Arthur Konnerth

List of Publications by Year
in descending order

106 papers	18,718 citations	15504 65 h-index	29157 104 g-index
106 all docs	106 docs citations	106 times ranked	18065 citing authors

#	Article	IF	Citations
1	In vivo two-photon calcium imaging of neuronal networks. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 7319-7324.	7.1	1,208
2	Imaging Calcium in Neurons. Neuron, 2012, 73, 862-885.	8.1	1,080
3	Clusters of Hyperactive Neurons Near Amyloid Plaques in a Mouse Model of Alzheimer's Disease. Science, 2008, 321, 1686-1689.	12.6	882
4	High-performance calcium sensors for imaging activity in neuronal populations and microcompartments. Nature Methods, 2019, 16, 649-657.	19.0	843
5	Long-term potentiation and functional synapse induction in developing hippocampus. Nature, 1996, 381, 71-75.	27.8	716
6	Critical role of soluble amyloid-Î² for early hippocampal hyperactivity in a mouse model of Alzheimerâ€™s disease. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 8740-8745.	7.1	541
7	Neurotrophin-evoked rapid excitation through TrkB receptors. Nature, 1999, 401, 918-921.	27.8	498
8	Absence epilepsy and sinus dysrhythmia in mice lacking the pacemaker channel HCN2. EMBO Journal, 2003, 22, 216-224.	7.8	471
9	Dendritic organization of sensory input to cortical neurons in vivo. Nature, 2010, 464, 1307-1312.	27.8	464
10	Large-scale oscillatory calcium waves in the immature cortex. Nature Neuroscience, 2000, 3, 452-459.	14.8	429
11	Postsynaptic Induction of BDNF-Mediated Long-Term Potentiation. Science, 2002, 295, 1729-1734.	12.6	427
12	Importance of the Intracellular Domain of NR2 Subunits for NMDA Receptor Function In Vivo. Cell, 1998, 92, 279-289.	28.9	419
13	A vicious cycle of Î² amyloidâ€“dependent neuronal hyperactivation. Science, 2019, 365, 559-565.	12.6	407
14	Histamine and noradrenaline decrease calcium-activated potassium conductance in hippocampal pyramidal cells. Nature, 1983, 302, 432-434.	27.8	398
15	A new class of synaptic response involving calcium release in dendritic spines. Nature, 1998, 396, 757-760.	27.8	390
16	Functional mapping of single spines in cortical neurons in vivo. Nature, 2011, 475, 501-505.	27.8	360
17	TRPC3 Channels Are Required for Synaptic Transmission and Motor Coordination. Neuron, 2008, 59, 392-398.	8.1	356
18	Subthreshold synaptic Ca2+ signalling in fine dendrites and spines of cerebellar Purkinje neurons. Nature, 1995, 373, 155-158.	27.8	336

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19	Truncated TrkB-T1 mediates neurotrophin-evoked calcium signalling in glia cells. Nature, 2003, 426, 74-78.	27.8	326
20	Î-Secretase processing of APP inhibits neuronal activity in the hippocampus. Nature, 2015, 526, 443-447.	27.8	308
21	NMDA Receptor-Mediated Subthreshold Ca²⁺Signals in Spines of Hippocampal Neurons. Journal of Neuroscience, 2000, 20, 1791-1799.	3.6	262
22	Neurotrophin-evoked depolarization requires the sodium channel NaV1.9. Nature, 2002, 419, 687-693.	27.8	250
23	Cortical calcium waves in resting newborn mice. Nature Neuroscience, 2005, 8, 988-990.	14.8	249
24	Dendritic spines: from structure to <i>in vivo</i> function. EMBO Reports, 2012, 13, 699-708.	4.5	248
25	Impairments of neural circuit function in Alzheimer's disease. Philosophical Transactions of the Royal Society B: Biological Sciences, 2016, 371, 20150429.	4.0	241
26	Sparsification of neuronal activity in the visual cortex at eye-opening. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 15049-15054.	7.1	240
27	Targeted bulk-loading of fluorescent indicators for two-photon brain imaging in vivo. Nature Protocols, 2006, 1, 380-386.	12.0	237
28	Making Waves: Initiation and Propagation of Corticothalamic Ca2+ Waves InÂVivo. Neuron, 2013, 77, 1136-1150.	8.1	217
29	Release and sequestration of calcium by ryanodine-sensitive stores in rat hippocampal neurones. Journal of Physiology, 1997, 502, 13-30.	2.9	211
30	Stores Not Just for Storage. Neuron, 2001, 31, 519-522.	8.1	210
31	Neurotrophin-Mediated Rapid Signaling in the Central Nervous System: Mechanisms and Functions. Physiology, 2005, 20, 70-78.	3.1	188
32	Neuronal hyperactivity â€" A key defect in Alzheimer's disease?. BioEssays, 2015, 37, 624-632.	2.5	182
33	Cell-type-specific profiling of brain mitochondria reveals functional and molecular diversity. Nature Neuroscience, 2019, 22, 1731-1742.	14.8	181
34	Rescue of long-range circuit dysfunction in Alzheimer's disease models. Nature Neuroscience, 2015, 18, 1623-1630.	14.8	179
35	Improved calcium imaging in transgenic mice expressing a troponin Câ€"based biosensor. Nature Methods, 2007, 4, 127-129.	19.0	177
36	Impairment of Mossy Fiber Long-Term Potentiation and Associative Learning in Pituitary Adenylate Cyclase Activating Polypeptide Type I Receptor-Deficient Mice. Journal of Neuroscience, 2001, 21, 5520-5527.	3.6	167

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37	NMDA Receptor-Dependent Multidendrite Ca 2+ Spikes Required for Hippocampal Burst Firing InÂVivo. Neuron, 2014, 81, 1274-1281.	8.1	162
38	STIM1 Controls Neuronal Ca2+ Signaling, mGluR1-Dependent Synaptic Transmission, and Cerebellar Motor Behavior. Neuron, 2014, 82, 635-644.	8.1	162
39	Calbindin in Cerebellar Purkinje Cells Is a Critical Determinant of the Precision of Motor Coordination. Journal of Neuroscience, 2003, 23, 3469-3477.	3.6	158
40	In vivo two-photon imaging of sensory-evoked dendritic calcium signals in cortical neurons. Nature Protocols, 2011, 6, 28-35.	12.0	156
41	Development of Direction Selectivity in Mouse Cortical Neurons. Neuron, 2011, 71, 425-432.	8.1	156
42	NMDA Receptor-Mediated Na⁺Signals in Spines and Dendrites. Journal of Neuroscience, 2001, 21, 4207-4214.	3.6	155
43	What Happens with the Circuit in Alzheimer's Disease in Mice and Humans?. Annual Review of Neuroscience, 2018, 41, 277-297.	10.7	154
44	Roles of Glutamate Receptor Î´2 Subunit (GluRÎ´2) and Metabotropic Glutamate Receptor Subtype 1 (mGluR1) in Climbing Fiber Synapse Elimination during Postnatal Cerebellar Development. Journal of Neuroscience, 2001, 21, 9701-9712.	3.6	152
45	Impairment of LTD and cerebellar learning by Purkinje cellâ€“specific ablation of cGMP-dependent protein kinase I. Journal of Cell Biology, 2003, 163, 295-302.	5.2	136
46	An assay to image neuronal microtubule dynamics in mice. Nature Communications, 2014, 5, 4827.	12.8	132
47	Dendritic coding of multiple sensory inputs in single cortical neurons in vivo. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 15420-15425.	7.1	127
48	Decreased amyloid-Î² and increased neuronal hyperactivity by immunotherapy in Alzheimer's models. Nature Neuroscience, 2015, 18, 1725-1727.	14.8	121
49	Staged decline of neuronal function in vivo in an animal model of Alzheimer's disease. Nature Communications, 2012, 3, 774.	12.8	116
50	Functional Reconstitution of Vascular Smooth Muscle Cells With cGMP-Dependent Protein Kinase I Isoforms. Circulation Research, 2002, 90, 1080-1086.	4.5	115
51	From modulator to mediator: rapid effects of BDNF on ion channels. BioEssays, 2004, 26, 1185-1194.	2.5	103
52	Deep two-photon brain imaging with a red-shifted fluorometric Ca ²⁺ indicator. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 11377-11382.	7.1	100
53	BACE inhibition-dependent repair of Alzheimerâ€™s pathophysiology. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 8631-8636.	7.1	93
54	Disruption of the olivo-cerebellar circuit by Purkinje neuron-specific ablation of BK channels. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 12323-12328.	7.1	91

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55	Dendritic function in vivo. Trends in Neurosciences, 2015, 38, 45-54.	8.6	91
56	Determinants of postsynaptic Ca2+ signaling in Purkinje neurons. Cell Calcium, 2005, 37, 459-466.	2.4	88
57	Optical monitoring of brain function in vivo: from neurons to networks. Pflugers Archiv European Journal of Physiology, 2006, 453, 385-396.	2.8	87
58	Tracking Stem Cell Differentiation in the Setting of Automated Optogenetic Stimulation. Stem Cells, 2011, 29, 78-88.	3.2	85
59	GABAâ€mediated Ca 2+ signalling in developing rat cerebellar Purkinje neurones. Journal of Physiology, 2001, 536, 429-437.	2.9	82
60	Single-shock LTD by local dendritic spikes in pyramidal neurons of mouse visual cortex. Journal of Physiology, 2004, 560, 27-36.	2.9	82
61	Neurotrophin action on a rapid timescale. Current Opinion in Neurobiology, 2004, 14, 558-563.	4.2	80
62	Homosynaptic Long-Term Synaptic Potentiation of the â€œWinnerâ€•Climbing Fiber Synapse in Developing Purkinje Cells. Journal of Neuroscience, 2008, 28, 798-807.	3.6	79
63	Dendritic signal integration. Current Opinion in Neurobiology, 1997, 7, 385-390.	4.2	78
64	Patch-clamping in slices of mammalian CNS. Trends in Neurosciences, 1990, 13, 321-323.	8.6	70
65	Multibranch activity in basal and tuft dendrites during firing of layer 5 cortical neurons in vivo. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 13618-13623.	7.1	70
66	Rapid time course of action potentials in spines and remote dendrites of mouse visual cortex neurons. Journal of Physiology, 2010, 588, 1085-1096.	2.9	68
67	Two-photon chloride imaging in neurons of brain slices. Pflugers Archiv European Journal of Physiology, 2002, 445, 357-365.	2.8	67
68	LOTOS-based two-photon calcium imaging of dendritic spines in vivo. Nature Protocols, 2012, 7, 1818-1829.	12.0	67
69	Troponin C-based biosensors: A new family of genetically encoded indicators for in vivo calcium imaging in the nervous system. Cell Calcium, 2007, 42, 351-361.	2.4	62
70	Requirement of TrkB for synapse elimination in developing cerebellar Purkinje cells. Brain Cell Biology, 2007, 35, 87-101.	3.2	61
71	Soundâ€evoked network calcium transients in mouse auditory cortex <i>in vivo</i>. Journal of Physiology, 2012, 590, 899-918.	2.9	60
72	Linear integration of spine Ca ²⁺ signals in layer 4 cortical neurons in vivo. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 9277-9282.	7.1	55

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73	Localized calcium signalling and neuronal integration in cerebellar Purkinje neurones. Cell Calcium, 1996, 20, 215-226.	2.4	53
74	A Visual-Cue-Dependent Memory Circuit for Place Navigation. Neuron, 2018, 99, 47-55.e4.	8.1	53
75	Voltage-sensitive dyes measure potential changes in axons and glia of the frog optic nerve. Neuroscience Letters, 1986, 66, 49-54.	2.1	43
76	InÂVivo Functional Mapping of a Cortical Column at Single-Neuron Resolution. Cell Reports, 2019, 27, 1319-1326.e5.	6.4	43
77	Improved deep two-photon calcium imaging in vivo. Cell Calcium, 2017, 64, 29-35.	2.4	42
78	Dendritic spikes and activity-dependent synaptic plasticity. Cell and Tissue Research, 2006, 326, 369-377.	2.9	37
79	Presynaptic involvement in frequency facilitation in the hippocampal slice. Neuroscience Letters, 1983, 42, 255-260.	2.1	36
80	Local domains of motor cortical activity revealed by fiber-optic calcium recordings in behaving nonhuman primates. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 463-468.	7.1	36
81	Two types of functionally distinct Ca2+ stores in hippocampal neurons. Nature Communications, 2019, 10, 3223.	12.8	34
82	Fear learning induces Î±7-nicotinic acetylcholine receptor-mediated astrocytic responsiveness that is required for memory persistence. Nature Neuroscience, 2021, 24, 1686-1698.	14.8	31
83	Single-neuron representation of learned complex sounds in the auditory cortex. Nature Communications, 2020, 11, 4361.	12.8	29
84	MATRIEX imaging: multiarea two-photon real-time in vivo explorer. Light: Science and Applications, 2019, 8, 109.	16.6	26
85	GABA-mediated synaptic transmission in neuroendocrine cells: a patch-clamp study in a pituitary slice preparation. Pflugers Archiv European Journal of Physiology, 1992, 421, 364-373.	2.8	25
86	Abolishing cAMP sensitivity in HCN2 pacemaker channels induces generalized seizures. JCI Insight, 2019, 4, .	5.0	23
87	TRPC3â€dependent synaptic transmission in central mammalian neurons. Journal of Molecular Medicine, 2015, 93, 983-989.	3.9	21
88	Quantitative single-cell RT-PCR and Ca2+ imaging in brain slices. Pflugers Archiv European Journal of Physiology, 2006, 451, 716-726.	2.8	19
89	Depolarization-induced calcium signals in the somata of cerebellar Purkinje neurons. Neuroscience Research, 1995, 24, 87-95.	1.9	18
90	Genetically encoded Ca2+ sensors come of age. Nature Methods, 2008, 5, 761-762.	19.0	18

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91	<i>In vivo</i> deep twoâ€photon imaging of neural circuits with the fluorescent Ca²⁺ indicator Calâ€590. Journal of Physiology, 2017, 595, 3097-3105.	2.9	16
92	Synaptic dynamics and neuronal network connectivity are reflected in the distribution of times in Up states. Frontiers in Computational Neuroscience, 2015, 9, 96.	2.1	15
93	Impairments of glutamatergic synaptic transmission in Alzheimerâ€™s disease. Seminars in Cell and Developmental Biology, 2023, 139, 24-34.	5.0	15
94	Exciting glial oscillations. Nature Neuroscience, 2001, 4, 773-774.	14.8	11
95	In Vivo Two-Photon Calcium Imaging Using Multicell Bolus Loading. Cold Spring Harbor Protocols, 2010, 2010, pdb.prot5482.	0.3	11
96	Calcium requirement of long-term depression and rebound potentiation in cerebellar Purkinje neurons. Seminars in Cell Biology, 1994, 5, 243-250.	3.4	10
97	Neurotrophin-evoked rapid excitation of central neurons. Progress in Brain Research, 2000, 128, 243-249.	1.4	10
98	Self-regulating synapses. Nature, 2000, 405, 413-414.	27.8	8
99	Kainate Receptor-Induced Retrograde Inhibition of Glutamatergic Transmission in Vasopressin Neurons. Journal of Neuroscience, 2012, 32, 1301-1310.	3.6	4
100	Deep Two-Photon Imaging In Vivo with a Red-Shifted Calcium Indicator. Methods in Molecular Biology, 2019, 1929, 15-26.	0.9	4
101	Where have all the Orais gone? Commentary on â€œOrai1 channels are essential for amplification of glutamate-evoked Ca2+ signals in dendritic spines to regulate working and associative memoryâ€. Cell Calcium, 2021, 96, 102372.	2.4	3
102	Population imaging of synaptically released glutamate in mouse hippocampal slices. STAR Protocols, 2021, 2, 100877.	1.2	3
103	4D brain signaling. Nature Methods, 2007, 4, 19-20.	19.0	1
104	In vivo genome editing in single mammalian brain neurons through CRISPR-Cas9 and cytosine base editors. Computational and Structural Biotechnology Journal, 2021, 19, 2477-2485.	4.1	1
105	IntrazellulÃre Calciumregulation - Neue Einblicke in die neuronale Signalverarbeitung. E-Neuroforum, 1995, 1, 18-23.	0.1	0
106	Ca2+signals underlying synaptic plasticity in cerebellar Purkinje neurones. Seminars in Neuroscience, 1996, 8, 271-279.	2.2	0