

List of Publications in 2023

WPI papers

(1) Original Articles

1. Amezawa M, Yamamoto N, Nagumo Y, Kutsumura N, Ishikawa Y, Yanagisawa M, Nagase H, Saitoh T (2023) Design and synthesis of novel orexin 2 receptor agonists with a 1,3,5-trioxazatriquinane skeleton. *Bioorg. Med. Chem. Lett.* 82129151. doi:10.1016/j.bmcl.2023.129151
2. Asano F, Kim SJ, Fujiyama T, Miyoshi C, Hotta-Hirashima N, Asama N, Iwasaki K, Kakizaki M, Mizuno S, Mieda M, Sugiyama F, Takahashi S, Shi S, Hirano A, Funato H, Yanagisawa M (2023) SIK3-HDAC4 in the suprachiasmatic nucleus regulates the timing of arousal at the dark onset and circadian period in mice. *Proc. Natl. Acad. Sci. U.S.A.* **120**(11):e2218209120. doi:10.1073/pnas.2218209120
3. Chen C, Kawano T, Yanagisawa M, Hayashi Y (2023) Forward genetic screen of *Caenorhabditis elegans* mutants with impaired sleep reveals a crucial role of neuronal diacylglycerol kinase DGK-1 in regulating sleep. *Genetics.* **225**(2). doi:10.1093/genetics/iyad140
4. Elhosainy A, Suzuki-Abe H, Kaushik MK, Kim SJ, Saitoh T, Ishikawa Y, Hotta-Hirashima N, Miyoshi C, Funato H, Yanagisawa M (2023) Face validation and pharmacologic analysis of SIK3^{Sleepy} mutant mouse as a possible model of idiopathic hypersomnia. *Eur. J. Pharmacol.* 954175877. doi:10.1016/j.ejphar.2023.175877
5. Fan Z, Suzuki Y, Jiang L, Okabe S, Honda S, Endo J, Watanabe T, Abe T (2023) Peripheral blood flow estimated by laser doppler flowmetry provides additional information about sleep state beyond that provided by pulse rate variability. *Front. Physiol.* 141040425. doi:10.3389/fphys.2023.1040425
6. Fifel K, Yanagisawa M, Deboer T (2023) Mechanisms of sleep/wake regulation under hypodopaminergic state: Insights from MitoPark mouse model of parkinson's disease. *Adv. Sci.* **10**(5):doi:10.1002/advs.202203170
7. Guo H, Jiang J, Xu W, Zhang M, Chen H, Shi H, Wang L, He M, Lazarus M, Li S, Huang Z, Qu W (2023) Parasubthalamic calretinin neurons modulate wakefulness associated with exploration in male mice. *Nat. Commun.* **14**(1):2346. doi:10.1038/s41467-023-37797-y
8. Iio K, Hashimoto K, Nagumo Y, Amezawa M, Hasegawa T, Yamamoto N, Kutsumura N, Takeuchi K, Ishikawa Y, Yamamoto H, Tokuda A, Sato T, Uchida Y, Inoue A, Tanimura R, Yanagisawa M, Nagase H, Saitoh T (2023) Design and synthesis of orexin 1 receptor-selective agonists. *J. Med. Chem.* **66**(8):5453-5464. doi:10.1021/acs.jmedchem.2c01773
9. Inoue M, Nakajima S, Inada N, Oi H, Sato N, Miyazaki Y, Takashina H, Tagaya H, Adachi Y, Kuga H (2023) Development of the parenting behavior checklist to promote preschoolers' sleep (PCPP). *Behav. Sleep Med.* doi:10.1080/15402002.2023.2241590
10. Ishido H, Chiba S, Takahashi H, Isa M, Ogawa Y, Kubota H, Imanishi A, Omori Y, Ono T, Tsutsui K, Han G, Kondo H, Tsuji H, Nakamagoe K, Ishii A, Tanaka K, Tamaoka A, Shimizu T, Nishino S, Miyamoto T, Kanbayashi T (2023) Characteristics of hypersomnia due to inflammatory demyelinating diseases of the central nervous system. *BMJ Neurol Open.* **5**(1):e000428. doi:10.1136/bmjno-2023-000428
11. Iwagami M, Seol J, Hiei T, Tani A, Chiba S, Kanbayashi T, Kondo H, Tanaka T, Yanagisawa M (2023) Association between electroencephalogram-based sleep characteristics and physical health in the general adult population. *Sci Rep.* **13**(1):21545. doi:10.1038/s41598-023-47979-9
12. Kawaminami A, Yamada D, Yoshioka T, Hatakeyama A, Nishida M, Kajino K, Saitoh T, Nagase H, Saitoh A (2023) The delta opioid receptor agonist KNT-127 relieves innate anxiety-like behavior in

mice by suppressing transmission from the prelimbic cortex to basolateral amygdala. *Neuropsychopharmacol. Rep.* doi:10.1002/npr2.12406

13. Kawano T, Kashiwagi M, Kanuka M, Chen C, Yasugaki S, Hatori S, Miyazaki S, Tanaka K, Fujita H, Nakajima T, Yanagisawa M, Nakagawa Y, Hayashi Y (2023) ER proteostasis regulators cell-non-autonomously control sleep. *Cell Reports.* **42**(3):112267. doi:10.1016/j.celrep.2023.112267
14. Khaliq V, Kitagawa H, Amagasa T (2023) BPF: A novel cluster boundary points detection method for static and streaming data. *Knowl. Inf. Syst.* **65**(7):2991-3022. doi:10.1007/s10115-023-01854-1
15. Kobayashi R, Nakane S, Tomita J, Funato H, Yanagisawa M, Kume K (2023) A phosphorylation-deficient mutant of *Sik3*, a homolog of *sleepy*, alters circadian sleep regulation by PDF neurons in *Drosophila*. *Front. Neurosci.* 171181555. doi:10.3389/fnins.2023.1181555
16. Korkutata M, Lazarus M (2023) Adenosine A2A receptors and sleep. *Int. Rev. Neurobiol.* 170155-178. doi:10.1016/bs.irn.2023.04.007
17. Koutsoumparis A, Busack I, Chen C, Hayashi Y, Braeckman BP, Meierhofer D, Bringmann H (2023) Reverse genetic screening during L1 arrest reveals a role of the diacylglycerol kinase 1 gene *dgk-1* and sphingolipid metabolism genes in sleep regulation. *Genetics.* **225**(2). doi:10.1093/genetics/iyad124
18. Koyanagi I, Tezuka T, Yu J, Srinivasan S, Naoi T, Yasugaki S, Nakai A, Taniguchi S, Hayashi Y, Nakano Y, Sakaguchi M (2023) Fully automatic REM sleep stage-specific intervention systems using single EEG in mice. *Neurosci. Res.* 18651-58. doi:10.1016/j.neures.2022.10.001
19. Li R, Masuda K, Ono D, Kanbayashi T, Hirano A, Sakurai T (2023) Aripiprazole disrupts cellular synchrony in the suprachiasmatic nucleus and enhances entrainment to environmental light-dark cycles in mice. *Front. Neurosci.* 171201137. doi:10.3389/fnins.2023.1201137
20. Lin Y, Roy K, Ioka S, Otani R, Amezawa M, Ishikawa Y, Cherasse Y, Kaushik MK, Klewe-Nebenius D, Zhou L, Yanagisawa M, Oishi Y, Saitoh T, Lazarus M (2023) Positive allosteric adenosine A2A receptor modulation suppresses insomnia associated with mania- and schizophrenia-like behaviors in mice. *Front. Pharmacol.* 141138666. doi:10.3389/fphar.2023.1138666
21. Luo Y, Ge J, Chen Z, Liu Z, Lazarus M, Qu W, Hang Z, Li Y (2023) Ventral pallidal glutamatergic neurons regulate wakefulness and emotion through separated projections. *iScience.* **26**(8):107385. doi:10.1016/j.isci.2023.107385
22. Maeda K, Ohru S, Tokuda A, Nagumo Y, Yamamoto N, Tanimura R, Saitoh T, Kutsumura N, Nagase H (2023) Unexpected rearrangement reactions of the 14-aminonaltrexone skeleton. *Org. Lett.* **25**(19):3407-3411. doi:10.1021/acs.orglett.3c00956
23. Martino P, Sunkara R, Heitman N, Rangl M, Brown A, Saxena N, Grisanti L, Kohan D, Yanagisawa M, Rendl M (2023) Progenitor-derived endothelin controls dermal sheath contraction for hair follicle regression. *Nat. Cell Biol.* **25**(2):222-+. doi:10.1038/s41556-022-01065-w
24. Masuda K, Katsuda Y, Niwa Y, Sakurai T, Hirano A (2023) Analysis of circadian rhythm components in EEG/EMG data of aged mice. *Front. Neurosci.* 171173537. doi:10.3389/fnins.2023.1173537
25. Masuda K, Kon N, Iizuka K, Fukada Y, Sakurai T, Hirano A (2023) Singularity response reveals entrainment properties in mammalian circadian clock. *Nat. Commun.* **14**(1):2819. doi:10.1038/s41467-023-38392-x
26. Mizuno Y, Uehara T, Nakamura Y, Okadome T, Mukaino T, Koh K, Takiyama Y, Kanbayashi T, Isobe N, Kira J, Murai H, Shigeto H (2023) A case of monozygotic twins with hereditary spastic

paraplegia type 4 and epilepsy, of whom only one developed narcolepsy type 1. *J. Sleep Res.*
doi:10.1111/jsr.14102

27. Monma T, Matsui T, Inoue K, Masuchi K, Okada T, Tamura M, Ishii T, Satoh M, Tokuyama K, Takeda F (2023) Prevalence and risk factors of poor subjective sleep quality in elite judo athletes. *Sleep Biol. Rhythms.* **21**(3):289-297. doi:10.1007/s41105-023-00444-6
28. Moriya Y, Kasahara Y, Shimada M, Sakakibara Y, Fujii H, Nagase H, Ide S, Ikeda K, Hall FS, Uhl GR, Sora I (2023) Role for μ -opioid receptor in antidepressant effects of 8-opioid receptor agonist KNT-127. *J. Pharmacol. Sci.* **151**(3):135-141. doi:10.1016/j.jphs.2022.12.008
29. Mukai Y, Okubo TS, Lazarus M, Ono D, Tanaka KF, Yamanaka A (2023) Prostaglandin E2 induces long-lasting inhibition of noradrenergic neurons in the locus coeruleus and moderates the behavioral response to stressors. *J. Neurosci.* **43**(47):7982-7999. doi:10.1523/JNEUROSCI.0353-23.2023
30. Murakami Y, Yoshimura M, Klement WJ, Oda A, Sakamoto R, Yakabe M, Matsumoto A, Oketani R, Leproux P, Ikenouchi J, Browne WR, Kano H (2023) Backward multiplex coherent anti-stokes raman (CARS) spectroscopic imaging with electron CCD camera. *Opt. Continuum.* **2**(9):2044-2054. doi:10.1364/OPTCON.497869
31. Nasu Y, Aggarwal A, Le GNT, Vo CT, Kambe Y, Wang X, Beinlich FRM, Lee AB, Ram TR, Wang F, Gorzo KA, Kamijo Y, Boisvert M, Nishinami S, Kawamura G, Ozawa T, Toda H, Gordon GR, Ge S, Hirase H, Nedergaard M, Paquet ME, Drobizhev M, Podgorski K, Campbell RE (2023) Lactate biosensors for spectrally and spatially multiplexed fluorescence imaging. *Nat. Commun.* **14**(1):6598. doi:10.1038/s41467-023-42230-5
32. Nishioka T, Attachaipanich S, Hamaguchi K, Lazarus M, d'Exaerde Ad'K, Macpherson T, Hikida T (2023) Error-related signaling in nucleus accumbens D2 receptor-expressing neurons guides inhibition-based choice behavior in mice. *Nat. Commun.* **14**(1):2284. doi:10.1038/s41467-023-38025-3
33. Oda S, Funato H (2023) D1-and D2-type dopamine receptors are immunolocalized in pial and layer I astrocytes in the rat cerebral cortex. *Front. Neuroanat.* 171111008. doi:10.3389/fnana.2023.1111008
34. Okabe S, Abe T (2023) Subjectively intense odor does not affect dream emotions during rapid eye movement sleep. *Sci Rep.* **13**(1):10442. doi:10.1038/s41598-023-37151-8
35. Ollila HM, et al. (2023) Narcolepsy risk loci outline role of T cell autoimmunity and infectious triggers in narcolepsy. *Nat. Commun.* **14**(1):2709. doi:10.1038/s41467-023-36120-z
36. Ono Y, Ito R, Arai K, Singh G, Saitoh T, Russell RB, Raimondi F, Aoki J, Sakai J, Inoue A (2023) Chemogenetic activation of G12 signaling enhances adipose tissue browning. *Signal Transduct. Target. Ther.* **8**(1):307. doi:10.1038/s41392-023-01524-2
37. Prokofeva K, Saito Y.C, Niwa Y, Mizuno S, Takahashi S, Hirano A, Sakurai T (2023) Structure and function of neuronal circuits linking ventrolateral preoptic nucleus and lateral hypothalamic area. *J. Neurosci.* **43**(22):4075-4092. doi:10.1523/JNEUROSCI.1913-22.2023
38. Saitoh T, Sakurai T (2023) The present and future of synthetic orexin receptor agonists. *Peptides.* 167171051. doi:10.1016/j.peptides.2023.171051
39. Seol J, Kokudo C, Park I, Zhang S, Yajima K, Okura T, Tokuyama K (2023) Energy metabolism and thermoregulation during sleep in young and old females. *Sci Rep.* **13**(1):10416. doi:10.1038/s41598-023-37407-3

40. Seol J, Lim N, Nagata K, Okura T (2023) Effects of home-based manual dexterity training on cognitive function among older adults: A randomized controlled trial. *Eur. Rev. Aging Phys. Act.* **20**(1):9. doi:10.1186/s11556-023-00319-2
41. Takahashi TM, Sakurai T, Hirano A (2023) Measuring body temperature of freely moving mice under an optogenetics-induced long-term hypothermic state. *STAR Protoc.* **4**(2):102321. doi:10.1016/j.xpro.2023.102321
42. Takenawa S, Nagasawa Y, Go K, Cherasse Y, Mizuno S, Sano K, Ogawa S (2023) Activity of estrogen receptor β expressing neurons in the medial amygdala regulates preference toward receptive females in male mice. *Proc. Natl. Acad. Sci. U.S.A.* **120**(42):e2305950120. doi:10.1073/pnas.2305950120
43. Tsuneoka Y, Nishikawa T, Furube E, Okamoto K, Yoshimura R, Funato H, Miyata S (2023) Characterization of TRPM8-expressing neurons in the adult mouse hypothalamus. *Neurosci. Lett.* 814137463. doi:10.1016/j.neulet.2023.137463
44. Yada Y, Matsumoto M, Inoue T, Baba A, Higuchi R, Kawai C, Yanagisawa M, Kitamura D, Ohga S, Kurosaki T, Baba Y (2023) STIM-mediated calcium influx regulates maintenance and selection of germinal center B cells. *J. Exp. Med.* **221**(1):e20222178. doi:10.1084/jem.20222178
45. Yajima K, Chiba S, Park I, Ogata H, Kayaba M, Ishihara A, Tanaka Y, Simeng Z, Jaehoon S, Katakura M, Tokuyama K (2023) Dietary palmitic acid to oleic acid ratio modulates energy metabolism and biological rhythms in young healthy japanese males. *Br.J.Nutr.* doi:10.1017/S0007114523001770
46. Yamada M, Kitagawa H, Amagasa T, Matono A (2023) Augmented lineage: Traceability of data analysis including complex UDF processing. *Vldb J.* **32**(5):963-983. doi:10.1007/s00778-022-00769-7
47. Yoshioka T, Yamada D, Segi-Nishida E, Nagase H, Saitoh A (2023) KNT-127, a selective delta opioid receptor agonist, shows beneficial effects in the hippocampal dentate gyrus of a chronic vicarious social defeat stress mouse model. *Neuropharmacology.* 232109511. doi:10.1016/j.neuropharm.2023.109511
48. Yun R, Hong E, Kim J, Park B, Kim S J, Lee B, Song YS, Kim S, Park S, Kang JM (2023) N-linked glycosylation is essential for anti-tumor activities of KIAA1324 in gastric cancer. *Cell Death Dis.* **14**(8):546. doi:10.1038/s41419-023-06083-6
49. Miyanishi K, Hotta-Hirashima N, Miyoshi C, Hayakawa S, Kakizaki M, Kanno S, Ikkyu A, Funato H, Yanagisawa M. (2023) Microglia modulate sleep/wakefulness under baseline conditions and under acute social defeat stress in adult mice. *Neurosci. Res.* doi:10.1016/j.neures.2023.11.010
50. Kanda T, Aritake T, Ohyama K, Vogt KE, Makino Y, McHugh T, Hino H, Akaho S, Murata N (2023) Hawkes process modeling quantifies complicated firing behaviors of cortical neurons during sleep and wakefulness. *bioRxiv.* doi:10.1101/2023.07.29.550297
51. Díaz J, Ando H, Han G, Malyshevskaya O, Hayashi X, Letelier J, Yanagisawa M, Vogt KE (2023) Recovering arrhythmic EEG transients from their stochastic interference. *arXiv.* arXiv:2303.07683doi:arXiv:2303.07683 2023
52. Bou S, Amagasa T, Kitagawa H, Shaikh SA, Matono A (2023) Efficient missing value imputation by maximum distance likelihood. *Proc. IEEE BigData 2023.* 331-338. doi:10.1109/BigData59044.2023.10386584
53. Trisminingsih R, Shaikh SA, Amagasa T, Kitagawa H, Matono A (2023) Trapm: A framework for online pattern matching over trajectory streams. *Proc. iiWAS 2023.* 510-525. doi:10.1007/978-3-031-48316-5_45

54. Ohmori Y, Kitagawa H, Amagasa T, Matono A (2023) Integration of knowledge bases and external information sources via magic properties and query-driven entity linking. *Proc. iiWAS 2023*. 309-324. doi:10.1007/978-3-031-48316-5_30
55. Bou S, Kitagawa H, Amagasa T (2023) Cpix: Real-time analytics over out-of-order data streams by incremental sliding-window aggregation. *Proc. ICDE 2023*. 3759-3760. doi:10.1109/ICDE55515.2023.00310
56. Hasegawa E, Li Y, Sakurai T (2023) Regulation of REM sleep in mice: The role of dopamine and serotonin function in the basolateral amygdala. *Neurosci. Res.* S0168-0102(23):168. doi:10.1016/j.neures.2023.09.003

(2) Review articles

57. Ma W, Yuan P, Zhang H, Kong L, Lazarus M, Qu W, Wang Y, Huang Z (2023) Adenosine and P1 receptors: Key targets in the regulation of sleep, torpor, and hibernation. *Front. Pharmacol.* 141098976. doi:10.3389/fphar.2023.1098976
58. Oishi Y, Saito YC, Sakurai T (2023) GABAergic modulation of sleep-wake states. *Pharmacol. Ther.* 249108505. doi:10.1016/j.pharmthera.2023.108505
59. Sakurai K (2023) Rethinking c-fos for understanding drug action in the brain. *J. Biochem.* doi:10.1093/jb/mvad110
60. Yoshitake R, Park I, Ogata H, Omi N (2023) Meal timing and sleeping energy metabolism. *Nutrients.* **15**(3):763. doi:10.3390/nu15030763

(4) Other English Articles

61. Fan Z, Abe T (2023) Sleep deprivation enhances theta fluctuations in time perception. *Sleep.* 46A97.
62. Hasegawa E, Oishi Y, Kroeger D, Tsunematsu T, Dauvilliers Y (2023) Editorial: Neurobiology of sleeping behaviors. *Front. Behav. Neurosci.* 171131920. doi:10.3389/fnbeh.2023.1131920
63. Iwagami M (2023) Post hoc analysis of the SONAR trial: Potential analgesic effects of atrasentan? *Kidney Int.* **104**(6):1062-1064. doi:10.1016/j.kint.2023.09.018
64. Moriya H, Fujieda Y, Amengual O, Kanbayashi T, Atsumi T (2023) Hypothalamic lesion in a neuropsychiatric lupus patient with narcolepsy. *Scand. J. Rheumatol.* **52**(4):444-446. doi:10.1080/03009742.2023.2177432
65. Sakurai T, Hasegawa E (2023) Connecting the amygdala and dopamine: Exploring the mysteries of rapid-eye movement sleep. *Sleep.* **46**(8):doi:10.1093/sleep/zsad157
66. Yanagisawa M (2023) Deciphering the mystery of sleep: Toward the molecular substrate for sleepiness. *J. Hypertens.* 41E2.

WPI-related papers

(1) Original Articles

67. Fujino M, Morito N, Hayashi T, Ojima M, Ishibashi S, Kuno A, Koshiba S, Yamagata K, Takahashi S (2023) Transcription factor c-maf deletion improves streptozotocin-induced diabetic nephropathy by directly regulating SglT2 and Glut2. *JCI Insight.* **8**(6):e163306. doi:10.1172/jci.insight.163306
68. Fujino M, Ojima M, Ishibashi S, Mizuno S, Takahashi S (2023) Generation and mutational analysis of a transgenic murine model of the human MAF mutation. *Am. J. Med. Genet. A.* **191**(7):1878-1888. doi:10.1002/ajmg.a.63220

69. Gogoleva N, Shahri Z J, Noda A, Liao C, Wakimoto A, Inoue Y, Jeon H, Takahashi S, Hamada M (2023) Intraplacentar injection of AAV9-CMV-iCre results in the widespread transduction of multiple organs in double-reporter mouse embryos. *Exp. Anim.* **72**(4):460-467. doi:10.1538/expanim.23-0044
70. Han S, Nakakuki M, Nakagawa Y, Wang Y, Araki M, Yamamoto Y, Tokiwa H, Takeda H, Mizunoe Y, Motomura K, Ohno H, Kainoh K, Murayama Y, Aita Y, Takeuchi Y, Osaki Y, Miyamoto T, Sekiya M, Matsuzaka T, Yahagi N, Sone H, Daitoku H, Sato R, Kawano H, Shimano H (2023) Rhomboid protease RHBDL4/RHBDD1 cleaves SREBP-1c at endoplasmic reticulum monitoring and regulating fatty acids. *PNAS Nexus.* **2**(11):pgad351. doi:10.1093/pnasnexus/pgad351
71. Kim J, Kwon C, Nakamura K, Muromachi N, Mori H, Muroi S, Yamada Y, Saito H, Nakagawa Y, Fukamizu A (2023) Increased angiotensin II coupled with decreased Adra1a expression enhances cardiac hypertrophy in pregnancy-associated hypertensive mice. *J. Biol. Chem.* **299**(3):102964. doi:10.1016/j.jbc.2023.102964
72. Muroi K, Ishitsuka M, Hachisuka T, Shibata I, Ikeda T, Hori D, Doki S, Takahashi T, Sasahara S, Matsuzaki I (2023) Factors associated with work engagement of nurses during the fifth wave of the COVID-19 pandemic in japan: Web-based cross-sectional study. *JMIR Form. Res.* 7e45830. doi:10.2196/45830
73. Uemura SI, Kanbayashi T, Ito W, Terui Y, Satake M, Han GE, Shioya T, Nishino S. (2023) Changes in sleep profile on exposure to sodium chloride and artificially carbonated springs: A pilot study. *J Phys Ther Sci.* **35**(5):330-339. doi:10.1589/jpts.35.330
74. Yun R, Hong E, Kim J, Park B, Kim S J, Lee B, Song Y S, Kim S, Park S, Kang JM (2023) N-linked glycosylation is essential for anti-tumor activities of KIAA1324 in gastric cancer. *Cell Death Differ.* 14546. doi:10.1038/s41419-023-06083-6

(2) Review articles

75. Fujino M, Ojima M, Takahashi S (2023) Exploring large MAF transcription factors: Functions, pathology, and mouse models with point mutations. *Genes.* **14**(10):1883. doi:10.3390/genes14101883