

# Alexey Semyanov

## List of Publications by Year in descending order

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87  
papers

5,993  
citations

109321

35  
h-index

82547

72  
g-index

99  
all docs

99  
docs citations

99  
times ranked

5242  
citing authors

#	ARTICLE	IF	CITATIONS
1	Reactive astrocyte nomenclature, definitions, and future directions. <i>Nature Neuroscience</i> , 2021, 24, 312-325.	14.8	1,098
2	Tonically active GABAA receptors: modulating gain and maintaining the tone. <i>Trends in Neurosciences</i> , 2004, 27, 262-269.	8.6	698
3	GABA uptake regulates cortical excitability via cell type-specific tonic inhibition. <i>Nature Neuroscience</i> , 2003, 6, 484-490.	14.8	366
4	Multiple and Plastic Receptors Mediate Tonic GABAA Receptor Currents in the Hippocampus. <i>Journal of Neuroscience</i> , 2005, 25, 10016-10024.	3.6	227
5	Presynaptic, extrasynaptic and axonal GABAA receptors in the CNS: where and why?. <i>Progress in Biophysics and Molecular Biology</i> , 2005, 87, 33-46.	2.9	193
6	From purines to purinergic signalling: molecular functions and human diseases. <i>Signal Transduction and Targeted Therapy</i> , 2021, 6, 162.	17.1	171
7	Modulation of GABAergic Signaling among Interneurons by Metabotropic Glutamate Receptors. <i>Neuron</i> , 2000, 25, 663-672.	8.1	170
8	Kainate receptor-dependent axonal depolarization and action potential initiation in interneurons. <i>Nature Neuroscience</i> , 2001, 4, 718-723.	14.8	142
9	Astrocytes monitor cerebral perfusion and control systemic circulation to maintain brain blood flow. <i>Nature Communications</i> , 2020, 11, 131.	12.8	137
10	Making sense of astrocytic calcium signals – from acquisition to interpretation. <i>Nature Reviews Neuroscience</i> , 2020, 21, 551-564.	10.2	131
11	Astrocytic processes: from tripartite synapses to the active milieu. <i>Trends in Neurosciences</i> , 2021, 44, 781-792.	8.6	130
12	A functional role for both $\Gamma$ -aminobutyric acid (GABA) transporter 1 and GABA transporter 3 in the modulation of extracellular GABA and GABAergic tonic conductances in the rat hippocampus. <i>Journal of Physiology</i> , 2013, 591, 2429-2441.	2.9	118
13	Subcellular location of astrocytic calcium stores favors extrasynaptic neuron-astrocyte communication. <i>Cell Calcium</i> , 2013, 54, 343-349.	2.4	114
14	Tonic excitation or inhibition is set by GABAA conductance in hippocampal interneurons. <i>Nature Communications</i> , 2011, 2, 376.	12.8	112
15	Outwardly Rectifying Tonically Active GABA <sub>A</sub> Receptors in Pyramidal Cells Modulate Neuronal Offset, Not Gain. <i>Journal of Neuroscience</i> , 2009, 29, 15341-15350.	3.6	111
16	Astrocytic Ca <sup>2+</sup> signals are required for the functional integrity of tripartite synapses. <i>Molecular Brain</i> , 2013, 6, 6.	2.6	107
17	Neural Cell Adhesion Molecule-Associated Polysialic Acid Regulates Synaptic Plasticity and Learning by Restraining the Signaling through GluN2B-Containing NMDA Receptors. <i>Journal of Neuroscience</i> , 2010, 30, 4171-4183.	3.6	103
18	Astroglial atrophy in Alzheimer's disease. <i>Pflugers Archiv European Journal of Physiology</i> , 2019, 471, 1247-1261.	2.8	95

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19	Regulation of Excitability by Extrasynaptic GABAA Receptors. , 2008, 44, 29-48.		90
20	GABA-Independent GABA <sub>A</sub> Receptor Openings Maintain Tonic Currents. Journal of Neuroscience, 2013, 33, 3905-3914.	3.6	85
21	Astrocytic Coverage of Dendritic Spines, Dendritic Shafts, and Axonal Boutons in Hippocampal Neuropil. Frontiers in Cellular Neuroscience, 2018, 12, 248.	3.7	80
22	Dopamine elevates and lowers astroglial Ca <sup>2+</sup> through distinct pathways depending on local synaptic circuitry. Glia, 2017, 65, 447-459.	4.9	75
23	Astrocytic Atrophy Following Status Epilepticus Parallels Reduced Ca <sup>2+</sup> Activity and Impaired Synaptic Plasticity in the Rat Hippocampus. Frontiers in Molecular Neuroscience, 2018, 11, 215.	2.9	73
24	Astrocyte dystrophy in ageing brain parallels impaired synaptic plasticity. Aging Cell, 2021, 20, e13334.	6.7	72
25	Cholinergic Axons Modulate GABAergic Signaling among Hippocampal Interneurons via Postsynaptic $\hat{A}7$ Nicotinic Receptors. Journal of Neuroscience, 2007, 27, 5683-5693.	3.6	68
26	Retrograde Synaptic Signaling Mediated by K <sup>+</sup> Efflux through Postsynaptic NMDA Receptors. Cell Reports, 2013, 5, 941-951.	6.4	68
27	Astroglial asthenia and loss of function, rather than reactivity, contribute to the ageing of the brain. Pflugers Archiv European Journal of Physiology, 2021, 473, 753-774.	2.8	67
28	Spatiotemporal pattern of calcium activity in astrocytic network. Cell Calcium, 2019, 78, 15-25.	2.4	62
29	Bi-directional astrocytic regulation of neuronal activity within a network. Frontiers in Computational Neuroscience, 2012, 6, 92.	2.1	61
30	Spatiotemporal calcium dynamics in single astrocytes and its modulation by neuronal activity. Cell Calcium, 2014, 55, 119-129.	2.4	61
31	Glutamatergic Modulation of GABAergic Signaling Among Hippocampal Interneurons: Novel Mechanisms Regulating Hippocampal Excitability. Epilepsia, 2002, 43, 174-178.	5.1	59
32	Tonic GABA <sub>A</sub> conductance bidirectionally controls interneuron firing pattern and synchronization in the CA3 hippocampal network. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 504-509.	7.1	56
33	Backpropagating Action Potentials Enable Detection of Extrasynaptic Glutamate by NMDA Receptors. Cell Reports, 2012, 1, 495-505.	6.4	54
34	Different transporter systems regulate extracellular GABA from vesicular and non-vesicular sources. Frontiers in Cellular Neuroscience, 2013, 7, 23.	3.7	54
35	Morphological profile determines the frequency of spontaneous calcium events in astrocytic processes. Glia, 2019, 67, 246-262.	4.9	50
36	Physiology of Astroglial Excitability. Function, 2020, 1, zqaa016.	2.3	48

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37	Circadian Modulation of Neurons and Astrocytes Controls Synaptic Plasticity in Hippocampal Area CA1. <i>Cell Reports</i> , 2020, 33, 108255.	6.4	45
38	Caloric restriction triggers morphofunctional remodeling of astrocytes and enhances synaptic plasticity in the mouse hippocampus. <i>Cell Death and Disease</i> , 2020, 11, 208.	6.3	42
39	Calcium signaling in neuroglia. <i>International Review of Cell and Molecular Biology</i> , 2021, 362, 1-53.	3.2	42
40	Diffusional extrasynaptic neurotransmission via glutamate and GABA. <i>Neuroscience and Behavioral Physiology</i> , 2005, 35, 253-266.	0.4	34
41	Tonic GABAA conductance decreases membrane time constant and increases EPSP-spike precision in hippocampal pyramidal neurons. <i>Frontiers in Neural Circuits</i> , 2013, 7, 205.	2.8	26
42	Activity-dependent changes in transporter and potassium currents in hippocampal astrocytes. <i>Brain Research Bulletin</i> , 2018, 136, 37-43.	3.0	24
43	Purinergetic Receptors in Basal Ganglia Diseases: Shared Molecular Mechanisms between Huntington's and Parkinson's Disease. <i>Neuroscience Bulletin</i> , 2020, 36, 1299-1314.	2.9	24
44	Relative picrotoxin insensitivity distinguishes ionotropic GABA receptor-mediated IPSCs in hippocampal interneurons. <i>Neuropharmacology</i> , 2002, 43, 726-736.	4.1	23
45	Can diffuse extrasynaptic signaling form a guiding template?. <i>Neurochemistry International</i> , 2008, 52, 31-33.	3.8	21
46	Cell Type Specificity of GABAA Receptor Mediated Signaling in the Hippocampus. <i>CNS and Neurological Disorders</i> , 2003, 2, 240-248.	4.3	21
47	Denosing of two-photon fluorescence images with Block-Matching 3D filtering. <i>Methods</i> , 2014, 68, 308-316.	3.8	18
48	Cytotoxic effects of upconversion nanoparticles in primary hippocampal cultures. <i>RSC Advances</i> , 2016, 6, 33656-33665.	3.6	18
49	A high-fat diet changes astrocytic metabolism to promote synaptic plasticity and behavior. <i>Acta Physiologica</i> , 2022, 236, .	3.8	18
50	Kindling-like state in rat hippocampal CA1 slices induced by the repeated short-term extracellular K <sup>+</sup> increases: the role of L-type Ca <sup>2+</sup> -channels. <i>Neuroscience Letters</i> , 1997, 223, 177-180.	2.1	17
51	STATE AND PARAMETER ESTIMATION FOR CANONIC MODELS OF NEURAL OSCILLATORS. <i>International Journal of Neural Systems</i> , 2010, 20, 193-207.	5.2	16
52	Epileptiform activity and EPSP-spike potentiation induced in rat hippocampal CA1 slices by repeated high-K <sup>+</sup> : involvement of ionotropic glutamate receptors and Ca <sup>2+</sup> /calmodulin-dependent protein kinase II. <i>Neuropharmacology</i> , 2001, 40, 203-211.	4.1	15
53	Low micromolar Ba <sup>2+</sup> potentiates glutamate transporter current in hippocampal astrocytes. <i>Frontiers in Cellular Neuroscience</i> , 2013, 7, 135.	3.7	15
54	Title is missing!. <i>Neurophysiology</i> , 2002, 34, 71-80.	0.3	14

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55	K <sup>+</sup> efflux through postsynaptic NMDA receptors suppresses local astrocytic glutamate uptake. <i>Glia</i> , 2022, 70, 961-974.	4.9	14
56	Inclusive Brain: From Neuronal Doctrine to the Active Milieu. <i>Function</i> , 2022, 3, zqab069.	2.3	14
57	The great astroglial metabolic revolution: Mitochondria fuel astrocyte homeostatic support and neuroprotection. <i>Cell Calcium</i> , 2022, 104, 102583.	2.4	13
58	The decreased susceptibility to the development of in vitro kindling-like state in hippocampal CA1 slices of rats sensitive to audiogenic seizures. <i>Neuroscience Letters</i> , 1997, 230, 187-190.	2.1	12
59	Tonic GABA <sub>A</sub> Conductance Favors Spike-Timing-Dependent over Theta-Burst-Induced Long-Term Potentiation in the Hippocampus. <i>Journal of Neuroscience</i> , 2020, 40, 4266-4276.	3.6	12
60	Attenuation of the extracellular matrix increases the number of synapses but suppresses synaptic plasticity through upregulation of SK channels. <i>Cell Calcium</i> , 2021, 96, 102406.	2.4	10
61	Glial decline and loss of homeostatic support rather than inflammation defines cognitive aging. <i>Neural Regeneration Research</i> , 2022, 17, 565.	3.0	9
62	Second-harmonic generation voltage imaging at subcellular resolution in rat hippocampal slices. <i>Journal of Biophotonics</i> , 2010, 3, 784-790.	2.3	7
63	CalciumCV: Computer Vision Software for Calcium Signaling in Astrocytes. <i>Lecture Notes in Computer Science</i> , 2018, , 168-179.	1.3	6
64	Caloric restriction modifies spatiotemporal calcium dynamics in mouse hippocampal astrocytes. <i>Biochimica Et Biophysica Acta - Molecular Cell Research</i> , 2021, 1868, 119034.	4.1	6
65	In vivo hippocampal kindling occludes the development of in vitro kindling-like state in CA1 area of rat hippocampal slices. <i>Epilepsy Research</i> , 1999, 38, 75-85.	1.6	5
66	Network with shunting synapses as a non-linear frequency modulator. <i>Neural Networks</i> , 2011, 24, 407-416.	5.9	5
67	Dendrite and Axon Specific Geometrical Transformation in Neurite Development. <i>Frontiers in Computational Neuroscience</i> , 2015, 9, 156.	2.1	5
68	The Role of Energy Substrates in Astrocyte Calcium Activity of Rat Hippocampus in Early Postnatal Ontogenesis. <i>Sovremennye Tehnologii V Medicine</i> , 2015, 7, 14-19.	1.1	5
69	Model of self-oscillations in a neuron generator under the action of an active medium. <i>JETP Letters</i> , 2015, 102, 624-627.	1.4	3
70	Optical control of purinergic signaling. <i>Purinergic Signalling</i> , 2021, 17, 385-392.	2.2	3
71	Increases in the threshold for the development of epileptiform activity in field CA1 of Krushinskii-Molodnika rat hippocampal slices as an adaptive protective mechanism. <i>Neuroscience and Behavioral Physiology</i> , 1999, 29, 467-474.	0.4	2
72	The Effects of Activation of Kainate Receptors on Tonic and Phasic Gabaergic Inhibition in Interneurons in Field Ca1 of Guinea Pig Hippocampus Slices. <i>Neuroscience and Behavioral Physiology</i> , 2004, 34, 123-130.	0.4	2

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73	Modulation of Oscillatory Synchronization in an Interneuronal Network under the Influence of Tonic GABA-ergic Inhibition: a Model Study. <i>Neurophysiology</i> , 2011, 42, 318-324.	0.3	2
74	Fluorescence lifetime imaging reveals regulation of presynaptic Ca <sup>2+</sup> by glutamate uptake and mGluRs, but not somatic voltage in cortical neurons. <i>Journal of Neurochemistry</i> , 2021, 156, 48-58.	3.9	2
75	The anti-inflammatory astrocyte revealed: the role of the microbiome in shaping brain defences. <i>Signal Transduction and Targeted Therapy</i> , 2021, 6, 150.	17.1	2
76	TASK-3: New Target for Pain-Relief. <i>Neuroscience Bulletin</i> , 2020, 36, 951-954.	2.9	2
77	Kindling-like state occurring on periodic increases in the extracellular K <sup>+</sup> concentration in field CA1 in rat hippocampal slices. <i>Neuroscience and Behavioral Physiology</i> , 1998, 28, 504-512.	0.4	1
78	Effect of Diet as a Factor of Exposome on Brain Function. <i>Journal of Evolutionary Biochemistry and Physiology</i> , 2021, 57, 577-604.	0.6	1
79	Single cell electrophysiologic recordings in hippocampal slices. <i>Protocol Exchange</i> , 0, , .	0.3	1
80	Optical bioimaging and neuroimaging: from whole-body inspection to brain sensing. <i>Journal of Biophotonics</i> , 2010, 3, 741-742.	2.3	0
81	Astrocytic IP3-mediated Ca <sup>2+</sup> signaling is required for functional integrity of tripartite synapse. <i>Neuroscience Research</i> , 2010, 68, e243.	1.9	0
82	Astroglial Ca <sup>2+</sup> signals trigger pathological behaviour in optogenetic mouse. <i>Cell Calcium</i> , 2019, 82, 102062.	2.4	0
83	A Neural Circuit for Gut-Induced Sugar Preference. <i>Neuroscience Bulletin</i> , 2021, 37, 754-756.	2.9	0
84	The Ionic Mechanisms Regulating Astrocytic Calcium Dynamic. <i>Sovremennye Tehnologii V Medicine</i> , 2016, 8, 191-197.	1.1	0
85	The Role of the Brain Extracellular Matrix in Synaptic Plasticity After Brain Injuries (Review). <i>Sovremennye Tehnologii V Medicine</i> , 2016, 8, 260-268.	1.1	0
86	Circadian Modulation of Neurons and Astrocytes Controls Synaptic Plasticity in Hippocampal Area CA1. <i>SSRN Electronic Journal</i> , 0, , .	0.4	0
87	Restored oligodendrogenesis by fibroblast growth factor 17: molecular mechanism for rejuvenating ageing-related memory deficit. <i>Signal Transduction and Targeted Therapy</i> , 2022, 7, .	17.1	0