

# Klaus Ballanyi

## List of Publications by Year in descending order

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75  
papers

3,925  
citations

101543

36  
h-index

123424

61  
g-index

77  
all docs

77  
docs citations

77  
times ranked

3750  
citing authors

#	ARTICLE	IF	CITATIONS
1	Disruption of KCC2 Reveals an Essential Role of K-Cl Cotransport Already in Early Synaptic Inhibition. <i>Neuron</i> , 2001, 30, 515-524.	8.1	530
2	Mechanisms of respiratory rhythm generation. <i>Current Opinion in Neurobiology</i> , 1992, 2, 788-793.	4.2	181
3	High Sensitivity to Neuromodulator-Activated Signaling Pathways at Physiological [K <sup>+</sup> ] of Confocally Imaged Respiratory Center Neurons in On-Line-Calibrated Newborn Rat Brainstem Slices. <i>Journal of Neuroscience</i> , 2006, 26, 11870-11880.	3.6	140
4	A Bright and Fast Red Fluorescent Protein Voltage Indicator That Reports Neuronal Activity in Organotypic Brain Slices. <i>Journal of Neuroscience</i> , 2016, 36, 2458-2472.	3.6	137
5	Synaptic inhibition in the isolated respiratory network of neonatal rats. <i>European Journal of Neuroscience</i> , 1998, 10, 3823-3839.	2.6	135
6	Protective role of neuronal KATP channels in brain hypoxia. <i>Journal of Experimental Biology</i> , 2004, 207, 3201-3212.	1.7	125
7	TMX1 determines cancer cell metabolism as a thiol-based modulator of ER <sup>+</sup> mitochondria Ca <sup>2+</sup> flux. <i>Journal of Cell Biology</i> , 2016, 214, 433-444.	5.2	113
8	Neuron <sup>+</sup> Glia Signaling via $\text{I}_{\text{K}}^{\text{A}}$ Adrenoceptor-Mediated Ca <sup>2+</sup> Release in Bergmann Glial Cells <i>In Situ</i> . <i>Journal of Neuroscience</i> , 1999, 19, 8401-8408.	3.6	112
9	Genetically encoded fluorescent indicators for imaging intracellular potassium ion concentration. <i>Communications Biology</i> , 2019, 2, 18.	4.4	110
10	Generation of Eupnea and Sighs by a Spatiochemically Organized Inspiratory Network. <i>Journal of Neuroscience</i> , 2008, 28, 2447-2458.	3.6	107
11	Brain <sup>+</sup> derived neurotrophic factor drives the changes in excitatory synaptic transmission in the rat superficial dorsal horn that follow sciatic nerve injury. <i>Journal of Physiology</i> , 2009, 587, 1013-1032.	2.9	104
12	Kir2.4: A Novel K <sup>+</sup> Inward Rectifier Channel Associated with Motoneurons of Cranial Nerve Nuclei. <i>Journal of Neuroscience</i> , 1998, 18, 4096-4105.	3.6	102
13	Glia Contribute to the Purinergic Modulation of Inspiratory Rhythm-Generating Networks. <i>Journal of Neuroscience</i> , 2010, 30, 3947-3958.	3.6	92
14	Preparing for the first breath: prenatal maturation of respiratory neural control. <i>Journal of Physiology</i> , 2006, 570, 437-444.	2.9	85
15	A genetically encoded Ca <sup>2+</sup> indicator based on circularly permuted sea anemone red fluorescent protein eqFP578. <i>BMC Biology</i> , 2018, 16, 9.	3.8	83
16	Acidosis of hippocampal neurones mediated by a plasmalemmal Ca <sup>2+</sup> /H <sup>+</sup> pump. <i>NeuroReport</i> , 1996, 7, 2000-2004.	1.2	82
17	Release of ATP by pre $\alpha$ 7nAChR complex astrocytes contributes to the hypoxic ventilatory response via a Ca <sup>2+</sup> -dependent P2Y <sub>1</sub> receptor mechanism. <i>Journal of Physiology</i> , 2018, 596, 3245-3269.	2.9	82
18	Amyloid $\text{I}^2$ (A $\text{I}^2$ ) Peptide Directly Activates Amylin-3 Receptor Subtype by Triggering Multiple Intracellular Signaling Pathways. <i>Journal of Biological Chemistry</i> , 2012, 287, 18820-18830.	3.4	80

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19	A long Stokes shift red fluorescent Ca <sup>2+</sup> indicator protein for two-photon and ratiometric imaging. <i>Nature Communications</i> , 2014, 5, 5262.	12.8	75
20	Whole-cell patch-clamp recordings from respiratory neurons in neonatal rat brainstem in vitro. <i>Neuroscience Letters</i> , 1992, 134, 153-156.	2.1	71
21	Genetically Encoded Glutamate Indicators with Altered Color and Topology. <i>ACS Chemical Biology</i> , 2018, 13, 1832-1837.	3.4	67
22	Neuron type-specific effects of brain-derived neurotrophic factor in rat superficial dorsal horn and their relevance to central sensitization™. <i>Journal of Physiology</i> , 2007, 584, 543-563.	2.9	65
23	HIV-1 viral protein R causes peripheral nervous system injury associated with <i>in vivo</i> neuropathic pain. <i>FASEB Journal</i> , 2010, 24, 4343-4353.	0.5	59
24	Neuromodulation of the Perinatal Respiratory Network. <i>Current Neuropharmacology</i> , 2004, 2, 221-243.	2.9	58
25	K <sup>+</sup> and Ca <sup>2+</sup> dependence of inspiratory-related rhythm in novel "calibrated" mouse brainstem slices. <i>Respiratory Physiology and Neurobiology</i> , 2011, 175, 37-48.	1.6	56
26	Identification of the pre-Bötzinger complex inspiratory center in calibrated "sandwich" slices from newborn mice with fluorescent Dbx1 interneurons. <i>Physiological Reports</i> , 2014, 2, e12111.	1.7	54
27	Developmental changes in the hypoxia tolerance of the in vitro respiratory network of rats. <i>Neuroscience Letters</i> , 1992, 148, 141-144.	2.1	51
28	Contribution of Ca <sup>2+</sup> -dependent conductances to membrane potential fluctuations of medullary respiratory neurons of newborn rats in vitro. <i>Journal of Physiology</i> , 2003, 552, 727-741.	2.9	48
29	Anoxic disturbance of the isolated respiratory network of neonatal rats. <i>Experimental Brain Research</i> , 1995, 103, 9-19.	1.5	46
30	<i>WT1</i> -Expressing Interneurons Regulate Left-Right Alternation during Mammalian Locomotor Activity. <i>Journal of Neuroscience</i> , 2018, 38, 5666-5676.	3.6	45
31	A Bioluminescent Ca <sup>2+</sup> Indicator Based on a Topological Variant of GCaMP6s. <i>ChemBioChem</i> , 2019, 20, 516-520.	2.6	45
32	Role of Bicarbonate and Chloride in GABA- and Glycine-Induced Depolarization and [Ca <sup>2+</sup> ] <sub>i</sub> Rise in Fetal Rat Motoneurons In Situ. <i>Journal of Neuroscience</i> , 2000, 20, 7905-7913.	3.6	44
33	Anoxia induced functional inactivation of neonatal respiratory neurones in vitro. <i>NeuroReport</i> , 1994, 6, 165-168.	1.2	43
34	Dependence on extracellular Ca <sup>2+</sup> /K <sup>+</sup> antagonism of inspiratory centre rhythms in slices and <i>en bloc</i> preparations of newborn rat brainstem. <i>Journal of Physiology</i> , 2007, 584, 489-508.	2.9	41
35	Structure-function analysis of rhythmogenic inspiratory pre-Bötzinger complex networks in "calibrated" newborn rat brainstem slices. <i>Respiratory Physiology and Neurobiology</i> , 2009, 168, 158-178.	1.6	39
36	Progressive postnatal decline in leptin sensitivity of arcuate hypothalamic neurons in the <i>Magel2</i> -null mouse model of Prader-Willi syndrome. <i>Human Molecular Genetics</i> , 2015, 24, 4276-4283.	2.9	37

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37	Analysis of the long-term actions of gabapentin and pregabalin in dorsal root ganglia and substantia gelatinosa. <i>Journal of Neurophysiology</i> , 2014, 112, 2398-2412.	1.8	34
38	Ischemia But Not Anoxia Evokes Vesicular and Ca <sup>2+</sup> -Independent Glutamate Release In the Dorsal Vagal Complex In Vitro. <i>Journal of Neurophysiology</i> , 2000, 83, 2905-2915.	1.8	33
39	GABA- and Glycine-Mediated Fall of Intracellular pH in Rat Medullary Neurons In Situ. <i>Journal of Neurophysiology</i> , 1997, 77, 1844-1852.	1.8	32
40	The ER chaperone calnexin controls mitochondrial positioning and respiration. <i>Science Signaling</i> , 2020, 13, .	3.6	32
41	Changes in intracellular ion activities induced by adrenaline in human and rat skeletal muscle. <i>Pflugers Archiv European Journal of Physiology</i> , 1988, 411, 283-288.	2.8	26
42	Intracellular Ca <sup>2+</sup> during metabolic activation of KATPchannels in spontaneously active dorsal vagal neurons in medullary slices. <i>European Journal of Neuroscience</i> , 1998, 10, 2574-2585.	2.6	26
43	Proteinase-activated receptor-1 mediates dorsal root ganglion neuronal degeneration in HIV/AIDS. <i>Brain</i> , 2011, 134, 3209-3221.	7.6	26
44	Contribution of Ca <sup>2+</sup> -Permeable AMPA/KA Receptors to Glutamate-Induced Ca <sup>2+</sup> Rise in Embryonic Lumbar Motoneurons In Situ. <i>Journal of Neurophysiology</i> , 2000, 83, 50-59.	1.8	25
45	Spontaneous activation of KATP current in rat dorsal vagal neurones. <i>NeuroReport</i> , 1994, 5, 1285-1288.	1.2	23
46	Anoxic persistence of lumbar respiratory bursts and block of lumbar locomotion in newborn rat brainstem spinal cords. <i>Journal of Physiology</i> , 2007, 585, 507-524.	2.9	23
47	Fluorescence imaging of active respiratory networks. <i>Respiratory Physiology and Neurobiology</i> , 2009, 168, 26-38.	1.6	23
48	Methylxanthine reversal of opioid-evoked inspiratory depression via phosphodiesterase-4 blockade. <i>Respiratory Physiology and Neurobiology</i> , 2010, 172, 94-105.	1.6	22
49	Reversal by phosphodiesterase-4 blockers of in vitro apnea in the isolated brainstem-spinal cord preparation from newborn rats. <i>Neuroscience Letters</i> , 2006, 401, 194-198.	2.1	21
50	Silencing by raised extracellular Ca <sup>2+</sup> of pre-Bötzing complex neurons in newborn rat brainstem slices without change of membrane potential or input resistance. <i>Neuroscience Letters</i> , 2009, 456, 25-29.	2.1	20
51	Endoplasmic reticulum stress in the dorsal root ganglia regulates large conductance potassium channels and contributes to pain in a model of multiple sclerosis. <i>FASEB Journal</i> , 2020, 34, 12577-12598.	0.5	20
52	Dynamic Recording of Cell Death in the In Vitro Dorsal Vagal Nucleus of Rats in Response to Metabolic Arrest. <i>Journal of Neurophysiology</i> , 2003, 89, 551-561.	1.8	19
53	Acute anti-allodynic action of gabapentin in dorsal horn and primary somatosensory cortex: Correlation of behavioural and physiological data. <i>Neuropharmacology</i> , 2017, 113, 576-590.	4.1	19
54	Receptor dependence of BDNF actions in superficial dorsal horn: relation to central sensitization and actions of macrophage colony stimulating factor 1. <i>Journal of Neurophysiology</i> , 2019, 121, 2308-2322.	1.8	19

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55	Voluntary wheel running reveals sex-specific nociceptive factors in murine experimental autoimmune encephalomyelitis. <i>Pain</i> , 2019, 160, 870-881.	4.2	19
56	Intracellular pH and KATP channel activity in dorsal vagal neurons of juvenile rats in situ during metabolic disturbances. <i>Brain Research</i> , 2004, 1017, 137-145.	2.2	14
57	Control of Breathing by "Nerve Glue". <i>Science Signaling</i> , 2010, 3, pe41.	3.6	13
58	Suppression of network activity in dorsal horn by gabapentin permeation of TRPV1 channels: Implications for drug access to cytoplasmic targets. <i>Neuroscience Letters</i> , 2015, 584, 397-402.	2.1	13
59	Mapping the Dynamic Recruitment of Spinal Neurons during Fictive Locomotion. <i>Journal of Neuroscience</i> , 2020, 40, 9692-9700.	3.6	13
60	Indirect Opioid Actions on Inspiratory pre-Bötzing Complex Neurons in Newborn Rat Brainstem Slices. <i>Advances in Experimental Medicine and Biology</i> , 2010, 669, 75-79.	1.6	12
61	Optical assessment of motoneuron function in a "twenty-four-hour" acute spinal cord slice model from fetal rats. <i>Journal of Neuroscience Methods</i> , 2005, 141, 309-320.	2.5	11
62	Characterization of the Nile Grass Rat as a Unique Model for Type 2 Diabetic Polyneuropathy. <i>Journal of Neuropathology and Experimental Neurology</i> , 2018, 77, 469-478.	1.7	10
63	Suction electrode recording in locus coeruleus of newborn rat brain slices reveals network bursting comprising summated non-synchronous spiking. <i>Neuroscience Letters</i> , 2018, 671, 103-107.	2.1	9
64	Characterization of Superficial Dorsal Horn Neurons from "Tamamaki" Mice and Stability of their GAD67-EGFP Phenotype in Defined-Medium Organotypic Culture. <i>Neuroscience</i> , 2018, 372, 126-140.	2.3	8
65	TARP mediation of accelerated and more regular locus coeruleus network bursting in neonatal rat brain slices. <i>Neuropharmacology</i> , 2019, 148, 169-177.	4.1	7
66	Using an upright preparation to identify and characterize locomotor related neurons across the transverse plane of the neonatal mouse spinal cord. <i>Journal of Neuroscience Methods</i> , 2019, 323, 90-97.	2.5	3
67	Autocrine Neuromodulation and Network Activity Patterns in the Locus Coeruleus of Newborn Rat Slices. <i>Brain Sciences</i> , 2022, 12, 437.	2.3	2
68	NMDA Enhances and Glutamate Attenuates Synchrony of Spontaneous Phase-Locked Locus Coeruleus Network Rhythm in Newborn Rat Brain Slices. <i>Brain Sciences</i> , 2022, 12, 651.	2.3	2
69	Expiratory abdominal muscle nerve is active at flexor phase, while inspiratory phrenic nerve is not active during locomotion evoked by 5-HT and NMDA in the neonatal rat. <i>Neuroscience Research</i> , 2021, 174, 9-9.	1.9	1
70	Glial contribution to the modulation of pre-Bötzing Complex rhythm generating networks by ATP. <i>FASEB Journal</i> , 2009, 23, .	0.5	0
71	Multiphoton calcium imaging of methylxanthine"reversal of opioid depression of inspiratory"related pre-Bötzing complex rhythm in newborn rat brainstem slices. <i>FASEB Journal</i> , 2010, 24, 614.5.	0.5	0
72	Disturbed inspiratory rhythm in rat brainstem slices by seizure"like bursting due to theophylline"evoked GABA A receptor block. <i>FASEB Journal</i> , 2010, 24, .	0.5	0

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73	Methylxanthine-evoked seizure-like perturbation of isolated newborn rat hippocampal and cortical networks. FASEB Journal, 2011, 25, lb522.	0.5	0
74	Signaling pathways underlying the P2Y 1 receptor-mediated excitation of the preBötzing Complex (preBötC) inspiratory rhythm generating network in vitro. FASEB Journal, 2012, 26, 1088.7.	0.5	0
75	Persistence of inspiratory rhythm in calibrated newborn rat preBötzing complex slices upon blockade of store-mediated calcium signaling. FASEB Journal, 2012, 26, 895.2.	0.5	0