

# Mark von Zastrow

## List of Publications by Year in descending order

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121  
papers

25,568  
citations

9756

73  
h-index

19690

117  
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164  
all docs

164  
docs citations

164  
times ranked

28238  
citing authors

#	ARTICLE	IF	CITATIONS
1	A SARS-CoV-2 protein interaction map reveals targets for drug repurposing. <i>Nature</i> , 2020, 583, 459-468.	13.7	3,542
2	Control of Synaptic Strength by Glial TNF $\alpha$ . <i>Science</i> , 2002, 295, 2282-2285.	6.0	1,211
3	Functional Selectivity and Classical Concepts of Quantitative Pharmacology. <i>Journal of Pharmacology and Experimental Therapeutics</i> , 2007, 320, 1-13.	1.3	997
4	Endocytosis and signalling: intertwining molecular networks. <i>Nature Reviews Molecular Cell Biology</i> , 2009, 10, 609-622.	16.1	995
5	Ultrafast neuronal imaging of dopamine dynamics with designed genetically encoded sensors. <i>Science</i> , 2018, 360, .	6.0	773
6	Signal transduction and endocytosis: close encounters of many kinds. <i>Nature Reviews Molecular Cell Biology</i> , 2002, 3, 600-614.	16.1	763
7	Conformational biosensors reveal GPCR signalling from endosomes. <i>Nature</i> , 2013, 495, 534-538.	13.7	713
8	Regulation of $\mu$ -Opioid Receptors: Desensitization, Phosphorylation, Internalization, and Tolerance. <i>Pharmacological Reviews</i> , 2013, 65, 223-254.	7.1	673
9	Regulation of AMPA receptor endocytosis by a signaling mechanism shared with LTD. <i>Nature Neuroscience</i> , 2000, 3, 1291-1300.	7.1	660
10	Role of AMPA Receptor Cycling in Synaptic Transmission and Plasticity. <i>Neuron</i> , 1999, 24, 649-658.	3.8	641
11	A kinase-regulated PDZ-domain interaction controls endocytic sorting of the $\beta_2$ -adrenergic receptor. <i>Nature</i> , 1999, 401, 286-290.	13.7	637
12	Regulation of GPCRs by Endocytic Membrane Trafficking and Its Potential Implications. <i>Annual Review of Pharmacology and Toxicology</i> , 2008, 48, 537-568.	4.2	526
13	Morphine Activates Opioid Receptors without Causing Their Rapid Internalization. <i>Journal of Biological Chemistry</i> , 1996, 271, 19021-19024.	1.6	459
14	Microtubule Plus-End-Tracking Proteins Target Gap Junctions Directly from the Cell Interior to Adherens Junctions. <i>Cell</i> , 2007, 128, 547-560.	13.5	433
15	Rapid redistribution of glutamate receptors contributes to long-term depression in hippocampal cultures. <i>Nature Neuroscience</i> , 1999, 2, 454-460.	7.1	411
16	Functional Dissociation of $\mu$ Opioid Receptor Signaling and Endocytosis. <i>Neuron</i> , 1999, 23, 737-746.	3.8	409
17	SNX27 mediates retromer tubule entry and endosome-to-plasma membrane trafficking of signalling receptors. <i>Nature Cell Biology</i> , 2011, 13, 715-721.	4.6	408
18	Role of ampa receptor endocytosis in synaptic plasticity. <i>Nature Reviews Neuroscience</i> , 2001, 2, 315-324.	4.9	396

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19	An Approach to Spatiotemporally Resolve Protein Interaction Networks in Living Cells. <i>Cell</i> , 2017, 169, 350-360.e12.	13.5	322
20	Regulation of Opioid Receptor Trafficking and Morphine Tolerance by Receptor Oligomerization. <i>Cell</i> , 2002, 108, 271-282.	13.5	308
21	Modulation of Postendocytic Sorting of G Protein-Coupled Receptors. <i>Science</i> , 2002, 297, 615-620.	6.0	298
22	$\mu$ -Opioid Receptor Internalization: Opiate Drugs Have Differential Effects on a Conserved Endocytic Mechanism <i>In Vitro</i> and in the Mammalian Brain. <i>Molecular Pharmacology</i> , 1998, 53, 377-384.	1.0	294
23	Sequence-Dependent Sorting of Recycling Proteins by Actin-Stabilized Endosomal Microdomains. <i>Cell</i> , 2010, 143, 761-773.	13.5	289
24	Signaling on the endocytic pathway. <i>Current Opinion in Cell Biology</i> , 2007, 19, 436-445.	2.6	247
25	Spatial encoding of cyclic AMP signaling specificity by GPCR endocytosis. <i>Nature Chemical Biology</i> , 2014, 10, 1061-1065.	3.9	238
26	A Genetically Encoded Biosensor Reveals Location Bias of Opioid Drug Action. <i>Neuron</i> , 2018, 98, 963-976.e5.	3.8	232
27	SNX27 mediates PDZ-directed sorting from endosomes to the plasma membrane. <i>Journal of Cell Biology</i> , 2010, 190, 565-574.	2.3	222
28	Cargo Regulates Clathrin-Coated Pit Dynamics. <i>Cell</i> , 2006, 127, 113-124.	13.5	220
29	Distinct Dynamin-dependent and -independent Mechanisms Target Structurally Homologous Dopamine Receptors to Different Endocytic Membranes. <i>Journal of Cell Biology</i> , 1999, 144, 31-43.	2.3	214
30	Rapid, Activation-Induced Redistribution of Ionotropic Glutamate Receptors in Cultured Hippocampal Neurons. <i>Journal of Neuroscience</i> , 1999, 19, 1263-1272.	1.7	195
31	Type-specific Sorting of G Protein-coupled Receptors after Endocytosis. <i>Journal of Biological Chemistry</i> , 2000, 275, 11130-11140.	1.6	195
32	Subcellular Organization of GPCR Signaling. <i>Trends in Pharmacological Sciences</i> , 2018, 39, 200-208.	4.0	187
33	Aripiprazole has Functionally Selective Actions at Dopamine D2 Receptor-Mediated Signaling Pathways. <i>Neuropsychopharmacology</i> , 2007, 32, 67-77.	2.8	186
34	Real-Time Imaging of Discrete Exocytic Events Mediating Surface Delivery of AMPA Receptors. <i>Journal of Neuroscience</i> , 2007, 27, 11112-11121.	1.7	184
35	Functional selectivity of GPCR-directed drug action through location bias. <i>Nature Chemical Biology</i> , 2017, 13, 799-806.	3.9	181
36	Subcellular localization of MC4R with ADCY3 at neuronal primary cilia underlies a common pathway for genetic predisposition to obesity. <i>Nature Genetics</i> , 2018, 50, 180-185.	9.4	175

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37	Catalytic activation of $\beta^2$ -arrestin by GPCRs. <i>Nature</i> , 2018, 557, 381-386.	13.7	175
38	A Novel Endocytic Recycling Signal That Distinguishes the Membrane Trafficking of Naturally Occurring Opioid Receptors. <i>Journal of Biological Chemistry</i> , 2003, 278, 45978-45986.	1.6	171
39	GPCR signaling along the endocytic pathway. <i>Current Opinion in Cell Biology</i> , 2014, 27, 109-116.	2.6	170
40	Endocytosis Promotes Rapid Dopaminergic Signaling. <i>Neuron</i> , 2011, 71, 278-290.	3.8	167
41	Genetic evidence that $\beta^2$ -arrestins are dispensable for the initiation of $\beta^2$ -adrenergic receptor signaling to ERK. <i>Science Signaling</i> , 2017, 10, .	1.6	155
42	$\beta^4$ -Opioid Receptors: Ligand-Dependent Activation of Potassium Conductance, Desensitization, and Internalization. <i>Journal of Neuroscience</i> , 2002, 22, 5769-5776.	1.7	154
43	Mechanisms regulating membrane trafficking of G protein-coupled receptors in the endocytic pathway. <i>Life Sciences</i> , 2003, 74, 217-224.	2.0	151
44	Downregulation of G protein-coupled receptors. <i>Current Opinion in Neurobiology</i> , 2000, 10, 365-369.	2.0	142
45	Role of PDZ Proteins in Regulating Trafficking, Signaling, and Function of GPCRs: Means, Motif, and Opportunity. <i>Advances in Pharmacology</i> , 2011, 62, 279-314.	1.2	139
46	Morphine Promotes Rapid, Arrestin-Dependent Endocytosis of $\beta^1$ -Opioid Receptors in Striatal Neurons. <i>Journal of Neuroscience</i> , 2005, 25, 7847-7857.	1.7	134
47	Effects of endocytosis on receptor-mediated signaling. <i>Current Opinion in Cell Biology</i> , 2015, 35, 137-143.	2.6	134
48	An expanded palette of dopamine sensors for multiplex imaging in vivo. <i>Nature Methods</i> , 2020, 17, 1147-1155.	9.0	134
49	$\beta^7$ and $\beta^9$ Opioid Receptors Are Differentially Regulated by Dynamin-dependent Endocytosis When Activated by the Same Alkaloid Agonist. <i>Journal of Biological Chemistry</i> , 1997, 272, 27124-27130.	1.6	130
50	Morphine Acutely Regulates Opioid Receptor Trafficking Selectively in Dendrites of Nucleus Accumbens Neurons. <i>Journal of Neuroscience</i> , 2003, 23, 4324-4332.	1.7	130
51	Endocytosis, Signaling, and Beyond. <i>Cold Spring Harbor Perspectives in Biology</i> , 2014, 6, a016865-a016865.	2.3	130
52	G Protein-coupled Receptor (GPCR) Signaling via Heterotrimeric G Proteins from Endosomes. <i>Journal of Biological Chemistry</i> , 2015, 290, 6689-6696.	1.6	128
53	Regulated Endocytosis of G-protein-coupled Receptors by a Biochemically and Functionally Distinct Subpopulation of Clathrin-coated Pits. <i>Journal of Biological Chemistry</i> , 1998, 273, 24592-24602.	1.6	126
54	Retromer Mediates a Discrete Route of Local Membrane Delivery to Dendrites. <i>Neuron</i> , 2014, 82, 55-62.	3.8	121

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55	A Transplantable Sorting Signal That Is Sufficient to Mediate Rapid Recycling of G Protein-coupled Receptors. <i>Journal of Biological Chemistry</i> , 2001, 276, 44712-44720.	1.6	117
56	Ubiquitination-independent Trafficking of G Protein-coupled Receptors to Lysosomes. <i>Journal of Biological Chemistry</i> , 2002, 277, 50219-50222.	1.6	116
57	Regulated endocytosis of opioid receptors: cellular mechanisms and proposed roles in physiological adaptation to opiate drugs. <i>Current Opinion in Neurobiology</i> , 2003, 13, 348-353.	2.0	115
58	Essential role of Hrs in a recycling mechanism mediating functional resensitization of cell signaling. <i>EMBO Journal</i> , 2005, 24, 2265-2283.	3.5	113
59	Differentiation of Opioid Drug Effects by Hierarchical Multi-Site Phosphorylation. <i>Molecular Pharmacology</i> , 2013, 83, 633-639.	1.0	113
60	Structure of an Arrestin2-Clathrin Complex Reveals a Novel Clathrin Binding Domain That Modulates Receptor Trafficking. <i>Journal of Biological Chemistry</i> , 2009, 284, 29860-29872.	1.6	108
61	The Psychiatric Cell Map Initiative: A Convergent Systems Biological Approach to Illuminating Key Molecular Pathways in Neuropsychiatric Disorders. <i>Cell</i> , 2018, 174, 505-520.	13.5	108
62	Role of Mammalian Vacuolar Protein-sorting Proteins in Endocytic Trafficking of a Non-ubiquitinated G Protein-coupled Receptor to Lysosomes. <i>Journal of Biological Chemistry</i> , 2004, 279, 22522-22531.	1.6	107
63	Dissociation of Functional Roles of Dynamin in Receptor-mediated Endocytosis and Mitogenic Signal Transduction. <i>Journal of Biological Chemistry</i> , 1999, 274, 24575-24578.	1.6	106
64	Molecular Pharmacology of $\mu$ -Opioid Receptors. <i>Pharmacological Reviews</i> , 2016, 68, 631-700.	7.1	103
65	Regulation of Endocytic Clathrin Dynamics by Cargo Ubiquitination. <i>Developmental Cell</i> , 2012, 23, 519-532.	3.1	99
66	Quantitative Encoding of the Effect of a Partial Agonist on Individual Opioid Receptors by Multisite Phosphorylation and Threshold Detection. <i>Science Signaling</i> , 2011, 4, ra52.	1.6	98
67	Differential Activation and Trafficking of $\delta$ -Opioid Receptors in Brain Slices. <i>Molecular Pharmacology</i> , 2008, 74, 972-979.	1.0	97
68	SH3 Binding Domains in the Dopamine D4 Receptor. <i>Biochemistry</i> , 1998, 37, 15726-15736.	1.2	95
69	Cargo-Mediated Regulation of a Rapid Rab4-Dependent Recycling Pathway. <i>Molecular Biology of the Cell</i> , 2009, 20, 2774-2784.	0.9	92
70	DISC1 Regulates Primary Cilia That Display Specific Dopamine Receptors. <i>PLoS ONE</i> , 2010, 5, e10902.	1.1	92
71	Mass Spectrometric Analysis of Agonist Effects on Posttranslational Modifications of the $\beta$ -2 Adrenoceptor in Mammalian Cells. <i>Biochemistry</i> , 2005, 44, 6133-6143.	1.2	90
72	Recovery from $\delta$ -Opioid Receptor Desensitization after Chronic Treatment with Morphine and Methadone. <i>Journal of Neuroscience</i> , 2011, 31, 4434-4443.	1.7	84

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73	Role of Ubiquitination in Endocytic Trafficking of G-Protein-Coupled Receptors. <i>Traffic</i> , 2011, 12, 137-148.	1.3	84
74	When trafficking and signaling mix: How subcellular location shapes G protein-coupled receptor activation of heterotrimeric G proteins. <i>Traffic</i> , 2019, 20, 130-136.	1.3	84
75	Distinct modes of regulated receptor insertion to the somatodendritic plasma membrane. <i>Nature Neuroscience</i> , 2006, 9, 622-627.	7.1	76
76	Phosphorylation Is Not Required for Dynamin-dependent Endocytosis of a Truncated Mutant Opioid Receptor. <i>Journal of Biological Chemistry</i> , 1998, 273, 24987-24991.	1.6	74
77	Dopamine receptors reveal an essential role of IFT-B, KIF17, and Rab23 in delivering specific receptors to primary cilia. <i>ELife</i> , 2015, 4, .	2.8	73
78	Ubiquitination Regulates Proteolytic Processing of G Protein-coupled Receptors after Their Sorting to Lysosomes. <i>Journal of Biological Chemistry</i> , 2009, 284, 19361-19370.	1.6	71
79	A Novel Interaction between Adrenergic Receptors and the $\hat{\text{I}}\pm$ -Subunit of Eukaryotic Initiation Factor 2B. <i>Journal of Biological Chemistry</i> , 1997, 272, 19099-19102.	1.6	70
80	Identification of a Novel Endocytic Recycling Signal in the D1 Dopamine Receptor. <i>Journal of Biological Chemistry</i> , 2004, 279, 37461-37469.	1.6	67
81	The Role of Ubiquitination in Lysosomal Trafficking of $\hat{\text{I}}\pm$ -Opioid Receptors. <i>Traffic</i> , 2011, 12, 170-184.	1.3	67
82	A Simple Cell-Based Assay Reveals That Diverse Neuropsychiatric Risk Genes Converge on Primary Cilia. <i>PLoS ONE</i> , 2012, 7, e46647.	1.1	65
83	A Phosphorylation-regulated Brake Mechanism Controls the Initial Endocytosis of Opioid Receptors but Is Not Required for Post-endocytic Sorting to Lysosomes. <i>Journal of Biological Chemistry</i> , 2001, 276, 34331-34338.	1.6	64
84	Time-gated detection of protein-protein interactions with transcriptional readout. <i>ELife</i> , 2017, 6, .	2.8	64
85	Type I PDZ Ligands Are Sufficient to Promote Rapid Recycling of G Protein-coupled Receptors Independent of Binding to N-Ethylmaleimide-sensitive Factor*. <i>Journal of Biological Chemistry</i> , 2005, 280, 3305-3313.	1.6	62
86	The $\hat{\text{I}}\pm$ -Arrestin ARRDC3 Regulates the Endosomal Residence Time and Intracellular Signaling of the $\hat{\text{I}}\pm$ -Adrenergic Receptor. <i>Journal of Biological Chemistry</i> , 2016, 291, 14510-14525.	1.6	62
87	Phosphorylated EGFR Dimers Are Not Sufficient to Activate Ras. <i>Cell Reports</i> , 2018, 22, 2593-2600.	2.9	62
88	GPR88 Reveals a Discrete Function of Primary Cilia as Selective Insulators of GPCR Cross-Talk. <i>PLoS ONE</i> , 2013, 8, e70857.	1.1	61
89	Neurokinin 1 Receptors Regulate Morphine-Induced Endocytosis and Desensitization of $\hat{\text{I}}\frac{1}{4}$ -Opioid Receptors in CNS Neurons. <i>Journal of Neuroscience</i> , 2009, 29, 222-233.	1.7	60
90	Functional Characterization of Vasopressin Type 2 Receptor Substitutions (R137H/C/L) Leading to Nephrogenic Diabetes Insipidus and Nephrogenic Syndrome of Inappropriate Antidiuresis: Implications for Treatments. <i>Molecular Pharmacology</i> , 2010, 77, 836-845.	1.0	59

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91	Alternative Splicing Determines the Post-endocytic Sorting Fate of G-protein-coupled Receptors. <i>Journal of Biological Chemistry</i> , 2008, 283, 35614-35621.	1.6	56
92	Dysbindin Promotes the Post-Endocytic Sorting of G Protein-Coupled Receptors to Lysosomes. <i>PLoS ONE</i> , 2010, 5, e9325.	1.1	53
93	Mechanisms for Regulating and Organizing Receptor Signaling by Endocytosis. <i>Annual Review of Biochemistry</i> , 2021, 90, 709-737.	5.0	51
94	A cell biologist's perspective on physiological adaptation to opiate drugs. <i>Neuropharmacology</i> , 2004, 47, 286-292.	2.0	47
95	Modulating Neuromodulation by Receptor Membrane Traffic in the Endocytic Pathway. <i>Neuron</i> , 2012, 76, 22-32.	3.8	45
96	Retromer Endosome Exit Domains Serve Multiple Trafficking Destinations and Regulate Local G Protein Activation by GPCRs. <i>Current Biology</i> , 2016, 26, 3129-3142.	1.8	44
97	A Discrete Presynaptic Vesicle Cycle for Neuromodulator Receptors. <i>Neuron</i> , 2020, 105, 663-677.e8.	3.8	42
98	Agonist-selective recruitment of engineered protein probes and of GRK2 by opioid receptors in living cells. <i>ELife</i> , 2020, 9, .	2.8	42
99	A Chemical Screen Identifies Class A G-Protein Coupled Receptors As Regulators of Cilia. <i>ACS Chemical Biology</i> , 2012, 7, 911-919.	1.6	38
100	Endosomal cAMP production broadly impacts the cellular phosphoproteome. <i>Journal of Biological Chemistry</i> , 2021, 297, 100907.	1.6	36
101	G protein-regulated endocytic trafficking of adenylyl cyclase type 9. <i>ELife</i> , 2020, 9, .	2.8	35
102	Rapid Delivery of Internalized Signaling Receptors to the Somatodendritic Surface by Sequence-Specific Local Insertion. <i>Journal of Neuroscience</i> , 2010, 30, 11703-11714.	1.7	34
103	Heterologous Inhibition of G Protein-coupled Receptor Endocytosis Mediated by Receptor-specific Trafficking of $\beta$ -Arrestins. <i>Journal of Biological Chemistry</i> , 2001, 276, 17442-17447.	1.6	33
104	GIV/Girdin activates $G_{i1}$ and inhibits $G_{i2}$ s via the same motif. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, E5721-30.	3.3	33
105	Imaging neuromodulators with high spatiotemporal resolution using genetically encoded indicators. <i>Nature Protocols</i> , 2019, 14, 3471-3505.	5.5	33
106	Spatial decoding of endosomal cAMP signals by a metastable cytoplasmic PKA network. <i>Nature Chemical Biology</i> , 2021, 17, 558-566.	3.9	31
107	Regulation of opioid receptors by endocytic membrane traffic: Mechanisms and translational implications. <i>Drug and Alcohol Dependence</i> , 2010, 108, 166-171.	1.6	30
108	G Protein-Coupled Receptor Endocytosis Confers Uniformity in Responses to Chemically Distinct Ligands. <i>Molecular Pharmacology</i> , 2017, 91, 145-156.	1.0	30

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109	Chemical Genetic Engineering of G Protein-coupled Receptor Kinase 2. <i>Journal of Biological Chemistry</i> , 2005, 280, 35051-35061.	1.6	26
110	A high-throughput CRISPR interference screen for dissecting functional regulators of GPCR/cAMP signaling. <i>PLoS Genetics</i> , 2020, 16, e1009103.	1.5	15
111	Opioid Receptor Regulation. <i>NeuroMolecular Medicine</i> , 2004, 5, 051-058.	1.8	14
112	Opioid Pharmacology under the Microscope. <i>Molecular Pharmacology</i> , 2020, 98, 425-432.	1.0	14
113	Endosomal Phosphatidylinositol 3-Kinase Is Essential for Canonical GPCR Signaling. <i>Molecular Pharmacology</i> , 2017, 91, 65-73.	1.0	9
114	Investigating Signaling Consequences of GPCR Trafficking in the Endocytic Pathway. <i>Methods in Enzymology</i> , 2014, 535, 403-418.	0.4	7
115	An Immunocytochemical Assay for Activity-Dependent Redistribution of Glutamate Receptors from the Postsynaptic Plasma Membrane. <i>Annals of the New York Academy of Sciences</i> , 1999, 868, 550-553.	1.8	6
116	Proteomic Approaches to Investigate Regulated Trafficking and Signaling of G Protein-Coupled Receptors. <i>Molecular Pharmacology</i> , 2021, 99, 392-398.	1.0	3
117	Editorial overview: Cell regulation: The ins and outs of G protein-coupled receptors. <i>Current Opinion in Cell Biology</i> , 2014, 27, v-vi.	2.6	2
118	A Molecular Landscape of Mouse Hippocampal Neuromodulation. <i>Frontiers in Neural Circuits</i> , 2022, 16, .	1.4	2
119	A high-throughput CRISPR interference screen for dissecting functional regulators of GPCR/cAMP signaling. <i>FASEB Journal</i> , 2021, 35, .	0.2	1
120	A functional genomics approach identifies GPCR endocytosis-regulating kinases. <i>FASEB Journal</i> , 2010, 24, 585.7.	0.2	0
121	A Live-Cell Imaging Assay for Nuclear Entry of cAMP-Dependent Protein Kinase Catalytic Subunits Stimulated by Endogenous GPCR Activation. <i>Methods in Molecular Biology</i> , 2022, 2483, 339-349.	0.4	0