Baljit S Khakh

List of Publications by Year
in descending order

96 papers	17,399 citations	23567 58 h-index	39675 94 g-index
101 all docs	101 docs citations	101 times ranked	16318 citing authors

#	Article	IF	Citations
1	Astrocyte scar formation aids central nervous system axon regeneration. Nature, 2016, 532, 195-200.	27.8	1,390
2	Optimization of a GCaMP Calcium Indicator for Neural Activity Imaging. Journal of Neuroscience, 2012, 32, 13819-13840.	3.6	1,099
3	Reactive astrocyte nomenclature, definitions, and future directions. Nature Neuroscience, 2021, 24, 312-325.	14.8	1,098
4	Diversity of astrocyte functions and phenotypes in neural circuits. Nature Neuroscience, 2015, 18, 942-952.	14.8	892
5	P2X receptors as cell-surface ATP sensors in health and disease. Nature, 2006, 442, 527-532.	27.8	772
6	Neural Circuit-Specialized Astrocytes: Transcriptomic, Proteomic, Morphological, and Functional Evidence. Neuron, 2017, 95, 531-549.e9.	8.1	556
7	CaImAn an open source tool for scalable calcium imaging data analysis. ELife, 2019, 8, .	6.0	551
8	Astrocyte Kir4.1 ion channel deficits contribute to neuronal dysfunction in Huntington's disease model mice. Nature Neuroscience, 2014, 17, 694-703.	14.8	486
9	Ca2+ signaling in astrocytes from Ip3r2â^'/â^' mice in brain slices and during startle responses in vivo. Nature Neuroscience, 2015, 18, 708-717.	14.8	411
10	TRPA1 channels regulate astrocyte resting calcium and inhibitory synapse efficacy through GAT-3. Nature Neuroscience, 2012, 15, 70-80.	14.8	391
11	Molecular physiology of p2x receptors and atp signalling at synapses. Nature Reviews Neuroscience, 2001, 2, 165-174.	10.2	355
12	Neuronal P2X transmitter-gated cation channels change their ion selectivity in seconds. Nature Neuroscience, 1999, 2, 322-330.	14.8	333
13	Imaging calcium microdomains within entire astrocyte territories and endfeet with GCaMPs expressed using adeno-associated viruses. Journal of General Physiology, 2013, 141, 633-647.	1.9	312
14	ATP-gated P2X cation-channels. Neuropharmacology, 2009, 56, 208-215.	4.1	309
15	The Emerging Nature of Astrocyte Diversity. Annual Review of Neuroscience, 2019, 42, 187-207.	10.7	309
16	Self-Organized Cerebral Organoids with Human-Specific Features Predict Effective Drugs to Combat Zika Virus Infection. Cell Reports, 2017, 21, 517-532.	6.4	305
17	Neuromodulation by Extracellular ATP and P2X Receptors in the CNS. Neuron, 2012, 76, 51-69.	8.1	301
18	New Transgenic Mouse Lines for Selectively Targeting Astrocytes and Studying Calcium Signals in Astrocyte Processes In Situ and InÂVivo. Neuron, 2016, 92, 1181-1195.	8.1	283

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19	Allosteric Control of Gating and Kinetics at P2X₄Receptor Channels. Journal of Neuroscience, 1999, 19, 7289-7299.	3.6	272
20	TRPA1 Channels Are Regulators of Astrocyte Basal Calcium Levels and Long-Term Potentiation via Constitutive D-Serine Release. Journal of Neuroscience, 2013, 33, 10143-10153.	3.6	264
21	Contribution of Calcium Ions to P2X Channel Responses. Journal of Neuroscience, 2004, 24, 3413-3420.	3.6	263
22	Reducing Astrocyte Calcium Signaling InÂVivo Alters Striatal Microcircuits and Causes Repetitive Behavior. Neuron, 2018, 99, 1170-1187.e9.	8.1	234
23	Two Forms of Astrocyte Calcium Excitability Have Distinct Effects on NMDA Receptor-Mediated Slow Inward Currents in Pyramidal Neurons. Journal of Neuroscience, 2008, 28, 6659-6663.	3.6	231
24	Hyperactivity with Disrupted Attention by Activation of an Astrocyte Synaptogenic Cue. Cell, 2019, 177, 1280-1292.e20.	28.9	228
25	Probing the Complexities of Astrocyte Calcium Signaling. Trends in Cell Biology, 2016, 26, 300-312.	7.9	215
26	A genetically targeted optical sensor to monitor calcium signals in astrocyte processes. Nature Neuroscience, 2010, 13, 759-766.	14.8	214
27	ATP Excites Interneurons and Astrocytes to Increase Synaptic Inhibition in Neuronal Networks. Journal of Neuroscience, 2004, 24, 8606-8620.	3.6	211
28	Conditions and Constraints for Astrocyte Calcium Signaling in the Hippocampal Mossy Fiber Pathway. Neuron, 2014, 82, 413-429.	8.1	206
29	The Double Life of ATP. Scientific American, 2009, 301, 84-92.	1.0	189
30	Dysfunctional Calcium and Glutamate Signaling in Striatal Astrocytes from Huntington's Disease Model Mice. Journal of Neuroscience, 2016, 36, 3453-3470.	3.6	185
31	A genetically encoded single-wavelength sensor for imaging cytosolic and cell surface ATP. Nature Communications, 2019, 10, 711.	12.8	185
32	Vesicular ATP Is the Predominant Cause of Intercellular Calcium Waves in Astrocytes. Journal of General Physiology, 2007, 129, 485-491.	1.9	184
33	Astrocyte Calcium Signaling: From Observations to Functions and the Challenges Therein. Cold Spring Harbor Perspectives in Biology, 2015, 7, a020404.	5.5	183
34	State-dependent cross-inhibition between transmitter-gated cation channels. Nature, 2000, 406, 405-410.	27.8	179
35	Inflammatory Mediators Alter the Astrocyte Transcriptome and Calcium Signaling Elicited by Multiple G-Protein-Coupled Receptors. Journal of Neuroscience, 2012, 32, 14489-14510.	3.6	178
36	Improved tools to study astrocytes. Nature Reviews Neuroscience, 2020, 21, 121-138.	10.2	178

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37	New Insights on Astrocyte Ion Channels: Critical for Homeostasis and Neuron-Glia Signaling. Journal of Neuroscience, 2015, 35, 13827-13835.	3.6	161
38	Unravelling and Exploiting Astrocyte Dysfunction in Huntingtonâ€™s Disease. Trends in Neurosciences, 2017, 40, 422-437.	8.6	155
39	Astrocyte molecular signatures in Huntingtonâ€™s disease. Science Translational Medicine, 2019, 11, .	12.4	152
40	Behaviorally consequential astrocytic regulation of neural circuits. Neuron, 2021, 109, 576-596.	8.1	150
41	ATP Receptor-Mediated Enhancement of Fast Excitatory Neurotransmitter Release in the Brain. Molecular Pharmacology, 1998, 54, 372-378.	2.3	139
42	ATP Modulation of Excitatory Synapses onto Interneurons. Journal of Neuroscience, 2003, 23, 7426-7437.	3.6	135
43	Breakdown of spatial coding and interneuron synchronization in epileptic mice. Nature Neuroscience, 2020, 23, 229-238.	14.8	126
44	All the light that we can see: a new era in miniaturized microscopy. Nature Methods, 2019, 16, 11-13.	19.0	125
45	An Optical Neuron-Astrocyte Proximity Assay at Synaptic Distance Scales. Neuron, 2018, 98, 49-66.e9.	8.1	117
46	An Angstrom Scale Interaction between Plasma Membrane ATP-Gated P2X2 and Â4Â2 Nicotinic Channels Measured with Fluorescence Resonance Energy Transfer and Total Internal Reflection Fluorescence Microscopy. Journal of Neuroscience, 2005, 25, 6911-6920.	3.6	96
47	Patchâ€“clamp coordinated spectroscopy shows P2X ₂ receptor permeability dynamics require cytosolic domain rearrangements but not Panx-1 channels. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 12063-12068.	7.1	96
48	Bulk Loading of Calcium Indicator Dyes to Study Astrocyte Physiology: Key Limitations and Improvements Using Morphological Maps. Journal of Neuroscience, 2011, 31, 9353-9358.	3.6	94
49	Dynamic Selectivity Filters in Ion Channels. Neuron, 1999, 23, 653-658.	8.1	91
50	Stress gates an astrocytic energy reservoir to impair synaptic plasticity. Nature Communications, 2020, 11, 2014.	12.8	89
51	P2X4 receptors in activated C8-B4 cells of cerebellar microglial origin. Journal of General Physiology, 2010, 135, 333-353.	1.9	85
52	Active role of capillary pericytes during stimulation-induced activity and spreading depolarization. Brain, 2018, 141, 2032-2046.	7.6	78
53	Context-Specific Striatal Astrocyte Molecular Responses Are Phenotypically Exploitable. Neuron, 2020, 108, 1146-1162.e10.	8.1	73
54	Monitoring astrocyte calcium microdomains with improved membrane targeted GCaMP reporters. Neuron Glia Biology, 2010, 6, 183-191.	1.6	72

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55	Preferential use of unobstructed lateral portals as the access route to the pore of human ATP-gated ion channels (P2X receptors). Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 13800-13805.	7.1	70
56	Modulation of fast synaptic transmission by presynaptic ligand-gated cation channels. Journal of the Autonomic Nervous System, 2000, 81, 110-121.	1.9	67
57	Astrocyteâ€“Neuron Interactions in the Striatum: Insights on Identity, Form, and Function. Trends in Neurosciences, 2019, 42, 617-630.	8.6	67
58	Transient, Consequential Increases in Extracellular Potassium Ions Accompany Channelrhodopsin2 Excitation. Cell Reports, 2019, 27, 2249-2261.e7.	6.4	64
59	Gated Access to the Pore of a P2X Receptor. Journal of Biological Chemistry, 2010, 285, 10110-10121.	3.4	62
60	Contribution of Transmembrane Regions to ATP-gated P2X2 Channel Permeability Dynamics. Journal of Biological Chemistry, 2005, 280, 6118-6129.	3.4	60
61	Control of P2X2 Channel Permeability by the Cytosolic Domain. Journal of General Physiology, 2002, 120, 119-131.	1.9	58
62	Genetically Encoded Calcium Indicators and Astrocyte Calcium Microdomains. Neuroscientist, 2013, 19, 274-291.	3.5	56
63	Regulation of P2X2 Receptors by the Neuronal Calcium Sensor VILIP1. Science Signaling, 2008, 1, ra8.	3.6	55
64	Time-Resolved Measurement of State-Specific P2X2 Ion Channel Cytosolic Gating Motions. Journal of Neuroscience, 2004, 24, 10475-10487.	3.6	54
65	Molecular and functional properties of cortical astrocytes during peripherally induced neuroinflammation. Cell Reports, 2021, 36, 109508.	6.4	54
66	P2X4 Receptor Reporter Mice: Sparse Brain Expression and Feeding-Related Presynaptic Facilitation in the Arcuate Nucleus. Journal of Neuroscience, 2016, 36, 8902-8920.	3.6	47
67	Specific and behaviorally consequential astrocyte Gq GPCR signaling attenuation inÂvivo with iÎ²ARK. Neuron, 2021, 109, 2256-2274.e9.	8.1	47
68	Coordination of escape and spatial navigation circuits orchestrates versatile flight from threats. Neuron, 2021, 109, 1848-1860.e8.	8.1	47
69	Tracking transmitter-gated P2X cation channel activation in vitro and in vivo. Nature Methods, 2008, 5, 87-93.	19.0	46
70	Imaging P2X4 Receptor Lateral Mobility in Microglia. Journal of Biological Chemistry, 2012, 287, 14734-14748.	3.4	45
71	Tunable diblock copolypeptide hydrogel depots for local delivery of hydrophobic molecules in healthy and injured central nervous system. Biomaterials, 2014, 35, 1989-2000.	11.4	45
72	Molecular Shape, Architecture, and Size of P2X4 Receptors Determined Using Fluorescence Resonance Energy Transfer and Electron Microscopy. Journal of Biological Chemistry, 2008, 283, 26241-26251.	3.4	40

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73	Imaging P2X4 receptor subcellular distribution, trafficking, and regulation using P2X4-pHluorin. Journal of General Physiology, 2014, 144, 81-104.	1.9	39
74	Reflections on the past two decades of neuroscience. Nature Reviews Neuroscience, 2020, 21, 524-534.	10.2	35
75	Neuronal P2X2 Receptors Are Mobile ATP Sensors That Explore the Plasma Membrane When Activated. Journal of Neuroscience, 2011, 31, 16716-16730.	3.6	32
76	Allosteric Modulation of Ca2+ flux in Ligand-gated Cation Channel (P2X4) by Actions on Lateral Portals. Journal of Biological Chemistry, 2012, 287, 7594-7602.	3.4	32
77	Astrocytes and Huntingtonâ€™s Disease. ACS Chemical Neuroscience, 2014, 5, 494-496.	3.5	31
78	ATP-gated P2X receptors in health and disease. Frontiers in Cellular Neuroscience, 2014, 8, 204.	3.7	26
79	Imaging Intracellular Ca²⁺ Signals in Striatal Astrocytes from Adult Mice Using Genetically-encoded Calcium Indicators. Journal of Visualized Experiments, 2014, , e51972.	0.3	24
80	ATP-gated P2X receptors on excitatory nerve terminals onto interneurons initiate a form of asynchronous glutamate release. Neuropharmacology, 2009, 56, 216-222.	4.1	23
81	Local and CNS-Wide Astrocyte Intracellular Calcium Signaling AttenuationIn Vivowith CalEx^{flox}Mice. Journal of Neuroscience, 2021, 41, 4556-4574.	3.6	18
82	A Basomedial Amygdala to Intercalated Cells Microcircuit Expressing PACAP and Its Receptor PAC1 Regulates Contextual Fear. Journal of Neuroscience, 2021, 41, 3446-3461.	3.6	16
83	Measuring Near Plasma Membrane and Global Intracellular Calcium Dynamics in Astrocytes. Journal of Visualized Experiments, 2009, , .	0.3	13
84	<scp>Laminaâ€specific</scp> properties of spinal astrocytes. Glia, 2021, 69, 1749-1766.	4.9	12
85	Inhibitory Interactions between Phosphorylation Sites in the C Terminus of Î±-Amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid-type Glutamate Receptor GluA1 Subunits. Journal of Biological Chemistry, 2014, 289, 14600-14611.	3.4	11
86	Making, Testing, and Using Potassium Ion Selective Microelectrodes in Tissue Slices of Adult Brain. Journal of Visualized Experiments, 2018, , .	0.3	11
87	Proteomics to Identify Proteins Interacting with P2X2 Ligand-Gated Cation Channels. Journal of Visualized Experiments, 2009, , .	0.3	10
88	Visualizing Astrocyte Morphology Using Lucifer Yellow Iontophoresis. Journal of Visualized Experiments, 2019, , .	0.3	9
89	SnapShot: Astrocyte interactions. Cell, 2022, 185, 220-220.e1.	28.9	7
90	Assessing Neuronâ€“Astrocyte Spatial Interactions Using the Neuronâ€“Astrocyte Proximity Assay. Current Protocols in Neuroscience, 2020, 91, e91.	2.6	5

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91	Slow Neuromodulation Mediated by ATP P2X Receptors. Neuron, 2014, 83, 257-259.	8.1	4
92	Cell-specific RNA purification to study translatomes of mouse central nervous system. STAR Protocols, 2022, 3, 101397.	1.2	4
93	Neurovascular and Immuno-Imaging: From Mechanisms to Therapies. Proceedings of the Inaugural Symposium. Frontiers in Neuroscience, 2016, 10, 46.	2.8	3
94	Measuring mobility of ATPâ€gated P2X channels in the plasma membrane. FASEB Journal, 2008, 22, 82-82.	0.5	0
95	A genetic approach to optically investigate P2X2 receptor activation in vivo using an activityâ€dependent FRET based reporter tag. FASEB Journal, 2010, 24, lb696.	0.5	0
96	Substituted cysteine accessibility mutagenesis of P2X2 receptors suggests the position of the gate with structural implications for closedâ€open transitions. FASEB Journal, 2010, 24, lb584.	0.5	0