Roger A Nicoll

List of Publications by Year
in descending order

118 papers	28,039 citations	10389 72 h-index	19749 117 g-index
125 all docs	125 docs citations	125 times ranked	18447 citing authors

#	Article	IF	Citations
1	Endogenous cannabinoids mediate retrograde signalling at hippocampal synapses. Nature, 2001, 410, 588-592.	27.8	1,413
2	Evidence for silent synapses: Implications for the expression of LTP. Neuron, 1995, 15, 427-434.	8.1	1,147
3	An essential role for postsynaptic calmodulin and protein kinase activity in long-term potentiation. Nature, 1989, 340, 554-557.	27.8	1,079
4	AMPA Receptor Trafficking at Excitatory Synapses. Neuron, 2003, 40, 361-379.	8.1	1,014
5	Stargazin regulates synaptic targeting of AMPA receptors by two distinct mechanisms. Nature, 2000, 408, 936-943.	27.8	975
6	Contrasting properties of two forms of long-term potentiation in the hippocampus. Nature, 1995, 377, 115-118.	27.8	831
7	A Cortical Circuit for Gain Control by Behavioral State. Cell, 2014, 156, 1139-1152.	28.9	827
8	Synaptic plasticity at hippocampal mossy fibre synapses. Nature Reviews Neuroscience, 2005, 6, 863-876.	10.2	824
9	AMPARs and Synaptic Plasticity: The Last 25 Years. Neuron, 2013, 80, 704-717.	8.1	797
10	Potentiation of synaptic transmission in the hippocampus by phorbol esters. Nature, 1986, 321, 175-177.	27.8	668
11	Direct interactions between PSD-95 and stargazin control synaptic AMPA receptor number. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 13902-13907.	7.1	656
12	A Brief History of Long-Term Potentiation. Neuron, 2017, 93, 281-290.	8.1	602
13	Subunit Composition of Synaptic AMPA Receptors Revealed by a Single-Cell Genetic Approach. Neuron, 2009, 62, 254-268.	8.1	558
14	Synaptic Strength Regulated by Palmitate Cycling on PSD-95. Cell, 2002, 108, 849-863.	28.9	526
15	Silent synapses and the emergence of a postsynaptic mechanism for LTP. Nature Reviews Neuroscience, 2008, 9, 813-825.	10.2	519
16	SynGO: An Evidence-Based, Expert-Curated Knowledge Base for the Synapse. Neuron, 2019, 103, 217-234.e4.	8.1	518
17	Kainate receptors mediate a slow postsynaptic current in hippocampal CA3 neurons. Nature, 1997, 388, 182-186.	27.8	504
18	Two Distinct Forms of Long-Term Depression Coexist in CA1 Hippocampal Pyramidal Cells. Neuron, 1997, 18, 969-982.	8.1	490

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19	Functional studies and distribution define a family of transmembrane AMPA receptor regulatory proteins. Journal of Cell Biology, 2003, 161, 805-816.	5.2	486
20	A persistent postsynaptic modification mediates long-term potentiation in the hippocampus. Neuron, 1988, 1, 911-917.	8.1	472
21	NMDA application potentiates synaptic transmission in the hippocampus. Nature, 1988, 334, 250-252.	27.8	462
22	Stargazin modulates AMPA receptor gating and trafficking by distinct domains. Nature, 2005, 435, 1052-1058.	27.8	447
23	Use-dependent increases in glutamate concentration activate presynaptic metabotropic glutamate receptors. Nature, 1997, 385, 630-634.	27.8	436
24	Vesicular Glutamate Transporters 1 and 2 Target to Functionally Distinct Synaptic Release Sites. Science, 2004, 304, 1815-1819.	12.6	419
25	Postsynaptic Membrane Fusion and Long-Term Potentiation. Science, 1998, 279, 399-403.	12.6	416
26	The Expanding Social Network of Ionotropic Glutamate Receptors: TARPs and Other Transmembrane Auxiliary Subunits. Neuron, 2011, 70, 178-199.	8.1	373
27	Long-Term Potentiation: From CaMKII to AMPA Receptor Trafficking. Annual Review of Physiology, 2016, 78, 351-365.	13.1	362
28	Postsynaptic contribution to long-term potentiation revealed by the analysis of miniature synaptic currents. Nature, 1992, 355, 50-55.	27.8	361
29	Epilepsy-Related Ligand/Receptor Complex LGI1 and ADAM22 Regulate Synaptic Transmission. Science, 2006, 313, 1792-1795.	12.6	352
30	Synapse-Specific and Developmentally Regulated Targeting of AMPA Receptors by a Family of MAGUK Scaffolding Proteins. Neuron, 2006, 52, 307-320.	8.1	346
31	Auxiliary Subunits Assist AMPA-Type Glutamate Receptors. Science, 2006, 311, 1253-1256.	12.6	340
32	Diversity in NMDA Receptor Composition. Neuroscientist, 2013, 19, 62-75.	3.5	340
33	Bidirectional Synaptic Plasticity Regulated by Phosphorylation of Stargazin-like TARPs. Neuron, 2005, 45, 269-277.	8.1	311
34	Postsynaptic Density-95 Mimics and Occludes Hippocampal Long-Term Potentiation and Enhances Long-Term Depression. Journal of Neuroscience, 2003, 23, 5503-5506.	3.6	292
35	Disruption of LGI1â€“linked synaptic complex causes abnormal synaptic transmission and epilepsy. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 3799-3804.	7.1	287
36	Long-term potentiation is associated with increases in quantal content and quantal amplitude. Nature, 1992, 357, 240-244.	27.8	281

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37	LTP requires a reserve pool of glutamate receptors independent of subunit type. Nature, 2013, 493, 495-500.	27.8	275
38	Presynaptic Kainate Receptor Mediation of Frequency Facilitation at Hippocampal Mossy Fiber Synapses. Science, 2001, 291, 1972-1976.	12.6	245
39	Distinct Modes of AMPA Receptor Suppression at Developing Synapses by GluN2A and GluN2B: Single-Cell NMDA Receptor Subunit Deletion InÂVivo. Neuron, 2011, 71, 1085-1101.	8.1	241
40	TARP Î3-8 controls hippocampal AMPA receptor number, distribution and synaptic plasticity. Nature Neuroscience, 2005, 8, 1525-1533.	14.8	240
41	Development of Excitatory Circuitry in the Hippocampus. Journal of Neurophysiology, 1998, 79, 2013-2024.	1.8	238
42	Synaptic trafficking of glutamate receptors by MAGUK scaffolding proteins. Trends in Cell Biology, 2007, 17, 343-352.	7.9	237
43	Phorbol esters block a voltage-sensitive chloride current in hippocampal pyramidal cells. Nature, 1986, 321, 695-697.	27.8	224
44	PSD-95 family MAGUKs are essential for anchoring AMPA and NMDA receptor complexes at the postsynaptic density. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E6983-92.	7.1	215
45	Single-Cell Optogenetic Excitation Drives Homeostatic Synaptic Depression. Neuron, 2010, 68, 512-528.	8.1	209
46	Photoinactivation of Native AMPA Receptors Reveals Their Real-Time Trafficking. Neuron, 2005, 48, 977-985.	8.1	208
47	Rapid, Activation-Induced Redistribution of Ionotropic Glutamate Receptors in Cultured Hippocampal Neurons. Journal of Neuroscience, 1999, 19, 1263-1272.	3.6	195
48	Synaptic Activation of Presynaptic Kainate Receptors on Hippocampal Mossy Fiber Synapses. Neuron, 2000, 27, 327-338.	8.1	195
49	Effects of reduced vesicular filling on synaptic transmission in rat hippocampal neurones. Journal of Physiology, 2000, 525, 195-206.	2.9	191
50	Conservation of Glutamate Receptor 2-Containing AMPA Receptors during Long-Term Potentiation. Journal of Neuroscience, 2007, 27, 4598-4602.	3.6	182
51	Excitatory action of TRH on spinal motoneurones. Nature, 1977, 265, 242-243.	27.8	174
52	Presynaptic changes during mossy fibre LTP revealed by NMDA receptor-mediated synaptic responses. Nature, 1995, 376, 256-259.	27.8	172
53	Expression mechanisms underlying long-term potentiation: a postsynaptic view. Philosophical Transactions of the Royal Society B: Biological Sciences, 2003, 358, 721-726.	4.0	164
54	Phosphorylation of the Postsynaptic Density-95 (PSD-95)/Discs Large/Zona Occludens-1 Binding Site of Stargazin Regulates Binding to PSD-95 and Synaptic Targeting of AMPA Receptors. Journal of Neuroscience, 2002, 22, 5791-5796.	3.6	142

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55	The cellular and molecular landscape of neuroligins. Trends in Neurosciences, 2015, 38, 496-505.	8.6	141
56	NMDA receptors inhibit synapse unsilencing during brain development. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 5597-5602.	7.1	136
57	Independent mechanisms for long-term depression of AMPA and NMDA responses. Neuron, 1995, 15, 417-426.	8.1	125
58	Monitoring Glutamate Release during LTP with Glial Transporter Currents. Neuron, 1998, 21, 435-441.	8.1	124
59	The Stoichiometry of AMPA Receptors and TARPs Varies by Neuronal Cell Type. Neuron, 2009, 62, 633-640.	8.1	123
60	MAGUKs: multifaceted synaptic organizers. Current Opinion in Neurobiology, 2017, 43, 94-101.	4.2	121
61	Role of intercellular interactions in heterosynaptic long-term depression. Nature, 1996, 380, 446-450.	27.8	112
62	Long-term potentiation: Peeling the onion. Neuropharmacology, 2013, 74, 18-22.	4.1	112
63	The CaMKII/NMDA receptor complex controls hippocampal synaptic transmission by kinase-dependent and independent mechanisms. Nature Communications, 2018, 9, 2069.	12.8	110
64	Efficient, Complete Deletion of Synaptic Proteins using CRISPR. Neuron, 2014, 83, 1051-1057.	8.1	104
65	The role of SAP97 in synaptic glutamate receptor dynamics. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 3805-3810.	7.1	100
66	Phase Separation-Mediated TARP/MAGUK Complex Condensation and AMPA Receptor Synaptic Transmission. Neuron, 2019, 104, 529-543.e6.	8.1	100
67	Functional dependence of neuroligin on a new non-PDZ intracellular domain. Nature Neuroscience, 2011, 14, 718-726.	14.8	95
68	Expression mechanisms underlying long-term potentiation: a postsynaptic view, 10 years on. Philosophical Transactions of the Royal Society B: Biological Sciences, 2014, 369, 20130136.	4.0	95
69	A Subtype-Specific Function for the Extracellular Domain of Neuroligin 1 in Hippocampal LTP. Neuron, 2012, 76, 309-316.	8.1	92
70	Kalirin and Trio proteins serve critical roles in excitatory synaptic transmission and LTP. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 2264-2269.	7.1	86
71	CaMKII phosphorylation of neuroligin-1 regulates excitatory synapses. Nature Neuroscience, 2014, 17, 56-64.	14.8	83
72	PSD-95 stabilizes NMDA receptors by inducing the degradation of STEP ₆₁. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E4736-44.	7.1	83

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73	The LGI1â€"ADAM22 protein complex directs synapse maturation through regulation of PSD-95 function. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E4129-37.	7.1	80
74	The Cell-Autonomous Role of Excitatory Synaptic Transmission in the Regulation of Neuronal Structure and Function. Neuron, 2013, 78, 433-439.	8.1	75
75	Synaptic Consolidation Normalizes AMPAR Quantal Size following MAGUK Loss. Neuron, 2015, 87, 534-548.	8.1	71
76	My close encounter with GABAB receptors. Biochemical Pharmacology, 2004, 68, 1667-1674.	4.4	66
77	Subunit-specific role for the amino-terminal domain of AMPA receptors in synaptic targeting. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 7136-7141.	7.1	66
78	TARP Redundancy Is Critical for Maintaining AMPA Receptor Function. Journal of Neuroscience, 2008, 28, 8740-8746.	3.6	64
79	Stargazin interacts functionally with the AMPA receptor glutamate-binding module. Neuropharmacology, 2007, 52, 87-91.	4.1	61
80	Somatostatin and parvalbumin inhibitory synapses onto hippocampal pyramidal neurons are regulated by distinct mechanisms. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 589-594.	7.1	59
81	Synaptic Refractory Period Provides a Measure of Probability of Release in the Hippocampus. Neuron, 1997, 19, 1309-1318.	8.1	57
82	Dimerization of postsynaptic neuroligin drives synaptic assembly via transsynaptic clustering of neurexin. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 19432-19437.	7.1	57
83	THE ENDORPHINS, NOVEL PEPTIDES OF BRAIN AND HYPOPHYSIAL ORIGIN, WITH OPIATE-LIKE ACTIVITY: BIOCHEMICAL AND BIOLOGIC STUDIES. Annals of the New York Academy of Sciences, 1977, 297, 131-157.	3.8	56
84	Autism-associated mutation inhibits protein kinase C-mediated neuroligin-4X enhancement of excitatory synapses. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 2551-2556.	7.1	56
85	Is Aspartate an Excitatory Neurotransmitter?. Journal of Neuroscience, 2015, 35, 10168-10171.	3.6	56
86	LTP requires postsynaptic PDZ-domain interactions with glutamate receptor/auxiliary protein complexes. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 3948-3953.	7.1	54
87	LGI1â€"ADAM22â€"MAGUK configures transsynaptic nanoalignment for synaptic transmission and epilepsy prevention. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	49
88	Postsynaptic Î´1 glutamate receptor assembles and maintains hippocampal synapses via Cbln2 and neurexin. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E5373-E5381.	7.1	46
89	Lack of AMPA Receptor Desensitization During Basal Synaptic Transmission in the Hippocampal Slice. Journal of Neurophysiology, 1999, 81, 3096-3099.	1.8	45
90	TARP modulation of synaptic AMPA receptor trafficking and gating depends on multiple intracellular domains. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 11348-11351.	7.1	44

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91	AMPA receptor trafficking and LTP: Carboxy-termini, amino-termini and TARPs. Neuropharmacology, 2021, 197, 108710.	4.1	41
92	Distinct roles for extracellular and intracellular domains in neuroligin function at inhibitory synapses. ELife, 2016, 5, .	6.0	41
93	The GABAA Receptor Î² Subunit Is Required for Inhibitory Transmission. Neuron, 2018, 98, 718-725.e3.	8.1	40
94	Synaptic memory requires CaMKII. ELife, 2021, 10, .	6.0	33
95	Never fear, LTP is hear. Nature, 1997, 390, 552-553.	27.8	32
96	Critical role for TARPs in early development despite broad functional redundancy. Neuropharmacology, 2009, 56, 22-29.	4.1	32
97	Genetic analysis of neuronal ionotropic glutamate receptor subunits. Journal of Physiology, 2011, 589, 4095-4101.	2.9	31
98	LTD expression is independent of glutamate receptor subtype. Frontiers in Synaptic Neuroscience, 2014, 6, 15.	2.5	28
99	Synaptic homeostasis requires the membrane-proximal carboxy tail of GluA2. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 13266-13271.	7.1	26
100	Neto auxiliary proteins control both the trafficking and biophysical properties of the kainate receptor GluK1. ELife, 2015, 4, .	6.0	26
101	Long-term potentiation is independent of the C-tail of the GluA1 AMPA receptor subunit. ELife, 2020, 9, .	6.0	25
102	Distance-Dependent Scaling of AMPARs Is Cell-Autonomous and GluA2 Dependent. Journal of Neuroscience, 2013, 33, 13312-13319.	3.6	24
103	Isoform-specific cleavage of neuroligin-3 reduces synapse strength. Molecular Psychiatry, 2019, 24, 145-160.	7.9	24
104	Amino-terminal domains of kainate receptors determine the differential dependence on Neto auxiliary subunits for trafficking. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 1159-1164.	7.1	22
105	Relative contribution of TARPs Î³-2 and Î³-7 to cerebellar excitatory synaptic transmission and motor behavior. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E371-9.	7.1	20
106	The STEP ₆₁ interactome reveals subunit-specific AMPA receptor binding and synaptic regulation. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 8028-8037.	7.1	17
107	Signal peptide represses GluK1 surface and synaptic trafficking through binding to amino-terminal domain. Nature Communications, 2018, 9, 4879.	12.8	15
108	Cajal's rational psychology. Nature, 1994, 368, 808-809.	27.8	13

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109	Mechanisms underlying the synaptic trafficking of the glutamate delta receptor GluD1. Molecular Psychiatry, 2019, 24, 1451-1460.	7.9	11
110	Membraneâ€associated guanylate kinase dynamics reveal regional and developmental specificity of synapse stability. Journal of Physiology, 2017, 595, 1699-1709.	2.9	10
111	Long-distance long-term depression. Nature, 1997, 388, 427-428.	27.8	9
112	MAGUKs are essential, but redundant, in long-term potentiation. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	8
113	Long-term depression with a flash. Nature Neuroscience, 1998, 1, 89-90.	14.8	7
114	Is bigger better?. Nature, 1998, 396, 414-415.	27.8	6
115	A slow excitatory postsynaptic current mediated by a novel metabotropic glutamate receptor in CA1 pyramidal neurons. Neuropharmacology, 2017, 115, 4-9.	4.1	5
116	AMPA receptors jump the synaptic cleft. Nature Neuroscience, 2000, 3, 527-529.	14.8	4
117	Renal cysts and fibrosis caused by epithelial cell polarity defects in mice lacking mammalian Linâ€7c (MALSâ€3). FASEB Journal, 2007, 21, A544.	0.5	0
118	Dissecting the Role of Synaptic Proteins with CRISPR. Research and Perspectives in Neurosciences, 2017, , 51-62.	0.4	0