

Professor

■ Katsuyuki Kaneda

Originals

1. Taoka, N., Kamiizawa, R., Wada, S., Minami, M., **Kaneda, K.** (2016). Chronic cocaine exposure induces noradrenergic modulation of inhibitory synaptic transmission to cholinergic neurons of the laterodorsal tegmental nucleus. *European Journal of Neuroscience*, 44(12), 3035-45.
2. Kaneko, T., **Kaneda, K.**, Ohno, A., Takahashi, D., Hara, T., Amano, T., Ide, S., Yoshioka, M., Minami, M. (2016). Activation of adenylate cyclase-cyclic AMP-protein kinase A signaling by corticotropin-releasing factor within the dorsolateral bed nucleus of the stria terminalis is involved in pain-induced aversion. *European Journal of Neuroscience*, 44(11), 2914-24.
3. Kamii, H., Kurosawa, R., Taoka, N., Shinohara, F., Minami, M., **Kaneda, K.** (2015). Intrinsic membrane plasticity via increased persistent sodium conductance of cholinergic neurons in the rat laterodorsal tegmental nucleus contributes to cocaine-induced addictive behavior. *European Journal of Neuroscience*, 41(9), 1126–38.
4. Nagano, Y., **Kaneda, K.**, Maruyama, C., Ide, S., Kato, F., Minami, M. (2015). Corticotropin-releasing factor enhances inhibitory synaptic transmission to type III neurons in the bed nucleus of the stria terminalis. *Neuroscience Letters*, 600, 56–61.
5. Shinohara, F., Kihara, Y., Ide, S., Minami, M., **Kaneda, K.** (2014). Critical role of cholinergic transmission from the laterodorsal tegmental nucleus to the ventral tegmental area in cocaine-induced place preference. *Neuropharmacology*, 79, 573–9.
6. Phongphanphanee, P., Marino, R. A., **Kaneda, K.**, Yanagawa, Y., Munoz, D. P., Isa, T. (2014). Distinct local circuit properties of the superficial and intermediate layers of the rodent superior colliculus. *European Journal of Neuroscience*, 40(2), 2329–43.

7. **Kaneda, K.**, Isa, T. (2013).
GABAergic mechanisms for shaping transient visual responses in the mouse superior colliculus.
Neuroscience, 235, 129–40.
8. Kurosawa, R., Taoka, N., Shinohara, F., Minami, M., **Kaneda, K.** (2013).
Cocaine exposure enhances excitatory synaptic drive to cholinergic neurons in the laterodorsal tegmental nucleus.
European Journal of Neuroscience, 38(7), 3027–35.
9. Ide, S., Hara, T., Ohno, A., Tamano, R., Koseki, K., Naka, T., Maruyama, C., **Kaneda, K.**, Yoshioka, M., Minami, M. (2013).
Opposing roles of corticotropin-releasing factor and neuropeptide Y within the dorsolateral bed nucleus of the stria terminalis in the negative affective component of pain in rats.
The Journal of Neuroscience, 33(14), 5881–94.
10. **Kaneda, K.**, Yanagawa, Y., Isa, T. (2012).
Transient enhancement of inhibition following visual cortical lesions in the mouse superior colliculus.
European Journal of Neuroscience, 36(8), 3066–76.
11. **Kaneda, K.**, Kasahara, H., Matsui, R., Katoh, T., Mizukami, H., Ozawa, K., Watanabe, D., Isa, T. (2011).
Selective optical control of synaptic transmission in the subcortical visual pathway by activation of viral vector-expressed halorhodopsin.
PLoS One, 6(4), e18452.
12. **Kaneda, K.**, Phongphanphanee, P., Katoh, T., Isa, K., Yanagawa, Y., Obata, K., Isa, T. (2008).
Regulation of burst activity through presynaptic and postsynaptic GABA_B receptors in mouse superior colliculus.
The Journal of Neuroscience, 28(4), 816–27.
13. Endo, T., Tarusawa, E., Notomi, T., **Kaneda, K.**, Hirabayashi, M., Shigemoto, R., Isa, T. (2008).
Dendritic Ih ensures high-fidelity dendritic spike responses of motion-sensitive neurons in rat superior colliculus.
Journal of Neurophysiology, 99(5), 2066–76.
14. Phongphanphanee, P., **Kaneda, K.**, Isa, T. (2008).
Spatiotemporal profiles of field potentials in mouse superior colliculus analyzed by

- multichannel recording.
The Journal of Neuroscience, 28(37), 9309–18.
15. **Kaneda, K.**, Isa, K., Yanagawa, Y., Isa, T. (2008).
Nigral inhibition of GABAergic neurons in mouse superior colliculus.
The Journal of Neuroscience, 28(43), 11071–8.
16. **Kaneda, K.**, Kita, T., Kita, H. (2007).
Repetitive activation of glutamatergic inputs evokes a long-lasting excitation in rat globus pallidus neurons in vitro.
Journal of Neurophysiology, 97(1), 121–33.
17. **Kaneda, K.**, Fujiwara-Tsukamoto, Y., Isomura, Y., Takada, M. (2005).
Region-specific modulation of electrically induced synchronous oscillations in the rat hippocampus and cerebral cortex.
Neuroscience Research, 52(1), 83–94.
18. **Kaneda, K.**, Kita, H. (2005).
Synaptically released GABA activates both pre- and postsynaptic GABA_B receptors in the rat globus pallidus.
Journal of Neurophysiology, 94(2), 1104–14.
19. **Kaneda, K.**, Tachibana, Y., Imanishi, M., Kita, H., Shigemoto, R., Nambu, A., Takada, M. (2005).
Down-regulation of metabotropic glutamate receptor 1alpha in globus pallidus and substantia nigra of parkinsonian monkeys.
European Journal of Neuroscience, 22(12), 3241–54.
20. Kita, H., Nambu, A., **Kaneda, K.**, Tachibana, Y., Takada, M. (2004).
Role of ionotropic glutamatergic and GABAergic inputs on the firing activity of neurons in the external pallidum in awake monkeys.
Journal of Neurophysiology, 92(5), 3069–84.
21. Fujiwara-Tsukamoto, Y., Isomura, Y., **Kaneda, K.**, Takada, M. (2004).
Synaptic interactions between pyramidal cells and interneurone subtypes during seizure-like activity in the rat hippocampus.
The Journal of Physiology, 557(3), 961–79.

22. **Kaneda, K.**, Imanishi, M., Nambu, A., Shigemoto, R., Takada, M. (2003). Differential expression patterns of mGluR1 alpha in monkey nigral dopamine neurons. *Neuroreport*, 14(7), 947–50.
23. Nambu, A., **Kaneda, K.**, Tokuno, H., Takada, M. (2002). Organization of corticostriatal motor inputs in monkey putamen. *Journal of Neurophysiology*, 88(4), 1830–42.
24. Kitano, K., Câteau, H., **Kaneda, K.**, Nambu, A., Takada, M., Fukai, T. (2002). Two-state membrane potential transitions of striatal spiny neurons as evidenced by numerical simulations and electrophysiological recordings in awake monkeys. *The Journal of Neuroscience*, 22(12), RC230.
25. **Kaneda, K.**, Nambu, A., Tokuno, H., Takada, M. (2002). Differential processing patterns of motor information via striatopallidal and striatonigral projections. *Journal of Neurophysiology*, 88(3), 1420–32.
26. Zhang, S., Kashii, S., Yasuyoshi, H., Kikuchi, M., Honda, Y., **Kaneda, K.**, Sato, S., Akaike, A. (2000). Protective effects of ifenprodil against glutamate-induced neurotoxicity in cultured retinal neurons. *Graefe's Archive for Clinical and Experimental Ophthalmology*, 238(10), 846–52.
27. **Kaneda, K.**, Kashii, S., Kurosawa, T., Kaneko, S., Akaike, A., Honda, Y., Minami, M., Satoh, M. (1999). Apoptotic DNA fragmentation and upregulation of Bax induced by transient ischemia of the rat retina. *Brain Research*, 815(1), 11–20.
28. Adachi, K., Kashii, S., Masai, H., Ueda, M., Morizane, C., **Kaneda, K.**, Kume, T., Akaike, A., Honda, Y. (1998). Mechanism of the pathogenesis of glutamate neurotoxicity in retinal ischemia. *Graefe's Archive for Clinical and Experimental Ophthalmology*, 236(10), 766–74.
29. Senda, T., Mita, S., **Kaneda, K.**, Kikuchi, M., Akaike, A. (1998). Effect of SA4503, a novel sigma1 receptor agonist, against glutamate neurotoxicity in cultured rat retinal neurons. *European Journal of Pharmacology*, 342(1), 105–11.

30. Kikuchi, M., Kashii, S., Mandai, M., Yasuyoshi, H., Honda, Y., **Kaneda, K.**, Akaike, A. (1998). Protective effects of FK506 against glutamate-induced neurotoxicity in retinal cell culture. *Investigative Ophthalmology Visual Science*, 39(7), 1227–32.
31. **Kaneda, K.**, Kikuchi, M., Kashii, S., Honda, Y., Maeda, T., Kaneko, S., Akaike, A. (1997). Effects of B vitamins on glutamate-induced neurotoxicity in retinal cultures. *European Journal of Pharmacology*, 322(2-3), 259–64.
32. Kikuchi, M., Kashii, S., Honda, Y., Tamura, Y., **Kaneda, K.**, Akaike, A. (1997). Protective effects of methylcobalamin, a vitamin B12 analog, against glutamate-induced neurotoxicity in retinal cell culture. *Investigative Ophthalmology Visual Science*, 38(5), 848–54.
33. Kashii, S., Mandai, M., Kikuchi, M., Honda, Y., Tamura, Y., **Kaneda, K.**, Akaike, A. (1996). Dual actions of nitric oxide in N-methyl-D-aspartate receptor-mediated neurotoxicity in cultured retinal neurons. *Brain Research*, 711(1-2), 93–101.

Reviews

1. **Kaneda, K.**, Shinohara, F., Kurosawa, R., Taoka, N., Ide, S., Minami, M. (2014). Involvement and plasticity of brainstem cholinergic neurons in cocaine-induced addiction. *Japanese Journal of Alcohol Studies Drug Dependence*, 49(2), 92–103.
2. Nambu A, Tachibana Y, **Kaneda, K.**, Tokuno H, Takada M.(2006). Dynamic model of basal ganglia functions and Parkinson's disease. *The Basal Ganglia VIII*. (eds Bolam JP, Ingham CA, Magill PJ) Kluwer Academic/Plenum Publishers, New York, .307-312.
3. Takada M, **Kaneda, K.**, Tachibana Y, Imanishi M, Kita H, Shigemoto R, Nambu A .(2006). Downregulation of a metabotropic glutamate receptor in the Parkinsonian basal ganglia. *The Basal Ganglia VIII*. (eds Bolam JP, Ingham CA, Magill PJ) Kluwer Academic/Plenum Publishers, New York, 255-264.
4. Nambu A, **Kaneda, K.**, Tokuno H, Takada M. (2002). Partly converging but largely segregated corticostriatal projections from the primary motor

- cortex and the supplementary motor area.
- The Basal Ganglia VII.* (eds Nicholson LFB, Faul RLM) Kluwer Academic/Plenum Publishers, New York, 147-153.
5. Akaike, A., Adachi, K., **Kaneda, K.** (1998).
Techniques for evaluating neuronal death of the retina in vitro and in vivo.
Nihon Yakurigaku Zasshi, 111(2), 97–104.

Associate Professor

■ Eiichi Hinoi

Originals

1. Park, G., Horie, T., Kanayama, T., Fukasawa, K., Iezaki, T., Onishi, Y., Ozaki, K., Nakamura, Y., Yoneda, Y., Takarada, T., **Hinoi, E.**
The transcriptional modulator Ifrd1 controls PGC-1 α expression under short-term adrenergic stimulation in brown adipocytes.
FEBS Journal, [in press].
2. Park, G., Horie, T., Iezaki, T., Okamoto, M., Fukasawa, K., Kanayama, T., Ozaki, K., Onishi, Y., Sugiura, M., **Hinoi, E.**
Daily oral intake of β -cryptoxanthin ameliorates neuropathic pain.
Bioscience, Biotechnology, and Biochemistry, [in press].
3. Takarada, T., Xu, C., Ochi, H., Nakazato, R., Yamada, D., Nakamura, S., Kodama, A., Shimba, S., Mieda, M., Fukasawa, K., Ozaki, K., Iezaki, T., Fujikawa, K., Yoneda, Y., Numano, R., Hida, A., Tei, H., Takeda, S., **Hinoi, E.**
Bone resorption is regulated by circadian clock in osteoblasts.
Journal of Bone and Mineral Research, [in press].
4. Onishi, Y., Park, G., Iezaki, T., Horie, T., Kanayama, T., Fukasawa, K., Ozaki, K., **Hinoi, E.** (2017).
The transcriptional modulator Ifrd1 is a negative regulator of BMP-2-dependent osteoblastogenesis.
Biochemical and Biophysical Research Communications, 482(2), 329-334.
5. Nakazato, R., Hotta, S., Yamada, D., Kou, M., Nakamura, S., Takahata, Y., Tei, H., Numano, R., Hida, A., Shimba, S., Mieda, M., **Hinoi, E.**, Yoneda, Y., Takarada, T. (2017).
The intrinsic microglial clock system regulates interlekin-6 expression.
Glia, 65(1), 198-208.
6. Fukasawa, K., Park, G., Iezaki, T., Horie, T., Kanayama, T., Ozaki, K., Onishi, Y., Takahata, Y., Yoneda, Y., Takarada, T., Kitajima, S., Vacher, J., **Hinoi, E.** (2016).
ATF3 controls proliferation of osteoclast precursor and bone remodeling.
Scientific Reports, 6, 30918.

7. Iezaki, T., Fukasawa, K., Park, G., Horie, T., Kanayama, T., Ozaki, K., Onishi, Y., Takahata, Y., Nakamura, Y., Takarada, T., Yoneda, Y., Nakamura, T., Vacher, J., **Hinoi, E.** (2016). The transcriptional modulator Ifrd1 regulates osteoclast differentiation through enhancing NF-κB/NFATc1 pathway. *Molecular and Cellular Biology*, 36(19), 2451-2463.
8. Iezaki, T., Ozaki, K., Fukasawa, K., Inoue, M., Kitajima, S., Muneta, T., Takeda, S., Fujita, H., Onishi, Y., Horie, T., Yoneda, Y., Takarada, T., **Hinoi, E.** (2016). ATF3 deficiency in chondrocytes alleviates osteoarthritis development. *Journal of Pathology*, 239(4), 426-437.
9. Xu, C., Ochi, H., Fukuda, T., Sato, S., Sunamura, S., Takarada, T., **Hinoi, E.**, Okawa, A., Takeda, S. (2016). Circadian Clock Regulates Bone Resorption in Mice. *Journal of Bone and Mineral Research*, 31(7), 1344-1355.
10. Takarada, T., Kou, M., Hida, M., Fukumori, R., Nakamura, S., Kutsukake, T., Kuramoto, N., **Hinoi, E.**, Yoneda, Y. (2016). Protective upregulation of activating transcription factor-3 against glutamate neurotoxicity in neuronal cells under ischemia. *Journal of Neuroscience Research*, 94(5), 378-388.
11. Onishi, Y., Fukawasa, K., Ozaki, K., Iezaki, T., Yoneda, Y., **Hinoi, E.** (2016). GDF1 is a novel mediator of macrophage infiltration in brown adipose tissue of obese mice. *Biochemistry and Biophysics Reports*, 5, 216-223.
12. Takarada, T., Nakazato, R., Tsuchikane, A., Fujikawa, K., Iezaki, T., Yoneda, Y., **Hinoi, E.** (2016). Genetic analysis of Runx2 function during intramembranous ossification. *Development*, 143(2), 211-218.
13. Takarada, T., Nakamichi, N., Nakazato, R., Kakuda, T., Kokubo, H., Ikeno, S., Nakamura, S., Kuramoto, N., **Hinoi, E.**, Yoneda, Y. (2016). Possible activation by the green tea amino acid theanine of mammalian target of rapamycin signaling in undifferentiated neural progenitor cells in vitro. *Biochemistry and Biophysics Reports*, 5, 89-95.
14. Iezaki, T., Onishi, Y., Ozaki, K., Fukasawa, K., Takahata, Y., Nakamura, Y., Fujikawa, K., Takarada, T., Yoneda, Y., Yamashita, Y., Shioi, G., **Hinoi, E.** (2016). The Transcriptional Modulator Interferon-Related Developmental Regulator 1 in Osteoblasts

- Suppresses Bone Formation and Promotes Bone Resorption.
Journal of Bone and Mineral Research, 31(3), 573-584.
15. Yamaguchi, T., Yoneyama, M., **Hinoi, E.**, Ogita, K. (2015)
Involvement of calpain in 4-hydroxynonenal-induced disruption of gap junction-mediated intercellular communication among fibrocytes in primary cultures derived from the cochlear spiral ligament.
Journal of Pharmacological Sciences, 129(2), 127-134.
16. Ozaki, K., Okamoto, M., Fukasawa, K., Iezaki, T., Onishi, Y., Yoneda, Y., Sugiura, M., **Hinoi, E.** (2015).
Daily intake of β -cryptoxanthin prevents bone loss by preferential disturbance of osteoclastic activation in ovariectomized mice.
Journal of Pharmacological Sciences, 129(1), 72-77.
17. Takarada, T., Ogura, M., Nakamichi, N., Kakuda, T., Nakazato, R., Kokubo, H., Ikeno, S., Nakamura, S., Kutsukake, T., **Hinoi, E.**, Yoneda, Y. (2015).
Upregulation of Slc38a1 Gene Along with Promotion of Neurosphere Growth and Subsequent Neuronal Specification in Undifferentiated Neural Progenitor Cells Exposed to Theanine.
Neurochemical Research. [in press]
18. Nakazato, R., Takarada, T., Ikeno, S., Nakamura, S., Kutsukake, T., **Hinoi, E.**, Yoneda, Y. (2015).
Upregulation of Runt-Related Transcription Factor-2 through CCAAT Enhancer Binding Protein-Beta Signaling Pathway in Microglial BV-2 Cells Exposed to ATP.
Journal of Cellular Physiology, 230(10), 2510–21.
19. Wei, J., Shimazu, J., Makinstoglu, M. P., Maurizi, A., Kajimura, D., Zong, H., Takarada, T., Iezaki, T., Pessin, J. E., **Hinoi, E.**, Karsenty, G. (2015).
Glucose Uptake and Runx2 Synergize to Orchestrate Osteoblast Differentiation and Bone Formation.
Cell, 161(7), 1576–1591.
20. Takarada, T., Nakamichi, N., Kakuda, T., Nakazato, R., Kokubo, H., Ikeno, S., Nakamura, S., **Hinoi, E.**, Yoneda, Y. (2015).
Daily oral intake of theanine prevents the decline of 5-bromo-2'-deoxyuridine incorporation in hippocampal dentate gyrus with concomitant alleviation of behavioral abnormalities in adult mice with severe traumatic stress.
Journal of Pharmacological Sciences, 127(3), 292–7.

21. Nakazato, R., Takarada, T., Watanabe, T., Nguyen, B. T., Ikeno, S., **Hinoi, E.**, Yoneda, Y. (2014). Constitutive and functional expression of runt-related transcription factor-2 by microglial cells. *Neurochemistry International*, 74, 24–35.
22. **Hinoi, E.**, Iezaki, T., Fujita, H., Watanabe, T., Odaka, Y., Ozaki, K., Yoneda, Y. (2014). PI3K/Akt is involved in brown adipogenesis mediated by growth differentiation factor-5 in association with activation of the Smad pathway. *Biochemical and Biophysical Research Communications*, 450(1), 255–60.
23. **Hinoi, E.**, Iezaki, T., Ozaki, K., Yoneda, Y. (2014). Nuclear factor- κ B is a common upstream signal for growth differentiation factor-5 expression in brown adipocytes exposed to pro-inflammatory cytokines and palmitate. *Biochemical and Biophysical Research Communications*, 452(4), 974–9.
24. **Hinoi, E.**, Nakamura, Y., Takada, S., Fujita, H., Iezaki, T., Hashizume, S., Takahashi, S., Odaka, Y., Watanabe, T., Yoneda, Y. (2014). Growth differentiation factor-5 promotes brown adipogenesis in systemic energy expenditure. *Diabetes*, 63(1), 162–75.
25. Kubo, M., Fukui, M., Ito, Y., Kitao, T., Shirahase, H., **Hinoi, E.**, Yoneda, Y. (2014). Insulin sensitization by a novel partial peroxisome proliferator-activated receptor γ agonist with protein tyrosine phosphatase 1B inhibitory activity in experimental osteoporotic rats. *Journal of Pharmacological Sciences*, 124(2), 276–85.
26. Takarada, T., Kou, M., Nakamichi, N., Ogura, M., Ito, Y., Fukumori, R., Kokubo, H., Acosta, G. B., **Hinoi, E.**, Yoneda, Y. (2013). Myosin VI reduces proliferation, but not differentiation, in pluripotent P19 cells. *PLoS One*, 8(5), e63947.
27. Takarada, T., **Hinoi, E.**, Nakazato, R., Ochi, H., Xu, C., Tsuchikane, A., Takeda, S., Karsenty, G., Abe, T., Kiyonari, H., Yoneda, Y. (2013). An analysis of skeletal development in osteoblast-specific and chondrocyte-specific runt-related transcription factor-2 (Runx2) knockout mice. *Journal of Bone and Mineral Research*, 28(10), 2064–9.
28. Kikuta, M., Shiba, T., Yoneyama, M., Kawada, K., Yamaguchi, T., **Hinoi, E.**, Yoneda, Y., Ogita, K. (2013). In vivo and in vitro treatment with edaravone promotes proliferation of neural progenitor cells

- generated following neuronal loss in the mouse dentate gyrus.
Journal of Pharmacological Sciences, 121(1), 74–83.
29. Fukumori, R., Takarada, T., Nakazato, R., Fujikawa, K., Kou, M., **Hinoi, E.**, Yoneda, Y. (2013). Selective inhibition by ethanol of mitochondrial calcium influx mediated by uncoupling protein-2 in relation to N-methyl-D-aspartate cytotoxicity in cultured neurons.
PLoS One, 8(7), e69718.
30. Fujita, H., **Hinoi, E.**, Watanabe, T., Iezaki, T., Takamori, M., Ogawa, S., Yoneda, Y. (2013). Prevention of bone loss after ovariectomy in mice with preferential overexpression of the transcription factor paired box-5 in osteoblasts.
Biological Pharmaceutical Bulletin, 36(3), 481–4.
31. Le, N. Q., Binh, N. T., Takarada, T., Takarada-Iemata, M., **Hinoi, E.**, Yoneda, Y. (2013). Negative correlation between Per1 and Sox6 expression during chondrogenic differentiation in pre-chondrocytic ATDC5 cells.
Journal of Pharmacological Sciences, 122(4), 318–25.
32. Nakamura, Y., **Hinoi, E.**, Iezaki, T., Takada, S., Hashizume, S., Takahata, Y., Tsuruta, E., Takahashi, S., Yoneda, Y. (2013). Repression of adipogenesis through promotion of Wnt/β-catenin signaling by TIS7 up-regulated in adipocytes under hypoxia.
Biochimica et Biophysica Acta, 1832(8), 1117–28.
33. Takarada, T., Kodama, A., Hotta, S., Mieda, M., Shimba, S., **Hinoi, E.**, Yoneda, Y. (2012). Clock genes influence gene expression in growth plate and endochondral ossification in mice.
The Journal of Biological Chemistry, 287(43), 36081–95.
34. Ogura, M., Kakuda, T., Takarada, T., Nakamichi, N., Fukumori, R., Kim, Y.-H., **Hinoi, E.**, Yoneda, Y. (2012). Promotion of both proliferation and neuronal differentiation in pluripotent P19 cells with stable overexpression of the glutamine transporter slc38a1.
PLoS One, 7(10), e48270.
35. **Hinoi, E.**, Nakatani, E., Yamamoto, T., Iezaki, T., Takahata, Y., Fujita, H., Ishiura, R., Takamori, M., Yoneda, Y. (2012). The transcription factor paired box-5 promotes osteoblastogenesis through direct induction of Osterix and Osteocalcin.
Journal of Bone and Mineral Research, 27(12), 2526–34.

36. **Hinoi, E.**, Ochi, H., Takarada, T., Nakatani, E., Iezaki, T., Nakajima, H., Fujita, H., Takahata, Y., Hidano, S., Kobayashi, T., Takeda, S., Yoneda, Y. (2012). Positive regulation of osteoclastic differentiation by growth differentiation factor 15 upregulated in osteocytic cells under hypoxia. *Journal of Bone and Mineral Research*, 27(4), 938–49.
37. Yamamoto, T., **Hinoi, E.**, Fujita, H., Iezaki, T., Takahata, Y., Takamori, M., Yoneda, Y. (2012). The natural polyamines spermidine and spermine prevent bone loss through preferential disruption of osteoclastic activation in ovariectomized mice. *British Journal of Pharmacology*, 166(3), 1084–96.
38. Fujita, H., **Hinoi, E.**, Nakatani, E., Yamamoto, T., Takarada, T., Yoneda, Y. (2012). Possible modulation of process extension by N-methyl-D-aspartate receptor expressed in osteocytic MLO-Y4 cells. *Journal of Pharmacological Sciences*, 119(1), 112–6.
39. Iezaki, T., **Hinoi, E.**, Yamamoto, T., Ishiura, R., Ogawa, S., Yoneda, Y. (2012). Amelioration by the natural polyamine spermine of cartilage and bone destruction in rats with collagen-induced arthritis. *Journal of Pharmacological Sciences*, 119(1), 107–11.
40. Takarada, T., Takarada-Iemata, M., Takahata, Y., Yamada, D., Yamamoto, T., Nakamura, Y., **Hinoi, E.**, Yoneda, Y. (2012). Osteoclastogenesis is negatively regulated by D-serine produced by osteoblasts. *Journal of Cellular Physiology*, 227(10), 3477–87.
41. Takahata, Y., **Hinoi, E.**, Takarada, T., Nakamura, Y., Ogawa, S., Yoneda, Y. (2012). Positive regulation by γ -aminobutyric acid B receptor subunit-1 of chondrogenesis through acceleration of nuclear translocation of activating transcription factor-4. *The Journal of Biological Chemistry*, 287(40), 33293–303.
42. Uno, K., Takarada, T., Nakamura, Y., Fujita, H., **Hinoi, E.**, Yoneda, Y. (2011). A negative correlation between expression profiles of runt-related transcription factor-2 and cystine/glutamate antiporter xCT subunit in ovariectomized mouse bone. *Journal of Pharmacological Sciences*, 115(3), 309–19.
43. Uno, K., Takarada, T., Takarada-Iemata, M., Nakamura, Y., Fujita, H., **Hinoi, E.**, Yoneda, Y. (2011). Negative regulation of osteoblastogenesis through downregulation of runt-related transcription factor-2 in osteoblastic MC3T3-E1 cells with stable overexpression of the cystine/glutamate

- antiporter xCT subunit.
Journal of Cellular Physiology, 226(11), 2953–64.
44. Takahata, Y., Takarada, T., **Hinoi, E.**, Nakamura, Y., Fujita, H., Yoneda, Y. (2011). Osteoblastic γ -aminobutyric acid, type B receptors negatively regulate osteoblastogenesis toward disturbance of osteoclastogenesis mediated by receptor activator of nuclear factor κ B ligand in mouse bone.
The Journal of Biological Chemistry, 286(38), 32906–17.
45. Nakamura, Y., **Hinoi, E.**, Takarada, T., Takahata, Y., Yamamoto, T., Fujita, H., Takada, S., Hashizume, S., Yoneda, Y. (2011). Positive regulation by GABA_BR1 subunit of leptin expression through gene transactivation in adipocytes.
PLoS One, 6(5), e20167.
46. Kambe, Y., Nakamichi, N., Takarada, T., Fukumori, R., Nakazato, R., **Hinoi, E.**, Yoneda, Y. (2011). A possible pivotal role of mitochondrial free calcium in neurotoxicity mediated by N-methyl-d-aspartate receptors in cultured rat hippocampal neurons.
Neurochemistry International, 59(1), 10–20.
47. Nakazato, R., Takarada, T., Yamamoto, T., Hotta, S., **Hinoi, E.**, Yoneda, Y. (2011). Selective upregulation of Per1 mRNA expression by ATP through activation of P2X7 purinergic receptors expressed in microglial cells.
Journal of Pharmacological Sciences, 116(4), 350–61.
48. Kajimura, D., **Hinoi, E.**, Ferron, M., Kode, A., Riley, K. J., Zhou, B., Guo, X. E., Karsenty, G. (2011). Genetic determination of the cellular basis of the sympathetic regulation of bone mass accrual.
The Journal of Experimental Medicine, 208(4), 841–51.
49. Yoshizawa, T., **Hinoi, E.**, Jung, D. Y., Kajimura, D., Ferron, M., Seo, J., Jonathan, M. Graff, Jason, K. Kim., Karsenty, G. (2009). The transcription factor ATF4 regulates glucose metabolism in mice through its expression in osteoblasts.
The Journal of Clinical Investigation, 119(9), 2807–17.
50. Nakamura, Y., Takarada, T., Kodama, A., **Hinoi, E.**, Yoneda, Y. (2009). Predominant promotion by tacrolimus of chondrogenic differentiation to proliferating

chondrocytes.

Journal of Pharmacological Sciences, 109(3), 413–23.

51. Takarada, T., Takahata, Y., Iemata, M., **Hinoi, E.**, Uno, K., Hirai, T., Yamamoto, T., Yoneda, Y. (2009).
Interference with cellular differentiation by D-serine through antagonism at N-methyl-D-aspartate receptors composed of NR1 and NR3A subunits in chondrocytes.
Journal of Cellular Physiology, 220(3), 756–64.
52. **Hinoi, E.**, Gao, N., Jung, D. Y., Yadav, V., Yoshizawa, T., Kajimura, D., Myers, M. G., Chua, S. C., Wang, Q., Kim, J. K., Kaestner, K. H., Karsenty, G. (2009).
An Osteoblast-dependent mechanism contributes to the leptin regulation of insulin secretion.
Annals of the New York Academy of Sciences, 1173 Suppl, E20–30.
53. Takarada, T., Hojo, H., Iemata, M., Sahara, K., Kodama, A., Nakamura, N., **Hinoi, E.**, Yoneda, Y. (2009).
Interference by adrenaline with chondrogenic differentiation through suppression of gene transactivation mediated by Sox9 family members.
Bone, 45(3), 568–78.
54. Takarada, T., **Hinoi, E.**, Takahata, Y., Yoneda, Y. (2008).
Serine racemase suppresses chondrogenic differentiation in cartilage in a Sox9-dependent manner.
Journal of Cellular Physiology, 215(2), 320–8.
55. Kakuda, T., **Hinoi, E.**, Abe, A., Nozawa, A., Ogura, M., Yoneda, Y. (2008).
Theanine, an ingredient of green tea, inhibits [³H]glutamine transport in neurons and astroglia in rat brain.
Journal of Neuroscience Research, 86(8), 1846–56.
56. Ferron, M., **Hinoi, E.**, Karsenty, G., Ducy, P. (2008).
Osteocalcin differentially regulates beta cell and adipocyte gene expression and affects the development of metabolic diseases in wild-type mice.
Proceedings of the National Academy of Sciences of the United States of America, 105(13), 5266–70.
57. **Hinoi, E.**, Gao, N., Jung, D. Y., Yadav, V., Yoshizawa, T., Myers, M. G., Chua, S. C., Kim, J. K., Kaestner, K. H., Karsenty, G. (2008).
The sympathetic tone mediates leptin's inhibition of insulin secretion by modulating osteocalcin

- bioactivity.
- The Journal of Cell Biology*, 183(7), 1235–42.
58. Takahata, Y., Takarada, T., Osawa, M., **Hinoi, E.**, Nakamura, Y., Yoneda, Y. (2008). Differential regulation of cellular maturation in chondrocytes and osteoblasts by glycine. *Cell and Tissue Research*, 333(1), 91–103.
59. Takarada, T., **Hinoi, E.**, Kambe, Y., Sahara, K., Kurokawa, S., Takahata, Y., Yoneda, Y. (2007). Osteoblast protects osteoclast devoid of sodium-dependent vitamin C transporters from oxidative cytotoxicity of ascorbic acid. *European Journal of Pharmacology*, 575(1-3), 1–11.
60. Iemata, M., Takarada, T., **Hinoi, E.**, Taniura, H., Yoneda, Y. (2007). Suppression by glutamate of proliferative activity through glutathione depletion mediated by the cystine/glutamate antiporter in mesenchymal C3H10T1/2 stem cells. *Journal of Cellular Physiology*, 213(3), 721–9.
61. **Hinoi, E.**, Takarada, T., Fujimori, S., Wang, L., Iemata, M., Uno, K., Yoneda, Y. (2007). Nuclear factor E2 p45-related factor 2 negatively regulates chondrogenesis. *Bone*, 40(2), 337–44.
62. Uno, K., Takarada, T., **Hinoi, E.**, Yoneda, Y. (2007). Glutamate is a determinant of cellular proliferation through modulation of nuclear factor E2 p45-related factor-2 expression in osteoblastic MC3T3-E1 cells. *Journal of Cellular Physiology*, 213(1), 105–14.
63. **Hinoi, E.**, Takarada, T., Uno, K., Inoue, M., Murafuji, Y., Yoneda, Y. (2007). Glutamate suppresses osteoclastogenesis through the cystine/glutamate antiporter. *The American Journal of Pathology*, 170(4), 1277–90.
64. Lee, N. K., Sowa, H., **Hinoi, E.**, Ferron, M., Ahn, J. D., Confavreux, C., Dacquin, R., Mee, P. J., McKee, M. D., Jung, D. Y., Zhang, Z., Kim, J. K., Mauvais-Jarvis, F., Ducy, P., Karsenty, G. (2007). Endocrine regulation of energy metabolism by the skeleton. *Cell*, 130(3), 456–69.
65. Moriguchi, N., **Hinoi, E.**, Takarada, T., Matsushima, N., Uno, K., Yoneda, Y. (2007). Oral administration of phenolic antidiarrheic ingredients prevents ovariectomy-induced bone loss. *Biochemical Pharmacology*, 73(3), 385–93.

66. Moriguchi, N., **Hinoi**, E., Tsuchihashi, Y., Fujimori, S., Iemata, M., Takarada, T., Yoneda, Y. (2006). Cytoprotection by pyruvate through an anti-oxidative mechanism in cultured rat calvarial osteoblasts. *Histology and Histopathology*, 21(9), 969–77.
67. **Hinoi**, E., Fujimori, S., Wang, L., Hojo, H., Uno, K., Yoneda, Y. (2006). Nrf2 negatively regulates osteoblast differentiation via interfering with Runx2-dependent transcriptional activation. *The Journal of Biological Chemistry*, 281(26), 18015–24.
68. Fujimori, S., Osawa, M., Iemata, M., **Hinoi**, E., Yoneda, Y. (2006). Increased GABA transport activity in rat calvarial osteoblasts cultured under hyperglycemic conditions. *Biological Pharmaceutical Bulletin*, 29(2), 297–301.
69. **Hinoi**, E., Bialek, P., Chen, Y.-T., Rached, M.-T., Groner, Y., Behringer, R. R., Ornitz, D. M., Karsenty, G. (2006). Runx2 inhibits chondrocyte proliferation and hypertrophy through its expression in the perichondrium. *Genes Development*, 20(21), 2937–2942.
70. Fujimori, S., **Hinoi**, E., Takarada, T., Iemata, M., Takahata, Y., Yoneda, Y. (2006). Possible expression of a particular gamma-aminobutyric acid transporter isoform responsive to upregulation by hyperosmolarity in rat calvarial osteoblasts. *European Journal of Pharmacology*, 550(1-3), 24–32.
71. **Hinoi**, E., Takarada, T., Tsuchihashi, Y., Fujimori, S., Moriguchi, N., Wang, L., Uno, Kyosuke., Yoneda, Y. (2006). A molecular mechanism of pyruvate protection against cytotoxicity of reactive oxygen species in osteoblasts. *Molecular Pharmacology*, 70(3), 925–35.
72. **Hinoi**, E., Ueshima, T., Hojo, H., Iemata, M., Takarada, T., Yoneda, Y. (2006). Up-regulation of per mRNA expression by parathyroid hormone through a protein kinase A-CREB-dependent mechanism in chondrocytes. *The Journal of Biological Chemistry*, 281(33), 23632–42.
73. Wang, L., **Hinoi**, E., Takemori, A., Nakamichi, N., Yoneda, Y. (2006). Glutamate inhibits chondral mineralization through apoptotic cell death mediated by retrograde

- operation of the cystine/glutamate antiporter.
The Journal of Biological Chemistry, 281(34), 24553–65.
74. Wang, L., **Hinoi, E.**, Takemori, A., Takarada, T., Yoneda, Y. (2005).
Abolition of chondral mineralization by group III metabotropic glutamate receptors expressed in rodent cartilage.
British Journal of Pharmacology, 146(5), 732–43.
75. Wang, L., **Hinoi, E.**, Takemori, A., Yoneda, Y. (2005).
Release of endogenous glutamate by AMPA receptors expressed in cultured rat costal chondrocytes.
Biological Pharmaceutical Bulletin, 28(6), 990–3.
76. Nakamichi, N., Kambe, Y., Oikawa, H., Ogura, M., Takano, K., Tamaki, K., Inoue, Maki., **Hinoi, E.**, Yoneda, Y. (2005).
Protection by exogenous pyruvate through a mechanism related to monocarboxylate transporters against cell death induced by hydrogen peroxide in cultured rat cortical neurons.
Journal of Neurochemistry, 93(1), 84–93.
77. **Hinoi, E.**, Wang, L., Takemori, A., Yoneda, Y. (2005).
Functional expression of particular isoforms of excitatory amino acid transporters by rodent cartilage.
Biochemical Pharmacology, 70(1), 70–81.
78. **Hinoi, E.**, Ohashi, R., Miyata, S., Kato, Y., Iemata, M., Hojo, H., Takarada, T., Yoneda, Y. (2005).
Excitatory amino acid transporters expressed by synovial fibroblasts in rats with collagen-induced arthritis.
Biochemical Pharmacology, 70(12), 1744–55.
79. Takarada, T., **Hinoi, E.**, Balcar, V. J., Taniura, H., Yoneda, Y. (2004).
Possible expression of functional glutamate transporters in the rat testis.
The Journal of Endocrinology, 181(2), 233–44.
80. Takarada, T., **Hinoi, E.**, Fujimori, S., Tsuchihashi, Y., Ueshima, T., Taniura, H., Yoneda, Y. (2004).
Accumulation of [³H] glutamate in cultured rat calvarial osteoblasts.
Biochemical Pharmacology, 68(1), 177–84.

81. **Hinoi, E.**, Fujimori, S., Yoneda, Y. (2003).
Modulation of cellular differentiation by N-methyl-D-aspartate receptors in osteoblasts.
FASEB Journal, 17(11), 1532–4.
82. Fujimori, S., **Hinoi, E.**, Yoneda, Y. (2002).
Functional GABA_B receptors expressed in cultured calvarial osteoblasts.
Biochemical and Biophysical Research Communications, 293(5), 1445–52.
83. **Hinoi, E.**, Fujimori, S., Nakamura, Y., Balcar, V. J., Kubo, K., Ogita, K., Yoneda, Y. (2002).
Constitutive expression of heterologous N-methyl-D-aspartate receptor subunits in rat adrenal medulla.
Journal of Neuroscience Research, 68(1), 36–45.
84. **Hinoi, E.**, Fujimori, S., Takarada, T., Taniura, H., Yoneda, Y. (2002).
Facilitation of glutamate release by ionotropic glutamate receptors in osteoblasts.
Biochemical and Biophysical Research Communications, 297(3), 452–8.
85. **Hinoi, E.**, Fujimori, S., Takemori, A., Kurabayashi, H., Nakamura, Y., Yoneda, Y. (2002).
Demonstration of expression of mRNA for particular AMPA and kainate receptor subunits in immature and mature cultured rat calvarial osteoblasts.
Brain Research, 943(1), 112–6.
86. **Hinoi, E.**, Fujimori, S., Takemori, A., Yoneda, Y. (2002).
Cell death by pyruvate deficiency in proliferative cultured calvarial osteoblasts.
Biochemical and Biophysical Research Communications, 294(5), 1177–83.
87. **Hinoi, E.**, Fujimori, S., Yoneyama, M., Yoneda, Y. (2002).
Blockade by N-methyl-D-aspartate of elevation of activator protein-1 binding after stress in rat adrenal gland.
Journal of Neuroscience Research, 70(2), 161–71.
88. **Hinoi, E.**, Fujimori, S., Nakamura, Y., Yoneda, Y. (2001).
Group III metabotropic glutamate receptors in rat cultured calvarial osteoblasts.
Biochemical and Biophysical Research Communications, 281(2), 341–6.
89. **Hinoi, E.**, Ogita, K., Takeuchi, Y., Ohashi, H., Maruyama, T., Yoneda, Y. (2001).
Characterization with [³H]quisqualate of group I metabotropic glutamate receptor subtype in rat central and peripheral excitable tissues.
Neurochemistry International, 38(3), 277–85.

90. **Hinoi, E.**, Yoneda, Y. (2001).
Expression of GluR6/7 subunits of kainate receptors in rat adenohypophysis.
Neurochemistry International, 38(6), 539–47.
91. **Hinoi, E.**, Ogita, K., Takeuchi, Y., Ohashi, H., Maruyama, T., Yoneda, Y. (2000).
Direct radiolabeling by [³H]quisqualic acid of group I metabotropic glutamate receptor in rat brain synaptic membranes.
Brain Research, 881(2), 199–203.
92. Ogita, K., Shuto, M., Kuramoto, N., Manabe, T., **Hinoi, E.**, Kitayama, T., Sakata, K., Yoneda, Y. (1999).
Differential inhibition by ferrous ions of [³H]MK-801 binding to native N-methyl-D-aspartate channel in neonatal and adult rat brains.
Brain Research, 818(2), 548–52.
93. St'astny, F., **Hinoi, E.**, Ogita, K., Yoneda, Y. (1999).
Ferrous iron modulates quinolinate-mediated [³H]MK-801 binding to rat brain synaptic membranes in the presence of glycine and spermidine.
Neuroscience Letters, 262(2), 105–8.

Reviews

1. Fukasawa, K., **Hinoi, E.** (2016).
Regulation of bone homeostasis by glucose.
Clinical Calcium, 26(8), 1165-1170
2. **Hinoi, E.** (2014).
Regulation of osteoclastogenesis by osteocytes through growth differentiation factor-15.
Yakugaku Zasshi, 134(12), 1259–63.
3. Ikegaya, Y., **Hinoi, E.** (2013).
Toward a new era of pharmacological therapeutics.
Yakugaku Zasshi, 133(12), 1335–6.

4. 檜井 栄一(2012).
中枢神経系による骨代謝制御機構.
日本薬理学雑誌 140, 140.
5. **Hinoi, E.** (2012).
Elucidation of signal response mechanisms in bone-related cell lineages.
Nihon Yakurigaku Zasshi, 140(1), 3–7.
6. **Hinoi, E.** (2012).
Pivotal role of skeletal tissues in the regulation mechanisms for physiological functions mediated by multiple organ networks.
Yakugaku Zasshi, 132(6), 721–5.
7. **Hinoi, E.** (2012).
Regulatory mechanism of glycolipid metabolism by bone tissue.
Nihon Yakurigaku Zasshi, 140(2), 96.
8. **Hinoi, E.**, Yoneda, Y. (2012).
Glutamate signaling in non-neuronal tissues.
Nihon Yakurigaku Zasshi, 139(4), 165–9.
9. **Hinoi, E.**, Yoneda, Y. (2011).
Possible involvement of glutamatergic signaling machineries in pathophysiology of rheumatoid arthritis.
Journal of Pharmacological Sciences, 116(3), 248–56.
10. **Hinoi, E.** (2010).
Control of bone remodeling by nervous system. Regulation of glucose metabolism by skeleton.
- Tangent point with nervous system -.
Clinical Calcium, 20(12), 1814–9.
11. **Hinoi, E.** (2010).
Functional glutamate signaling in bone.
Yakugaku Zasshi, 130(9), 1175–9.
12. **Hinoi, E.**, Takarada, T., Tsuchihashi, Y., Yoneda, Y. (2005).
Glutamate transporters as drug targets.
Current Drug Targets, 4(2), 211–20.

13. Tsuchihashi, R., **Hinoi, E.**, Yoneda, Y. (2004).
Pyruvate as an endogenous antioxidant.
Recent Res Devel Biophys Biochem, 4, 1–13.
14. **Hinoi, E.**, Takarada, T., Ueshima, T., Tsuchihashi, Y., Yoneda, Y. (2004).
Glutamate signaling in peripheral tissues.
European Journal of Biochemistry, 271(1), 1–13.
15. **Hinoi, E.**, Takarada, T., Yoneda, Y. (2004).
Glutamate signaling system in bone.
Journal of Pharmacological Sciences, 94(3), 215–20.
16. **Hinoi, E.**, Balcar, V. J., Kuramoto, N., Nakamichi, N., Yoneda, Y. (2002).
Nuclear transcription factors in the hippocampus.
Progress in Neurobiology, 68(2), 145–65.
17. Yoneda, Y., Kuramoto, N., Kitayama, T., **Hinoi, E.** (2001).
Consolidation of transient ionotropic glutamate signals through nuclear transcription factors in the brain.
Progress in Neurobiology, 63(6), 697–719.

Books

1. **Hinoi, E.**, Yoneda, Y. (2005).
Glutamaterigic signalin in bone.
Amino Acid Signaling 04, 103–121. Research Signpost, Kerala.

Assistant Professor

■ Satoshi Deyama

Originals

1. Naka, T., Ide, S., Nakako, T., Hirata, M., Majima, Y., Deyama, S., Takeda, H., Yoshioka, M., Minami, M. (2013). Activation of β -adrenoceptors in the bed nucleus of the stria terminalis induces food intake reduction and anxiety-like behaviors. *Neuropharmacology*, 67, 326-330
2. **Deyama, S.**, Ide, S., Kondoh, N., Yamaguchi, T., Yoshioka, M., Minami, M. (2011). Inhibition of noradrenaline release by clonidine in the ventral bed nucleus of the stria terminalis attenuates pain-induced aversion in rats. *Neuropharmacology*, 61(1-2), 156-160
3. **Deyama, S.**, Takishita, A., Tanimoto, S., Ide, S., Nakagawa, T., Satoh, M., Minami, M. (2010). Roles of β - and α 2-adrenoceptors within the central nucleus of the amygdala in the visceral pain-induced aversion in rats. *Journal of Pharmacological Sciences*, 114(1), 123-126
4. **Deyama, S.**, Katayama, T., Kondoh, N., Nakagawa, T., Kaneko, S., Yamaguchi, T., Yoshioka, M., Minami, M. (2009). Role of enhanced noradrenergic transmission within the ventral bed nucleus of the stria terminalis in visceral pain-induced aversion in rats. *Behavioral Brain Research*, 197(2), 279–283.
5. **Deyama, S.**, Katayama, T., Ohno, A., Nakagawa, T., Kaneko, S., Yamaguchi, T., Yoshioka, M., Minami, M. (2008). Activation of the β -adrenoceptor-protein kinase A signaling pathway within the ventral bed nucleus of the stria terminalis mediates the negative affective component of pain in rats. *Journal of Neuroscience*, 28(31), 7728–7736.
6. **Deyama, S.**, Yamamoto, J., Machida, T., Tanimoto, S., Nakagawa, T., Kaneko, S., Satoh, M., Minami, M. (2007). Inhibition of glutamatergic transmission by morphine in the basolateral amygdaloid nucleus reduces pain-induced aversion. *Neuroscience Research*, 59(2), 199–204.

7. **Deyama, S.**, Yamamoto, J., Machida, T., Tanimoto, S., Nakagawa, T., Kaneko, S., Satoh, M., Minami, M. (2007).
Involvement of the bed nucleus of the stria terminalis in the negative affective component of visceral and somatic pain in rats.
Behavioral Brain Research, 176(2), 367–371.

Books

1. 出山 諭司、南 雅文 (2006).
痛みの情動的側面の解析法.
痛み研究のアプローチ, (河谷 正仁 編) , 57-63. 真興交易(株)医学出版部.