Mark L Mayer

List of Publications by Year
in descending order

131 papers	17,077 citations	31949 53 h-index	29127 104 g-index
135 all docs	135 docs citations	135 times ranked	8136 citing authors

#	Article	IF	Citations
1	Voltage-dependent block by Mg2+ of NMDA responses in spinal cord neurones. Nature, 1984, 309, 261-263.	13.7	2,640
2	NMDA-receptor activation increases cytoplasmic calcium concentration in cultured spinal cord neurones. Nature, 1986, 321, 519-522.	13.7	1,777
3	The physiology of excitatory amino acids in the vertebrate central nervous system. Progress in Neurobiology, 1987, 28, 197-276.	2.8	1,718
4	Micromolar concentrations of Zn2+ antagonize NMDA and GABA responses of hippocampal neurons. Nature, 1987, 328, 640-643.	13.7	813
5	Glutamate receptor ion channels. Current Opinion in Neurobiology, 2005, 15, 282-288.	2.0	747
6	Mechanism of glutamate receptor desensitization. Nature, 2002, 417, 245-253.	13.7	650
7	Inward rectification of both AMPA and kainate subtype glutamate receptors generated by polyamine-mediated ion channel block. Neuron, 1995, 15, 453-462.	3.8	526
8	Regulation of NMDA receptor desensitization in mouse hippocampal neurons by glycine. Nature, 1989, 338, 425-427.	13.7	384
9	Structure and Function of Glutamate Receptor Ion Channels. Annual Review of Physiology, 2004, 66, 161-181.	5.6	379
10	Structural basis for partial agonist action at ionotropic glutamate receptors. Nature Neuroscience, 2003, 6, 803-810.	7.1	364
11	Excitatory amino acid receptors, second messengers and regulation of intracellular Ca2+ in mammalian neurons. Trends in Pharmacological Sciences, 1990, 11, 254-260.	4.0	329
12	AMPA Receptor Flip/Flop Mutants Affecting Deactivation, Desensitization, and Modulation by Cyclothiazide, Aniracetam, and Thiocyanate. Journal of Neuroscience, 1996, 16, 6634-6647.	1.7	324
13	Glial cells of the oligodendrocyte lineage express both kainate- and AMPA-preferring subtypes of glutamate receptor. Neuron, 1994, 12, 357-371.	3.8	311
14	Functional characterization of a potassium-selective prokaryotic glutamate receptor. Nature, 1999, 402, 817-821.	13.7	304
15	Modulation of excitatory synaptic transmission by drugs that reduce desensitization at AMPA/kainate receptors. Neuron, 1991, 7, 971-984.	3.8	291
16	Glutamate receptors at atomic resolution. Nature, 2006, 440, 456-462.	13.7	267
17	Crystal Structures of the GluR5 and GluR6 Ligand Binding Cores: Molecular Mechanisms Underlying Kainate Receptor Selectivity. Neuron, 2005, 45, 539-552.	3.8	259
18	Kinetic analysis of interactions between kainate and AMPA: Evidence for activation of a single receptor in mouse hippocampal neurons. Neuron, 1991, 6, 785-798.	3.8	235

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19	Structural mechanism of glutamate receptor activation and desensitization. Nature, 2014, 514, 328-334.	13.7	207
20	Structural determinants of allosteric regulation in alternatively spliced AMPA receptors. Neuron, 1995, 14, 833-843.	3.8	154
21	Mechanisms for ligand binding to GluR0 ion channels: crystal structures of the glutamate and serine complexes and a closed apo state. Journal of Molecular Biology, 2001, 311, 815-836.	2.0	141
22	Tuning activation of the AMPA-sensitive GluR2 ion channel by genetic adjustment of agonist-induced conformational changes. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 5736-5741.	3.3	139
23	Cellular mechanisms underlying excitotoxicity. Trends in Neurosciences, 1987, 10, 59-61.	4.2	128
24	Regulation of AMPA Receptor Gating by Ligand Binding Core Dimers. Neuron, 2004, 41, 379-388.	3.8	128
25	Functional Insights from Glutamate Receptor Ion Channel Structures. Annual Review of Physiology, 2013, 75, 313-337.	5.6	124
26	Heteromeric Kainate Receptors Formed by the Coassembly of GluR5, GluR6, and GluR7. Journal of Neuroscience, 1999, 19, 8281-8291.	1.7	120
27	Crystal Structures of the Kainate Receptor GluR5 Ligand Binding Core Dimer with Novel GluR5-Selective Antagonists. Journal of Neuroscience, 2006, 26, 2852-2861.	1.7	111
28	Structure and Mechanism of Kainate Receptor Modulation by Anions. Neuron, 2007, 53, 829-841.	3.8	111
29	Mechanism of Activation and Selectivity in a Ligand-Gated Ion Channel:Â Structural and Functional Studies of GluR2 and Quisqualateâ€,â€¡. Biochemistry, 2002, 41, 15635-15643.	1.2	109
30	Open channel block of NMDA receptor responses evoked by tricyclic antidepressants. Neuron, 1989, 2, 1221-1227.	3.8	106
31	Conformational restriction blocks glutamate receptor desensitization. Nature Structural and Molecular Biology, 2006, 13, 1120-1127.	3.6	106
32	Activity-Dependent Modulation of Glutamate Receptors by Polyamines. Journal of Neuroscience, 1998, 18, 8175-8185.	1.7	105
33	Structure and Assembly Mechanism for Heteromeric Kainate Receptors. Neuron, 2011, 71, 319-331.	3.8	102
34	A Novel Allosteric Potentiator of AMPA Receptors: 4-[2-(Phenylsulfonylamino)ethylthio]-2,6-Difluoro-Phenoxyacetamide. Journal of Neuroscience, 1997, 17, 5760-5771.	1.7	100
35	Excitatory amino acid receptors in glial progenitor cells: Molecular and functional properties. Glia, 1994, 11, 94-101.	2.5	98
36	The N-terminal domain of GluR6-subtype glutamate receptor ion channels. Nature Structural and Molecular Biology, 2009, 16, 631-638.	3.6	97

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37	Structural Similarities between Glutamate Receptor Channels and K+ Channels Examined by Scanning Mutagenesis. Journal of General Physiology, 2001, 117, 345-360.	0.9	96
38	Permeation and block of rat glur6 glutamate receptor channels by internal and external polyamines. Journal of Physiology, 1997, 502, 575-589.	1.3	94
39	Molecular mechanism of ligand recognition by NR3 subtype glutamate receptors. EMBO Journal, 2008, 27, 2158-2170.	3.5	93
40	Characterization of a Soluble Ligand Binding Domain of the NMDA Receptor Regulatory Subunit NR3A. Journal of Neuroscience, 2006, 26, 4559-4566.	1.7	92
41	Self-assembled monolayers improve protein distribution on holey carbon cryo-EM supports. Scientific Reports, 2014, 4, 7084.	1.6	88
42	Conformational Analysis of NMDA Receptor GluN1, GluN2, and GluN3 Ligand-Binding Domains Reveals Subtype-Specific Characteristics. Structure, 2013, 21, 1788-1799.	1.6	86
43	Molecular Basis of Kainate Receptor Modulation by Sodium. Neuron, 2008, 58, 720-735.	3.8	85
44	Interdomain Interactions in AMPA and Kainate Receptors Regulate Affinity for Glutamate. Journal of Neuroscience, 2006, 26, 7650-7658.	1.7	79
45	Structural basis of kainate subtype glutamate receptor desensitization. Nature, 2016, 537, 567-571.	13.7	78
46	Synthesis and Pharmacological Characterization of N3-Substituted Willardiine Derivatives:Â Role of the Substituent at the 5-Position of the Uracil Ring in the Development of Highly Potent and Selective GLUK5Kainate Receptor Antagonists. Journal of Medicinal Chemistry, 2007, 50, 1558-1570.	2.9	70
47	Emerging Models of Glutamate Receptor Ion Channel Structure and Function. Structure, 2011, 19, 1370-1380.	1.6	70
48	Structureâ€activity analysis of binding kinetics for NMDA receptor competitive antagonists: the influence of conformational restriction. British Journal of Pharmacology, 1991, 104, 207-221.	2.7	69
49	Structure and mechanism of glutamate receptor ion channel assembly, activation and modulation. Current Opinion in Neurobiology, 2011, 21, 283-290.	2.0	65
50	An analysis of philanthotoxin block for recombinant rat GluR6(Q) glutamate receptor channels. Journal of Physiology, 1998, 509, 635-650.	1.3	64
51	Structure and function of glutamate and nicotinic acetylcholine receptors. Current Opinion in Neurobiology, 1995, 5, 310-317.	2.0	60
52	Zinc Potentiates GluK3 Glutamate Receptor Function by Stabilizing the Ligand Binding Domain Dimer Interface. Neuron, 2012, 76, 565-578.	3.8	59
53	AMPA Receptor Ligand Binding Domain Mobility Revealed by Functional Cross Linking. Journal of Neuroscience, 2009, 29, 11912-11923.	1.7	57
54	Mg2+ dependence of membrane resistance increases evoked by NMDA in hippocampal neurones. Brain Research, 1984, 311, 392-396.	1.1	54

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55	Stability of ligand-binding domain dimer assembly controls kainate receptor desensitization. EMBO Journal, 2009, 28, 1518-1530.	3.5	54
56	Glutamate receptor desensitization is mediated by changes in quaternary structure of the ligand binding domain. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 5921-5926.	3.3	53
57	Energetics of glutamate receptor ligand binding domain dimer assembly are modulated by allosteric ions. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 12329-12334.	3.3	46
58	Analysis of high-affinity assembly for AMPA receptor amino-terminal domains. Journal of General Physiology, 2012, 139, 371-388.	0.9	45
59	Structural biology of glutamate receptor ion channel complexes. Current Opinion in Structural Biology, 2016, 41, 119-127.	2.6	45
60	Growth Factor-Induced Transcription of GluR1 Increases Functional AMPA Receptor Density in Glial Progenitor Cells. Journal of Neuroscience, 1997, 17, 227-240.	1.7	44
61	ACET is a highly potent and specific kainate receptor antagonist: Characterisation and effects on hippocampal mossy fibre function. Neuropharmacology, 2009, 56, 121-130.	2.0	44
62	Structural biology of glutamate receptor ion channels: towards an understanding of mechanism. Current Opinion in Structural Biology, 2019, 57, 185-195.	2.6	44
63	Glycine activated ion channel subunits encoded by ctenophore glutamate receptor genes. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E6048-57.	3.3	43
64	Amino acid substitutions in the pore of rat glutamate receptors at sites influencing block by polyamines. Journal of Physiology, 1999, 520, 337-357.	1.3	42
65	Functional reconstitution of <i>Drosophila melanogaster</i> NMJ glutamate receptors. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 6182-6187.	3.3	42
66	Crystal Structures of the Glutamate Receptor Ion Channel GluK3 and GluK5 Amino-Terminal Domains. Journal of Molecular Biology, 2010, 404, 680-696.	2.0	41
67	Analysis of Protein Interactions with Picomolar Binding Affinity by Fluorescence-Detected Sedimentation Velocity. Analytical Chemistry, 2014, 86, 3181-3187.	3.2	41
68	A physiologist's view of the N-methyl-D-Aspartate receptor: An allosteric ion channel with multiple regulatory sites. Drug Development Research, 1989, 17, 263-280.	1.4	38
69	Novel Functional Properties of Drosophila CNS Glutamate Receptors. Neuron, 2016, 92, 1036-1048.	3.8	38
70	Domain organization and function in GluK2 subtype kainate receptors. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 8463-8468.	3.3	37
71	Glutamate currents in mammalian spinal neurons: resolution of a paradox. Brain Research, 1984, 301, 375-379.	1.1	35
72	Spontaneous electrical activity induced by herpes virus infection in rat sensory neuron cultures. Brain Research, 1985, 341, 360-364.	1.1	33

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73	Pharmacologic Properties of NMDA Receptors. Annals of the New York Academy of Sciences, 1992, 648, 194-204.	1.8	31
74	Analysis of High Affinity Self-Association by Fluorescence Optical Sedimentation Velocity Analytical Ultracentrifugation of Labeled Proteins: Opportunities and Limitations. PLoS ONE, 2013, 8, e83439.	1.1	31
75	Molecular lock regulates binding of glycine to a primitive NMDA receptor. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E6786-E6795.	3.3	30
76	Lithium ions increase action potential duration of mammalian neurons. Brain Research, 1984, 293, 173-177.	1.1	28
77	On the mechanism of action of GABA in pelvic vesical ganglia: Biphasic responses evoked by two opposing actions on membrane conductance. Brain Research, 1983, 260, 233-248.	1.1	27
78	Accounting for Solvent Signal Offsets in the Analysis of Interferometric Sedimentation Velocity Data. Macromolecular Bioscience, 2010, 10, 736-745.	2.1	26
79	Preferential assembly of heteromeric kainate and AMPA receptor amino terminal domains. ELife, 2017, 6, .	2.8	25
80	The role of hydrophobic interactions in binding of polyamines to non NMDA receptor ion channels. Neuropharmacology, 1998, 37, 1381-1391.	2.0	24
81	Binding site and ligand flexibility revealed by high resolution crystal structures of GluK1 competitive antagonists. Neuropharmacology, 2011, 60, 126-134.	2.0	24
82	The Challenge of Interpreting Glutamate-Receptor Ion-Channel Structures. Biophysical Journal, 2017, 113, 2143-2151.	0.2	23
83	Two channels reduced to one. Nature, 1987, 325, 480-481.	13.7	21
84	The excitatory action of substance P and stimulation of the stria terminalis bed nucleus on preoptic neurones. Brain Research, 1979, 166, 206-210.	1.1	19
85	Selectivity and Cooperativity of Modulatory Ions in a Neurotransmitter Receptor. Biophysical Journal, 2009, 96, 1751-1760.	0.2	18
86	Finding homes at synapses. Nature, 1997, 389, 542-543.	13.7	15
87	Anions Mediate Ligand Binding in Adineta vaga Glutamate Receptor Ion Channels. Structure, 2013, 21, 414-425.	1.6	14
88	NMDA receptors cloned at last. Nature, 1991, 354, 16-17.	13.7	11
89	Monochromatic multicomponent fluorescence sedimentation velocity for the study of high-affinity protein interactions. ELife, 2016, 5, .	2.8	11
90	Glutamate receptors from diverse animal species exhibit unexpected structural and functional diversity. Journal of Physiology, 2021, 599, 2605-2613.	1.3	10

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91	The structure and function of glutamate receptors: Mg2+ block to X-ray diffraction. Neuropharmacology, 2017, 112, 4-10.	2.0	8
92	Structural biology of kainate receptors. Neuropharmacology, 2021, 190, 108511.	2.0	7
93	Engineering a high-affinity allosteric binding site for divalent cations in kainate receptors. Neuropharmacology, 2009, 56, 114-120.	2.0	6
94	Periaqueductal grey neuronal activity: Correlation with EEG arousal evoked by noxious stimuli in the rat. Neuroscience Letters, 1982, 28, 297-301.	1.0	5
95	Ion-binding sites in NMDA receptors: classical approaches provide the numbers. Nature Neuroscience, 1998, 1, 433-434.	7.1	5
96	Glutamate Receptors in Cultures of Mouse Hippocampus Studied with Fast Applications of Agonists, Modulators and Drugs. Advances in Experimental Medicine and Biology, 1990, 268, 3-11.	0.8	5
97	GRIK4 and the Kainate Receptor. American Journal of Psychiatry, 2007, 164, 1148-1148.	4.0	4
98	Glutamate receptor ion channels: where do all the calories go?. Nature Structural and Molecular Biology, 2011, 18, 253-254.	3.6	3
99	Structure and Function of Glutamate Receptors. Annals of the New York Academy of Sciences, 2004, 1038, 125-130.	1.8	2
100	Ionotropic glutamate receptors: Still exciting after all these years. Neuropharmacology, 2017, 112, 1-3.	2.0	2
101	Family matters. ELife, 2018, 7, .	2.8	2
102	Glutamate Receptor Desensitization Mediated by Changes in Quaternary Structure of the Ligand Binding Domain. Biophysical Journal, 2013, 104, 352a.	0.2	1
103	Divalent Cations as Modulators of NMDA-Receptor Channels on Mouse Central Neurons. , 1988, , 383-393.		1
104	Activation and Desensitization of Glutamate Receptors in Mammalian CNS. , 1989, , 183-195.		1
105	Some assembly required. Nature Structural and Molecular Biology, 2005, 12, 208-209.	3.6	0
106	Purification and crystallization of iGluR Amino Terminal Domains. Biophysical Journal, 2009, 96, 491a.	0.2	0
107	Structure And Stability Of Ligand Binding Core Dimer Assembly Controls Desensitization In A Kainate Receptor. Biophysical Journal, 2009, 96, 491a.	0.2	0
108	Macromol. Biosci. 7/2010. Macromolecular Bioscience, 2010, 10, .	2.1	0

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109	Energetics of Allosteric ion Binding to a Ligand-Gated ion Channel. Biophysical Journal, 2010, 98, 610a.	0.2	0
110	Crystal Structure of KA2-Subtype Ionotropic Glutamate Receptor Amino Terminal Domain. Biophysical Journal, 2010, 98, 524a.	0.2	0
111	Optimization of Constructs for Expression, Purification and Crystallization of Glutamate Receptor Ion Channels. Biophysical Journal, 2012, 102, 116a.	0.2	0
112	Analysis of Oligomer Assembly for the GluA2 Amino Terminal Domain. Biophysical Journal, 2012, 102, 335a-336a.	0.2	0
113	Novel Ligand Binding Mechanisms in AvGluR1. Biophysical Journal, 2013, 104, 273a.	0.2	0
114	Unique Conformational Distributions for NMDA Receptor Glycine and Glutamate Ligand-Binding Domains. Biophysical Journal, 2013, 104, 274a.	0.2	0
115	The GluK3 Ligand Binding Domain has a Zinc Binding Site at the Dimer Interface. Biophysical Journal, 2013, 104, 272a.	0.2	0
116	Analysis of High-Affinity Protein Interactions by Fluorescence Optical Analytical Ultracentrifugation. Biophysical Journal, 2014, 106, 236a.	0.2	0
117	Role of Amino-Terminal Domain in the Assembly Mechanism of Kainate-Subtype Glutamate Receptor Ion Channels. Biophysical Journal, 2014, 106, 151a.	0.2	0
118	Principal Component Analysis of Glutamate Receptor Ligand Binding Domains. Biophysical Journal, 2014, 106, 805a.	0.2	0
119	Calcium Flux Through AvGluR1: A Glutamate Receptor with a Potassium Channel Selectivity Sequence. Biophysical Journal, 2014, 106, 151a.	0.2	0
120	Investigating High Affinity Protein Self-Association by Fluorescence Optical Sedimentation Velocity Analytical Ultracentrifugation. Biophysical Journal, 2014, 106, 151a.	0.2	0
121	NMDA and AMPA Receptor Ligand-Binding Domains Exhibit Subtype-Specific Conformational Propensities. Biophysical Journal, 2014, 106, 29a.	0.2	0
122	Structural Mechanism of Glutamate Receptor Activation and Desensitization. Biophysical Journal, 2015, 108, 287a.	0.2	0
123	Conformational Changes Underlying Glutamate Receptor Gating. Biophysical Journal, 2015, 108, 335a.	0.2	0
124	Cryo-Electron Microscopy Reveals Structural Basis of Kainate Subtype Glutamate Receptor Desensitization. Biophysical Journal, 2017, 112, 419a.	0.2	0
125	Probing a Molecular Lock in a Primitive NMDA Receptor. Biophysical Journal, 2017, 112, 477a-478a.	0.2	0
126	Assembly of Kainate and AMPA Receptors. Biophysical Journal, 2018, 114, 126a.	0.2	0

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127	Partial agonists go molecular. Trends in Pharmacological Sciences, 2021, 42, 507-509.	4.0	0
128	Agonist Binding Domains of Glutamate Receptors: Structure and Function. , 2003, , 219-221.		0
129	Excitatory Amino Acids: Membrane Physiology. , 1985, , 125-139.		0
130	Conductance Mechanisms Activated by L-Glutamate. , 1988, , 15-33.		0
131	Structure and Mechanism of Action of AMPA and Kainate Receptors. , 2008, , 251-269.		0