *Annu. Rev. Biochem.* 68, 459-486 (1999)
2. Fukata, M., and **Kaibuchi, K.** Rho-family GTPases in cadherin-mediated cell-cell adhesion. *Nat Rev Mol Cell Biol* 2, 887-897, (2001)
3. Fukata, M., Nakagawa, M., and **Kaibuchi, K.** Roles of Rho-family GTPases in cell polarisation and directional migration. *Curr Opin Cell Biol* 15, 590-597. (2003)
4. Watanabe, T., Noritake, J., and **Kaibuchi, K.** Regulation of microtubules in cell migration. *Trends Cell Biol* 15, 76-83, (2005)
5. Arimura, N., and **Kaibuchi, K.** Neuronal polarity: from extracellular signals to intracellular mechanisms. *Nat Rev Neurosci* 8, 194-205, (2007)
6. Amano, M., Nakayama, M., and **Kaibuchi, K.** Rho-kinase/ROCK: A key regulator of the cytoskeleton and cell polarity. *Cytoskeleton (Hoboken)* 67, 545-554, (2010)
7. Extracellular and Intracellular Signaling for Neuronal Polarity. Namba, T., Funahashi, Y., Nakamuta, S., Xu, C., Takano, T., and **Kaibuchi, K.** *Physiol Rev*. 95(3):995-1024, (2015)
8. Nagai, T., Yoshimoto, J., Kannon, T., Kuroda, K., and **Kaibuchi, K.** Phosphorylation signals in striatal medium spiny neurons. *Trend Pharmacol Sci*. 37(10):858-71. (2016)
9. Amano, M., Nishioka, T., Tsuboi, D., Kuroda, K., Funahashi, Y., Yamahashi, Y., and **Kaibuchi, K.** Comprehensive analysis of kinase-oriented phospho-signalling pathways. *J Biochem*. 165, 4, 301-307. (2019)
10. Advance in defining signaling networks for the establishment of neuronal polarity. Funahashi, Y., Watanabe, T. and **Kaibuchi, K.** *Curr Opin Cell Biol* 63, 76—87, (2020)