

Ernst Bamberg

List of Publications by Year in descending order

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48
papers

13,864
citations

101384

36
h-index

214527

47
g-index

48
all docs

48
docs citations

48
times ranked

10427
citing authors

#	ARTICLE	IF	CITATIONS
1	Millisecond-timescale, genetically targeted optical control of neural activity. <i>Nature Neuroscience</i> , 2005, 8, 1263-1268.	7.1	4,110
2	Channelrhodopsin-2, a directly light-gated cation-selective membrane channel. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2003, 100, 13940-13945.	3.3	2,348
3	Multimodal fast optical interrogation of neural circuitry. <i>Nature</i> , 2007, 446, 633-639.	13.7	1,602
4	Channelrhodopsin-1: A Light-Gated Proton Channel in Green Algae. <i>Science</i> , 2002, 296, 2395-2398.	6.0	1,013
5	Light Activation of Channelrhodopsin-2 in Excitable Cells of <i>Caenorhabditis elegans</i> Triggers Rapid Behavioral Responses. <i>Current Biology</i> , 2005, 15, 2279-2284.	1.8	869
6	Ultra light-sensitive and fast neuronal activation with the Ca ²⁺ -permeable channelrhodopsin CatCh. <i>Nature Neuroscience</i> , 2011, 14, 513-518.	7.1	405
7	Spectral Characteristics of the Photocycle of Channelrhodopsin-2 and Its Implication for Channel Function. <i>Journal of Molecular Biology</i> , 2008, 375, 686-694.	2.0	235
8	Proteorhodopsin is a Light-driven Proton Pump with Variable Vectoriality. <i>Journal of Molecular Biology</i> , 2002, 321, 821-838.	2.0	225
9	Structural Guidance of the Photocycle of Channelrhodopsin-2 by an Interhelical Hydrogen Bond. <i>Biochemistry</i> , 2010, 49, 267-278.	1.2	203
10	Channelrhodopsin-2 is a leaky proton pump. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 12317-12322.	3.3	194
11	Targeting Channelrhodopsin-2 to ON-bipolar Cells With Vitreally Administered AAV Restores ON and OFF Visual Responses in Blind Mice. <i>Molecular Therapy</i> , 2015, 23, 7-16.	3.7	166
12	Structural insights into ion conduction by channelrhodopsin 2. <i>Science</i> , 2017, 358, .	6.0	160
13	General Concept for Ion Translocation by Halobacterial Retinal Proteins: The Isomerization/Switch/Transfer (IST) Model. <i>Biochemistry</i> , 1997, 36, 2-7.	1.2	155
14	Transient protonation changes in channelrhodopsin-2 and their relevance to channel gating. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, E1273-81.	3.3	150
15	Optogenetic stimulation of the auditory pathway. <i>Journal of Clinical Investigation</i> , 2014, 124, 1114-1129.	3.9	147
16	Crystal structure of a light-driven sodium pump. <i>Nature Structural and Molecular Biology</i> , 2015, 22, 390-395.	3.6	146
17	A New Promoter Allows Optogenetic Vision Restoration with Enhanced Sensitivity in Macaque Retina. <i>Molecular Therapy</i> , 2017, 25, 2546-2560.	3.7	131
18	High frequency neural spiking and auditory signaling by ultrafast red-shifted optogenetics. <i>Nature Communications</i> , 2018, 9, 1750.	5.8	128

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19	Optogenetics: 10 years after ChR2 in neurons—views from the community. <i>Nature Neuroscience</i> , 2015, 18, 1202-1212.	7.1	122
20	Proteorhodopsin. <i>Biochimica Et Biophysica Acta - Bioenergetics</i> , 2014, 1837, 614-625.	0.5	96
21	Enlightening the photoactive site of channelrhodopsin-2 by DNP-enhanced solid-state NMR spectroscopy. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 9896-9901.	3.3	93
22	Inward H ⁺ pump xenorhodopsin: Mechanism and alternative optogenetic approach. <i>Science Advances</i> , 2017, 3, e1603187.	4.7	93
23	Functional expression of bacteriorhodopsin in oocytes allows direct measurement of voltage dependence of light induced H ⁺ pumping. <i>FEBS Letters</i> , 1995, 377, 263-266.	1.3	82
24	The DC gate in Channelrhodopsin-2: crucial hydrogen bonding interaction between C128 and D156. <i>Photochemical and Photobiological Sciences</i> , 2010, 9, 194-198.	1.6	79
25	Projection Structure of Channelrhodopsin-2 at 6 Å... Resolution by Electron Crystallography. <i>Journal of Molecular Biology</i> , 2011, 414, 86-95.	2.0	70
26	Structure and mechanisms of sodium-pumping KR2 rhodopsin. <i>Science Advances</i> , 2019, 5, eaav2671.	4.7	68
27	Molecular mechanism of light-driven sodium pumping. <i>Nature Communications</i> , 2020, 11, 2137.	5.8	67
28	The retinal structure of channelrhodopsin-2 assessed by resonance Raman spectroscopy. <i>FEBS Letters</i> , 2009, 583, 3676-3680.	1.3	63
29	Functional Maturation of Human Stem Cell-Derived Neurons in Long-Term Cultures. <i>PLoS ONE</i> , 2017, 12, e0169506.	1.1	62
30	Unique structure and function of viral rhodopsins. <i>Nature Communications</i> , 2019, 10, 4939.	5.8	59
31	Light-Induced Movement of the Transmembrane Helix...B in Channelrhodopsin-2. <i>Angewandte Chemie - International Edition</i> , 2013, 52, 9705-9708.	7.2	57
32	Temporal evolution of helix hydration in a light-gated ion channel correlates with ion conductance. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, E5796-804.	3.3	52
33	Voltage- and pH-Dependent Changes in Vectoriality of Photocurrents Mediated by Wild-type and Mutant Proteorhodopsins upon Expression in <i>Xenopus</i> Oocytes. <i>Journal of Molecular Biology</i> , 2009, 393, 320-341.	2.0	49
34	Channelrhodopsin-mediated optogenetics highlights a central role of depolarization-dependent plant proton pumps. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 20920-20925.	3.3	46
35	Light-Induced Helix Movements in Channelrhodopsin-2. <i>Journal of Molecular Biology</i> , 2015, 427, 341-349.	2.0	42
36	Biophysical Properties of Optogenetic Tools and Their Application for Vision Restoration Approaches. <i>Frontiers in Systems Neuroscience</i> , 2016, 10, 74.	1.2	41

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37	Structure of the light-driven sodium pump <sc>KR</sc>2 and its implications for optogenetics. FEBS Journal, 2016, 283, 1232-1238.	2.2	41
38	Viral rhodopsins 1 are a unique family of light-gated cation channels. Nature Communications, 2020, 11, 5707.	5.8	33
39	Tuning the Primary Reaction of Channelrhodopsin-2 by Imidazole, pH, and Site-Specific Mutations. Biophysical Journal, 2012, 102, 2649-2657.	0.2	32
40	Kinetics of proton release and uptake by channelrhodopsin 2. FEBS Letters, 2012, 586, 1344-1348.	1.3	27
41	On-demand optogenetic activation of human stem-cell-derived neurons. Scientific Reports, 2017, 7, 14450.	1.6	23
42	True-atomic-resolution insights into the structure and functional role of linear chains and low-barrier hydrogen bonds in proteins. Nature Structural and Molecular Biology, 2022, 29, 440-450.	3.6	21
43	Structure-based insights into evolution of rhodopsins. Communications Biology, 2021, 4, 821.	2.0	14
44	Voltage Dependence of Proton Pumping by Bacteriorhodopsin Mutants with Altered Lifetime of the M Intermediate. PLoS ONE, 2013, 8, e73338.	1.1	14
45	Ultrafast Protein Response in Channelrhodopsin-2 Studied by Time-Resolved Infrared Spectroscopy. Journal of Physical Chemistry Letters, 2018, 9, 7180-7184.	2.1	12
46	The Voltage Dependent Sidedness of the Reprotonation of the Retinal Schiff Base Determines the Unique Inward Pumping of Xenorhodopsin. Angewandte Chemie - International Edition, 2021, 60, 23010-23017.	7.2	10
47	Optogenetic Control of Ca ²⁺ and Voltage-Dependent Large Conductance (BK) Potassium Channels. Journal of Molecular Biology, 2017, 429, 911-921.	2.0	9
48	Die spannungsabhängige Richtung der Reprotonierung der Schiff'schen Base bestimmt das Einwärts-pumpen von Xenorhodopsin. Angewandte Chemie, 2021, 133, 23192.	1.6	0