Haruo Kasai

List of Publications by Year in Descending Order

145 papers	14,020 citations	55 h-index	118 g-index
155 ext. papers	15,661 ext. citations	10.1 avg, IF	6.22 L-index

#	Paper	IF	Citations
145	A behavioural correlate of the synaptic eligibility trace in the nucleus accumbens.. *Scientific Reports*, **2022**, 12, 1921	4.9	1
144	Tri-view two-photon microscopic image registration and deblurring with convolutional neural networks.. *Neural Networks*, **2022**, 152, 57-69	9.1	
143	Mechanical actions of dendritic-spine enlargement on presynaptic exocytosis. *Nature*, **2021**,	50.4	4
142	Spine dynamics in the brain, mental disorders and artificial neural networks. *Nature Reviews Neuroscience*, **2021**, 22, 407-422	13.5	14
141	The critical balance between dopamine D2 receptor and RGS for the sensitive detection of a transient decay in dopamine signal. *PLoS Computational Biology*, **2021**, 17, e1009364	5	0
140	Computational roles of intrinsic synaptic dynamics. *Current Opinion in Neurobiology*, **2021**, 70, 34-42	7.6	0
139	Dopamine D2 receptors in discrimination learning and spine enlargement. *Nature*, **2020**, 579, 555-560	50.4	49
138	Mu-net: Multi-scale U-net for two-photon microscopy image denoising and restoration. *Neural Networks*, **2020**, 125, 92-103	9.1	17
137	Dual-Component Structural Plasticity Mediated by CaMKII Autophosphorylation on Basal Dendrites of Cortical Layer 2/3 Neurones. *Journal of Neuroscience*, **2020**, 40, 2228-2245	6.6	7
136	Melanophilin Accelerates Insulin Granule Fusion without Predocking to the Plasma Membrane. *Diabetes*, **2020**, 69, 2655-2666	0.9	5
135	Signaling models for dopamine-dependent temporal contiguity in striatal synaptic plasticity. *PLoS Computational Biology*, **2020**, 16, e1008078	5	4
134	Computational Characteristics of the Striatal Dopamine System Described by Reinforcement Learning With Fast Generalization. *Frontiers in Computational Neuroscience*, **2020**, 14, 66	3.5	1
133	Generative and discriminative model-based approaches to microscopic image restoration and segmentation. *Microscopy (Oxford, England)*, **2020**, 69, 79-91	1.3	3
132	Signaling models for dopamine-dependent temporal contiguity in striatal synaptic plasticity **2020**, 16, e1008078		
131	Signaling models for dopamine-dependent temporal contiguity in striatal synaptic plasticity **2020**, 16, e1008078		
130	Signaling models for dopamine-dependent temporal contiguity in striatal synaptic plasticity **2020**, 16, e1008078		
129	Signaling models for dopamine-dependent temporal contiguity in striatal synaptic plasticity **2020**, 16, e1008078		

128	Signaling models for dopamine-dependent temporal contiguity in striatal synaptic plasticity **2020**, 16, e1008078		
127	Signaling models for dopamine-dependent temporal contiguity in striatal synaptic plasticity **2020**, 16, e1008078		
126	Bidirectional in vivo structural dendritic spine plasticity revealed by two-photon glutamate uncaging in the mouse neocortex. *Scientific Reports*, **2019**, 9, 13922	4.9	13
125	Nanoscale imaging reveals miRNA-mediated control of functional states of dendritic spines. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 9616-9621	11.5	16
124	Intrinsic Spine Dynamics Are Critical for Recurrent Network Learning in Models With and Without Autism Spectrum Disorder. *Frontiers in Computational Neuroscience*, **2019**, 13, 38	3.5	10
123	Calcineurin knockout mice show a selective loss of small spines. *Neuroscience Letters*, **2018**, 671, 99-102	3.3	8
122	Chemical Landscape for Tissue Clearing Based on Hydrophilic Reagents. *Cell Reports*, **2018**, 24, 2196-2210.e9	8.8	136
121	Volume Dynamics of Dendritic Spines in the Neocortex of Wild-Type and KO Mice. *ENeuro*, **2018**, 5,	3.9	13
120	Strong stimulation triggers full fusion exocytosis and very slow endocytosis of the small dense core granules in carotid glomus cells. *Journal of Neurogenetics*, **2018**, 32, 267-278	1.6	2
119	Engineering Pak1 Allosteric Switches. *ACS Synthetic Biology*, **2017**, 6, 1257-1262	5.7	18
118	Design and synthesis of a new chromophore, 2-(4-nitrophenyl)benzofuran, for two-photon uncaging using near-IR light. *Chemical Communications*, **2016**, 52, 331-4	5.8	29
117	State-dependent diffusion of actin-depolymerizing factor/cofilin underlies the enlargement and shrinkage of dendritic spines. *Scientific Reports*, **2016**, 6, 32897	4.9	33
116	Fast 3D visualization of endogenous brain signals with high-sensitivity laser scanning photothermal microscopy. *Biomedical Optics Express*, **2016**, 7, 1702-10	3.5	12
115	Implantable Microfluidic Device with Hydrogel Permeable Membrane for Delivering Chemical Compounds and Imaging Neural Cells in Living Mice. *Journal of Photopolymer Science and Technology = [Fotoporima Konwakai Shi]*, **2016**, 29, 513-518	0.7	5
114	Abnormal intrinsic dynamics of dendritic spines in a fragile X syndrome mouse model in vivo. *Scientific Reports*, **2016**, 6, 26651	4.9	43
113	Opposing roles for SNAP23 in secretion in exocrine and endocrine pancreatic cells. *Journal of Cell Biology*, **2016**, 215, 121-138	7.3	16
112	Design and Synthesis of a 4-Nitrobromobenzene Derivative Bearing an Ethylene Glycol Tetraacetic Acid Unit for a New Generation of Caged Calcium Compounds with Two-Photon Absorption Properties in the Near-IR Region and Their Application in Vivo. *ACS Omega*, **2016**, 1, 193-201	3.9	18
111	Two-photon fluorescence lifetime imaging of primed SNARE complexes in presynaptic terminals and □cells. *Nature Communications*, **2015**, 6, 8531	17.4	28

110	Labelling and optical erasure of synaptic memory traces in the motor cortex. *Nature*, **2015**, 525, 333-8	50.4	364
109	Exocytosis in Islet Cells **2015**, 475-510		
108	PAKs inhibitors ameliorate schizophrenia-associated dendritic spine deterioration in vitro and in vivo during late adolescence. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 6461-6	11.5	68
107	Caged glutamates with extended 1,2-dihydronaphthalene chromophore: design, synthesis, two-photon absorption property, and photochemical reactivity. *Journal of Organic Chemistry*, **2014**, 79, 7822-30	4.2	28
106	A critical time window for dopamine actions on the structural plasticity of dendritic spines. *Science*, **2014**, 345, 1616-20	33.3	314
105	Lab-on-a-brain: implantable micro-optical fluidic devices for neural cell analysis in vivo. *Scientific Reports*, **2014**, 4, 6721	4.9	23
104	Sub-diffraction resolution pump-probe microscopy with shot-noise limited sensitivity using laser diodes. *Optics Express*, **2014**, 22, 9024-32	3.3	38
103	Exocytosis in Islet Cells **2014**, 1-32		
102	GABA promotes the competitive selection of dendritic spines by controlling local Ca2+ signaling. *Nature Neuroscience*, **2013**, 16, 1409-16	25.5	134
101	Spatiotemporal dynamics of functional clusters of neurons in the mouse motor cortex during a voluntary movement. *Journal of Neuroscience*, **2013**, 33, 1377-90	6.6	60
100	In vivo optogenetic tracing of functional corticocortical connections between motor forelimb areas. *Frontiers in Neural Circuits*, **2013**, 7, 55	3.5	41
99	Munc18b is a major mediator of insulin exocytosis in rat pancreatic cells. *Diabetes*, **2013**, 62, 2416-28	0.9	34
98	Implementation of tetra-poly(ethylene glycol) hydrogel with high mechanical strength into microfluidic device technology. *Biomicrofluidics*, **2013**, 7, 54109	3.2	13
97	Evaluation of Dialkylaminofluorene-Based Hemicyanine Dyes for Second Harmonic Generation Imaging by the Direct Comparison Approach. *Bulletin of the Chemical Society of Japan*, **2013**, 86, 1190-1192	2.1	3
96	Next-generation transgenic mice for optogenetic analysis of neural circuits. *Frontiers in Neural Circuits*, **2013**, 7, 160	3.5	46
95	Exocytosis in Islet Cells **2013**, 1-33		
94	Polarity-dependent Photophysical Properties of Hemicyanine Dyes and Their Application in 2-Photon Microscopy Biological Imaging. *Chemistry Letters*, **2012**, 41, 528-530	1.7	3
93	Distinct initial SNARE configurations underlying the diversity of exocytosis. *Physiological Reviews*, **2012**, 92, 1915-64	47.9	105

92	A novel function of Noc2 in agonist-induced intracellular Ca2+ increase during zymogen-granule exocytosis in pancreatic acinar cells. *PLoS ONE*, **2012**, 7, e37048	3.7	10
91	Simultaneous visualization of multiple neuronal properties with single-cell resolution in the living rodent brain. *Molecular and Cellular Neurosciences*, **2011**, 48, 246-57	4.8	34
90	In vivo two-photon uncaging of glutamate revealing the structure-function relationships of dendritic spines in the neocortex of adult mice. *Journal of Physiology*, **2011**, 589, 2447-57	3.9	122
89	Two-photon uncaging microscopy. *Cold Spring Harbor Protocols*, **2011**, 2011, pdb.prot5620	1.2	10
88	Deletion of Ia-2 and/or Ia-2 in mice decreases insulin secretion by reducing the number of dense core vesicles. *Diabetologia*, **2011**, 54, 2347-57	10.3	41
87	Simultaneous two-photon activation of presynaptic cells and calcium imaging in postsynaptic dendritic spines. *Neural Systems & Circuits*, **2011**, 1, 2		7
86	Spatial distributions of GABA receptors and local inhibition of Ca2+ transients studied with GABA uncaging in the dendrites of CA1 pyramidal neurons. *PLoS ONE*, **2011**, 6, e22652	3.7	27
85	Two-color, two-photon uncaging of glutamate and GABA. *Nature Methods*, **2010**, 7, 123-5	21.6	113
84	Learning rules and persistence of dendritic spines. *European Journal of Neuroscience*, **2010**, 32, 241-9	3.5	87
83	Two-photon uncaging of gamma-aminobutyric acid in intact brain tissue. *Nature Chemical Biology*, **2010**, 6, 255-257	11.7	83
82	SNARE conformational changes that prepare vesicles for exocytosis. *Cell Metabolism*, **2010**, 12, 19-29	24.6	56
81	Class IA phosphatidylinositol 3-kinase in pancreatic cells controls insulin secretion by multiple mechanisms. *Cell Metabolism*, **2010**, 12, 619-32	24.6	84
80	Structural dynamics of dendritic spines in memory and cognition. *Trends in Neurosciences*, **2010**, 33, 121-9	13.3	566
79	Exocytosis in islet beta-cells. *Advances in Experimental Medicine and Biology*, **2010**, 654, 305-38	3.6	29
78	1-Acyl-5-methoxy-8-nitro-1,2-dihydroquinoline: a biologically useful photolabile precursor of carboxylic acids. *Tetrahedron Letters*, **2010**, 51, 1642-1647	2	12
77	Generation, elimination and weight fluctuations of synapses in the cerebral cortex. *Communicative and Integrative Biology*, **2009**, 2, 526-529	1.7	3
76	Transcranial optogenetic stimulation for functional mapping of the motor cortex. *Journal of Neuroscience Methods*, **2009**, 179, 258-63	3	85
75	The subspine organization of actin fibers regulates the structure and plasticity of dendritic spines. *Neuron*, **2008**, 57, 719-29	13.9	372

74	Principles of long-term dynamics of dendritic spines. *Journal of Neuroscience*, **2008**, 28, 13592-608	6.6	229
73	Three-dimensional mapping of unitary synaptic connections by two-photon macro photolysis of caged glutamate. *Journal of Neurophysiology*, **2008**, 99, 1535-44	3.2	50
72	Protein synthesis and neurotrophin-dependent structural plasticity of single dendritic spines. *Science*, **2008**, 319, 1683-7	33.3	482
71	Two-Photon Excitation Imaging of Insulin Exocytosis **2008**, 195-211		
70	Bernard Katz, quantal transmitter release and the foundations of presynaptic physiology. *Journal of Physiology*, **2007**, 578, 623-5	3.9	16
69	Two cAMP-dependent pathways differentially regulate exocytosis of large dense-core and small vesicles in mouse beta-cells. *Journal of Physiology*, **2007**, 582, 1087-98	3.9	57
68	High-speed mapping of synaptic connectivity using photostimulation in Channelrhodopsin-2 transgenic mice. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 8143-8	11.5	315
67	4-Carboxymethoxy-5,7-dinitroindolinyl-Glu: an improved caged glutamate for expeditious ultraviolet and two-photon photolysis in brain slices. *Journal of Neuroscience*, **2007**, 27, 6601-4	6.6	84
66	Exocytic process analyzed with two-photon excitation imaging in endocrine pancreas. *Endocrine Journal*, **2007**, 54, 337-46	2.9	13
65	Hepatocyte nuclear factor-4alpha is essential for glucose-stimulated insulin secretion by pancreatic beta-cells. *Journal of Biological Chemistry*, **2006**, 281, 5246-57	5.4	129
64	Vacuolar sequential exocytosis of large dense-core vesicles in adrenal medulla. *EMBO Journal*, **2006** , 25, 673-82	13	39
63	Rapid glucose sensing by protein kinase A for insulin exocytosis in mouse pancreatic islets. *Journal of Physiology*, **2006**, 570, 271-82	3.9	63
62	Two-photon excitation imaging of exocytosis and endocytosis and determination of their spatial organization. *Advanced Drug Delivery Reviews*, **2006**, 58, 850-77	18.5	36
61	The HNF-1 target collectrin controls insulin exocytosis by SNARE complex formation. *Cell Metabolism*, **2005**, 2, 373-84	24.6	126
60	Spine-neck geometry determines NMDA receptor-dependent Ca2+ signaling in dendrites. *Neuron*, **2005**, 46, 609-22	13.9	314
59	Genetically encoded bright Ca2+ probe applicable for dynamic Ca2+ imaging of dendritic spines. *Analytical Chemistry*, **2005**, 77, 5861-9	7.8	106
58	A new quantitative (two-photon extracellular polar-tracer imaging-based quantification (TEPIQ)) analysis for diameters of exocytic vesicles and its application to mouse pancreatic islets. *Journal of Physiology*, **2005**, 568, 891-903	3.9	28
57	Sequential compound exocytosis of large dense-core vesicles in PC12 cells studied with TEPIQ (two-photon extracellular polar-tracer imaging-based quantification) analysis. *Journal of Physiology*, **2005**, 568, 905-15	3.9	37

56	Exocytosis and endocytosis of small vesicles in PC12 cells studied with TEPIQ (two-photon extracellular polar-tracer imaging-based quantification) analysis. *Journal of Physiology*, **2005**, 568, 917-29	3.9	37
55	Rapid Ca2+-dependent increase in oxygen consumption by mitochondria in single mammalian central neurons. *Cell Calcium*, **2005**, 37, 359-70	4	43
54	Two-photon microscopic analysis of acetylcholine-induced mucus secretion in guinea pig nasal glands. *Cell Calcium*, **2005**, 37, 349-57	4	22
53	Number and density of AMPA receptors in single synapses in immature cerebellum. *Journal of Neuroscience*, **2005**, 25, 799-807	6.6	129
52	Rab27a mediates the tight docking of insulin granules onto the plasma membrane during glucose stimulation. *Journal of Clinical Investigation*, **2005**, 115, 388-396	15.9	129
51	Rab27a mediates the tight docking of insulin granules onto the plasma membrane during glucose stimulation. *Journal of Clinical Investigation*, **2005**, 115, 388-96	15.9	66
50	Sequential exocytosis of insulin granules is associated with redistribution of SNAP25. *Journal of Cell Biology*, **2004**, 165, 255-62	7.3	97
49	Stabilization of exocytosis by dynamic F-actin coating of zymogen granules in pancreatic acini. *Journal of Biological Chemistry*, **2004**, 279, 37544-50	5.4	110
48	Propagation of gammaPKC translocation along the dendrites of Purkinje cell in gammaPKC-GFP transgenic mice. *Genes To Cells*, **2004**, 9, 945-57	2.3	17
47	Structural basis of long-term potentiation in single dendritic spines. *Nature*, **2004**, 429, 761-6	50.4	1765
46	Structure-stability-function relationships of dendritic spines. *Trends in Neurosciences*, **2003**, 26, 360-8	13.3	635
45	Two-photon excitation imaging of pancreatic islets with various fluorescent probes. *Diabetes*, **2002**, 51 Suppl 1, S25-8	0.9	40
44	Switch to anaerobic glucose metabolism with NADH accumulation in the beta-cell model of mitochondrial diabetes. Characteristics of betaHC9 cells deficient in mitochondrial DNA transcription. *Journal of Biological Chemistry*, **2002**, 277, 41817-26	5.4	51
43	Fusion pore dynamics and insulin granule exocytosis in the pancreatic islet. *Science*, **2002**, 297, 1349-52	33.3	226
42	Fast and cAMP-sensitive mode of Ca(2+)-dependent exocytosis in pancreatic beta-cells. *Diabetes*, **2002**, 51 Suppl 1, S19-24	0.9	40
41	Dendritic spine geometry is critical for AMPA receptor expression in hippocampal CA1 pyramidal neurons. *Nature Neuroscience*, **2001**, 4, 1086-92	25.5	1174
40	Sequential-replenishment mechanism of exocytosis in pancreatic acini. *Nature Cell Biology*, **2001**, 3, 253-8	23.4	150
39	Ion selectivities of the Ca(2+) sensors for exocytosis in rat phaeochromocytoma cells. *Journal of Physiology*, **2001**, 533, 627-37	3.9	39

38	Hexamminecobalt(III) chloride inhibits glucose-induced insulin secretion at the exocytotic process. *Journal of Biological Chemistry*, **2001**, 276, 2979-85	5.4	6
37	NADH shuttle system regulates K(ATP) channel-dependent pathway and steps distal to cytosolic Ca(2+) concentration elevation in glucose-induced insulin secretion. *Journal of Biological Chemistry*, **1999**, 274, 25386-92	5.4	46
36	Post-priming actions of ATP on Ca2+-dependent exocytosis in pancreatic beta cells. *Proceedings of the National Academy of Sciences of the United States of America*, **1999**, 96, 760-5	11.5	143
35	Kinetic control of multiple forms of Ca(2+) spikes by inositol trisphosphate in pancreatic acinar cells. *Journal of Cell Biology*, **1999**, 146, 405-13	7.3	36
34	Role of NADH shuttle system in glucose-induced activation of mitochondrial metabolism and insulin secretion. *Science*, **1999**, 283, 981-5	33.3	399
33	Supralinear Ca2+ signaling by cooperative and mobile Ca2+ buffering in Purkinje neurons. *Neuron*, **1999**, 24, 989-1002	13.9	120
32	Comparative biology of Ca2+-dependent exocytosis: implications of kinetic diversity for secretory function. *Trends in Neurosciences*, **1999**, 22, 88-93	13.3	157
31	Multiple kinetic components and the Ca2+ requirements of exocytosis. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **1999**, 354, 331-5	5.8	10
30	Multiple and diverse forms of regulated exocytosis in wild-type and defective PC12 cells. *Proceedings of the National Academy of Sciences of the United States of America*, **1999**, 96, 945-9	11.5	56
29	Multiple exocytotic pathways in pancreatic beta cells. *Journal of Cell Biology*, **1997**, 138, 55-64	7.3	94
28	Cytoplasmic Ca2+ gradients evoked by acetylcholine and peptides in pancreatic acinar cells of the guinea-pig. *Pflugers Archiv European Journal of Physiology*, **1997**, 433, 397-402	4.6	9
27	Micromolar and submicromolar Ca2+ spikes regulating distinct cellular functions in pancreatic acinar cells. *EMBO Journal*, **1997**, 16, 242-51	13	119
26	Kinetic diversity in the fusion of exocytotic vesicles. *EMBO Journal*, **1997**, 16, 929-34	13	70
25	Two components of exocytosis and endocytosis in phaeochromocytoma cells studied using caged Ca2+ compounds. *Journal of Physiology*, **1996**, 494 (Pt 1), 53-65	3.9	64
24	Ca2+-dependent exocytotic pathways in Chinese hamster ovary fibroblasts revealed by a caged-Ca2+ compound. *Journal of Biological Chemistry*, **1996**, 271, 17751-4	5.4	76
23	Pancreatic beta-cell-specific targeted disruption of glucokinase gene. Diabetes mellitus due to defective insulin secretion to glucose. *Journal of Biological Chemistry*, **1995**, 270, 30253-6	5.4	167
22	Pancreatic calcium waves and secretion. *Novartis Foundation Symposium*, **1995**, 188, 104-16; discussion 116-20		7
21	Calcium and hormone action. *Annual Review of Physiology*, **1994**, 56, 297-319	23.1	276

20	Quantal properties of H-type glutamatergic synaptic input to the striatal medium spiny neurons. *Brain Research*, **1994**, 654, 177-9	3.7	8
19	Spatial dynamics of second messengers: IP3 and cAMP as long-range and associative messengers. *Trends in Neurosciences*, **1994**, 17, 95-101	13.3	274
18	Quantal properties of S-type glutamatergic synaptic input to the striatal medium spiny neuron from neonate rat. *Neuroscience Letters*, **1994**, 169, 199-202	3.3	4
17	Two distinct glutamatergic synaptic inputs to striatal medium spiny neurones of neonatal rats and paired-pulse depression. *Journal of Physiology*, **1994**, 476, 217-28	3.9	33
16	Cytosolic Ca2+ gradients, Ca2+ binding proteins and synaptic plasticity. *Neuroscience Research*, **1993**, 16, 1-7	2.9	53
15	Subcellular distribution of Ca2+ release channels underlying Ca2+ waves and oscillations in exocrine pancreas. *Cell*, **1993**, 74, 669-77	56.2	349
14	Quantal properties of single glutamatergic synaptic boutons in thin slices from rat neostriatum. *Annals of the New York Academy of Sciences*, **1993**, 707, 458-9	6.5	1
13	Dihydropyridine-sensitive and omega-conotoxin-sensitive calcium channels in a mammalian neuroblastoma-glioma cell line. *Journal of Physiology*, **1992**, 448, 161-88	3.9	155
12	Voltage- and time-dependent inhibition of neuronal calcium channels by a GTP-binding protein in a mammalian cell line. *Journal of Physiology*, **1992**, 448, 189-209	3.9	86
11	Cytosolic Ca2+ gradients triggering unidirectional fluid secretion from exocrine pancreas. *Nature*, **1990**, 348, 735-8	50.4	368
10	Modulation of Ca-channel current by an adenosine analog mediated by a GTP-binding protein in chick sensory neurons. *Pflugers Archiv European Journal of Physiology*, **1989**, 414, 145-9	4.6	102
9	Characterization of two kinds of high-voltage-activated Ca-channel currents in chick sensory neurons. Differential sensitivity to dihydropyridines and omega-conotoxin GVIA. *Pflugers Archiv European Journal of Physiology*, **1989**, 414, 150-6	4.6	223
8	Divalent cation dependent inactivation of the high-voltage-activated Ca-channel current in chick sensory neurons. *Pflugers Archiv European Journal of Physiology*, **1988**, 411, 695-7	4.6	31
7	Transformation of glial cells in mouse embryonic brain cells in vitro with simian virus 40. *Neuroscience Letters*, **1987**, 76, 239-44	3.3	4
6	Responsiveness of Clare-Bishop neurons to visual cues associated with motion of a visual stimulus in three-dimensional space. *Vision Research*, **1985**, 25, 407-14	2.1	50
5	Sympathetic ganglion neurons from aged humans grown in monolayer culture. *Neuroscience Letters* , **1983**, 38, 193-8	3.3	3
4	Computational characteristics of the striatal dopamine system described by reinforcement learning with fast generalization		1
3	Intrinsic spine dynamics are critical for recurrent network learning in models with and without autism spectrum disorder		2