

Kumi O. KURODA



Current position

Principal investigator
Laboratory for Affiliative Social Behavior
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Research Interest

Neural mechanism of mammalian parent-infant relationship

Education

B.S. Kyoto University (Japan), Physics
M.D. Osaka University (Japan), Medicine
Ph.D. Osaka University Graduate School of Medicine (Japan), Biochemistry and Molecular Biology

Professional Experience

1997-1998	Intern, Dept. Psychiatry, Osaka University Hospital
1999-2002	Research fellow, the Japan Society for the Promotion of Science
2002-2004	Postdoctoral fellow, Dept. Neuroscience and psychiatry, McGill University, Canada
2004-2007	Special Postdoctoral Researcher, RIKEN Brain Science Institute
2007-2008	Research scientist, Research Team for Molecular Dynamics of Mental Disorder, RIKEN Brain Science Institute (Team Leader: Tadafumi Kato)
2008-2014	Unit Leader of Kuroda Research Unit for Affiliative Social Behavior, RIKEN Brain Science Institute
2015-2018	Team Leader of Laboratory for Affiliative Social Behavior, RIKEN Brain Science Institute
2018-Present	Team Leader of Laboratory for Affiliative Social Behavior, RIKEN Center for Brain Science

Awards and Honors

- 1999-2002 Research Fellowship of the Japan Society for the Promotion of Science (DC-1)
- 2002-2004 Long-term Fellowship of the Human Frontier Science Program
- 2004-2007 Special Postdoctoral Research fellowship, RIKEN Brain Science Institute (2007 final presentation won the first prize in biology field)
- 2009 Research fund, Uehara Memorial Foundation

Certification

- May 8, 1997 Japanese Medical License Registration

Selected original research articles

Ozaki, K., Tanaka, K., Imamura, H., Hihara, T., Kameyama, T., Nonaka, H., Hirano, H., Matsuura, Y. & Takai, Y. Rom1p and Rom2p are GDP/GTP exchange proteins (GEPs) for the Rho1p small GTP binding protein in *Saccharomyces cerevisiae*. *EMBO J*, 15, 2196-207. (1996).

Ozaki-Kuroda, K., Yamamoto, Y., Nohara, H., Kinoshita, M., Fujiwara, T., Irie, K. & Takai, Y. Dynamic localization and function of Bni1p at the sites of directed growth in *Saccharomyces cerevisiae*. *Mol Cell Biol*, 21, 827-39. (2001).

Ozaki-Kuroda, K., Nakanishi, H., Ohta, H., Tanaka, H., Kurihara, H., Mueller, S., Irie, K., Ikeda, W., Sakai, T., Wimmer, E., Nishimune, Y. & Takai, Y. Nectin couples cell-cell adhesion and the actin scaffold at heterotypic testicular junctions. *Curr Biol*, 12, 1145-50. (2002).

Kuroda K.O., Meaney M.J., Uetani N., Fortin Y., Ponton A., Kato T. ERK-FosB signaling in dorsal MPOA neurons plays a major role in the initiation of parental behavior in mice. *Mol Cell Neurosci*, 36:121-131. (2007)

Kuroda K.O., Meaney M.J., Uetani N., Kato T. Neurobehavioral basis of the impaired nurturing in mice lacking the immediate early gene *FosB*. *Brain Res*, 1211:57-71. (2008)

Kuroda K.O., Ornthanalai V.G., Kato T. and Murphy N.P. FosB null mutant mice display enhanced methamphetamine neurotoxicity, decreased brain serine content and reduced intracellular feedback regulators. *Neuropsychopharmacology*, 35:641-655. (2010)

Tsuneoka Y., Maruyama T., Yoshida S., Nishimori K., Kato T., Numan M., and Kuroda K.O. Functional, anatomical, and neurochemical differentiation of medial preoptic area subregions in relation to maternal behavior in the mouse. *J Comp Neurol*, 521:1633-63. (2013) (e-pub ahead: 2012)

Tachikawa K.S., Yoshihara Y., and Kuroda K.O. Behavioral transition from attack to parenting in male mice: a crucial role of the vomeronasal system. *J Neurosci*, 33:5120-6. (2013)

Esposito G.*, Yoshida S.*, Ohnishi R., Tsuneoka Y., Rostagno M.C., Yokota S., Okabe S., Kamiya K., Hoshino M., Shimizu M., Venuti P., Kikusui T., and Kato T. and Kuroda K.O. Infant calming responses during maternal carrying in humans and mice. *Curr Biol*, 23:739-745. *Equal contribution. (2013)

Yoshida S., Esposito G., Ohnishi R., Tsuneoka Y., Okabe S., Kikusui T., Kato T., and Kuroda K.O. Transport Response is a filial-specific behavioral response to maternal carrying in C57BL/6 mice. *Front Zool*, 10:#50 (2013)

Tsuneoka Y, Tokita K, Yoshihara C, Amano T, Esposito G, Huang AJ, Yu LM, Odaka Y, Shinozuka K, McHugh TJ, Kuroda KO "Distinct preoptic-BST nuclei dissociate paternal and infanticidal behavior in mice.", *EMBO Journal*, 34(21), 2652-70 (2015)

Amano T., Shindo S., Yoshihara C., Tsuneoka Y., Uki H., Minami M., and Kuroda K.O.: "Development-dependent behavioral change toward pups and synaptic transmission in the rhomboid nucleus of the bed nucleus of the stria terminalis.", *Behav Brain Res*, 325(Part B), 131-7 (2016)

Book Chapters and reviews in English (Peer reviewed)

Kuroda K.O., Neurobiological basis of parent-infant relationship. Preface. *Prog Neuropsychopharmacol Biol Psychiatry*, 35(5), 1165-6 (2011)

Kuroda K.O., Tachikawa K., Yoshida S., Tsuneoka Y., and Numan M. Neuromolecular basis of parental behavior in laboratory mice and rats: with special emphasis on technical issues of using mouse genetics., *Prog Neuropsychopharmacol Biol Psychiatry*, 35:1205-31 (2011)

Kuroda, K.O. and Tsuneoka Y., Assessing postpartum maternal care, alloparental behavior, and infanticide in mice: with notes on chemosensory influences. *Methods Mol Biol*, 1068, 331-47 (2013)

Kuroda K.O., and Numan M. The medial preoptic area and the regulation of parental behavior., *Neurosci Bulletin*, 30(5), 863-5 (2014)

Yoshihara C., Numan M., and Kuroda K.O.: "Oxytocin and Parent Behaviors." *Current Topics in Behavioral Neurosciences*, 1-35 (2017)

Selected movies (Youtube)

1. RIKEN Channel: Infant calming responses by maternal carrying (2013) 抱っこして歩くと赤ちゃんがリラックスする仕組みの一端を解明

<https://www.youtube.com/watch?v=VNCfbFEmwJI>

2. 黒田公美. (Dec 6, 2013). "親と子～絆はどのように育まれるのか～". 第36回日本分子生物学会 公開シンポジウム「生命世界を問う」, 神戸.

<https://www.youtube.com/watch?v=UdchCma-nBE>

Selected book Chapters and reviews in Japanese

尾崎公美, 高井義美. 「低分子量 G タンパク質---その機能と作用機構」*実験医学増刊*,17(14), 1715-1721 (1999).

黒田公美. 母子関係が児の精神発達に与える影響. *臨床精神医学* **33**, 1423-1431 (2004).

黒田公美. 養育行動とその異常の分子機構. *実験医学増刊* **25**, 199-204 (2007).

黒田公美. 養育と乳幼児の発達、*学術会議叢書 14 : 性差とは何か* 14, 181-198 (2008).

黒田公美. 視床下部一視策前野複合体. *分子精神医学* **9**, 54-59 (2009).

大西竜子, 恒岡洋右, 黒田公美. マウスの養育 (子育て) 行動とその異常 : スクリーニングのためのプロトコル. *実験医学増刊* **30**, 2012-2111 (2012).

黒田公美, 吉田さちね, Esposito, G. 親に対する子の愛着の脳神経基盤. *分子精神医学* **13**, 278-286 (2013).

黒田公美 「抱っこして歩くこと～脳生理学の視点から保育を科学する～」 *保育と保健* **20** (1), 130-132 (2013)

黒田公美 「親子の愛と絆の脳科学」 *科学* **84**, 720-726(2014)

黒田公美. 「父性愛と母性愛」 *生体の科学* **66**(1), 58-65 (2015)

黒田公美,白石優子,篠塚一貴,時田賢一. 「子ども虐待はなぜ起こるのかー親子関係の脳科学」
ここまでわかった!脳とこころ 2016年7月増刊号、16-24(2016)

黒田公美 「親子のつながりを作る脳」 つながる脳科学, 281-313(2016)

黒田公美, Menno R. Kruk. 「攻撃性の脳内基盤 I」 *臨床精神医学* **46**(9), 1057-66(2017)

篠塚一貴,矢野沙織,Menno R. Kruk, 黒田公美. 「攻撃性の脳内基盤 II」 *臨床精神医学* **46**(9), 1067-76(2017)