

# Charles W Bourque

## List of Publications by Year in descending order

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99  
papers

6,632  
citations

44042

48  
h-index

64755

79  
g-index

101  
all docs

101  
docs citations

101  
times ranked

4198  
citing authors

#	ARTICLE	IF	CITATIONS
1	Central mechanisms of osmosensation and systemic osmoregulation. <i>Nature Reviews Neuroscience</i> , 2008, 9, 519-531.	4.9	559
2	Mechanosensitive channels transduce osmosensitivity in supraoptic neurons. <i>Nature</i> , 1993, 364, 341-343.	13.7	297
3	Osmoreceptors, Osmoreception, and Osmoregulation. <i>Frontiers in Neuroendocrinology</i> , 1994, 15, 231-274.	2.5	286
4	An N-terminal variant of Trpv1 channel is required for osmosensory transduction. <i>Nature Neuroscience</i> , 2006, 9, 93-98.	7.1	283
5	Transient Receptor Potential Vanilloid 1 Is Required for Intrinsic Osmoreception in Organum Vasculosum Lamina Terminalis Neurons and for Normal Thirst Responses to Systemic Hyperosmolality. <i>Journal of Neuroscience</i> , 2006, 26, 9069-9075.	1.7	233
6	OSMORECEPTORS IN THE CENTRAL NERVOUS SYSTEM. <i>Annual Review of Physiology</i> , 1997, 59, 601-619.	5.6	231
7	Neurons diversify astrocytes in the adult brain through sonic hedgehog signaling. <i>Science</i> , 2016, 351, 849-854.	6.0	221
8	Transient calcium-dependent potassium current in magnocellular neurosecretory cells of the rat supraoptic nucleus.. <i>Journal of Physiology</i> , 1988, 397, 331-347.	1.3	137
9	Clock-driven vasopressin neurotransmission mediates anticipatory thirst prior to sleep. <i>Nature</i> , 2016, 537, 685-688.	13.7	130
10	NMDA receptor-mediated rhythmic bursting activity in rat supraoptic nucleus neurones in vitro.. <i>Journal of Physiology</i> , 1992, 458, 667-687.	1.3	129
11	Adult NG2-Glia Are Required for Median Eminence-Mediated Leptin Sensing and Body Weight Control. <i>Cell Metabolism</i> , 2016, 23, 797-810.	7.2	119
12	Calcium-dependent potassium conductance in rat supraoptic nucleus neurosecretory neurons. <i>Journal of Neurophysiology</i> , 1985, 54, 1375-1382.	0.9	117
13	Intraterminal recordings from the rat neurohypophysis in vitro.. <i>Journal of Physiology</i> , 1990, 421, 247-262.	1.3	110
14	Hypertonicity Sensing in Organum Vasculosum Lamina Terminalis Neurons: A Mechanical Process Involving <i>TRPV1</i> But Not <i>TRPV4</i> . <i>Journal of Neuroscience</i> , 2011, 31, 14669-14676.	1.7	110
15	High Salt Intake Increases Blood Pressure via BDNF-Mediated Downregulation of KCC2 and Impaired Baroreflex Inhibition of Vasopressin Neurons. <i>Neuron</i> , 2015, 85, 549-560.	3.8	107
16	The neural basis of homeostatic and anticipatory thirst. <i>Nature Reviews Nephrology</i> , 2018, 14, 11-25.	4.1	106
17	Calcium-dependent spike after-current induces burst firing in magnocellular neurosecretory cells. <i>Neuroscience Letters</i> , 1986, 70, 204-209.	1.0	105
18	Apamin and d-tubocurarine block the after-hyperpolarization of rat supraoptic neurosecretory neurons. <i>Neuroscience Letters</i> , 1987, 82, 185-190.	1.0	105

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19	Properties of supraoptic magnocellular neurones isolated from the adult rat.. Journal of Physiology, 1992, 455, 291-306.	1.3	102
20	Integration of sodium and osmosensory signals in vasopressin neurons. Trends in Neurosciences, 2002, 25, 199-205.	4.2	98
21	Unique Interweaved Microtubule Scaffold Mediates Osmosensory Transduction via Physical Interaction with TRPV1. Neuron, 2014, 83, 866-878.	3.8	94
22	Ionic basis for the intrinsic activation of rat supraoptic neurones by hyperosmotic stimuli.. Journal of Physiology, 1989, 417, 263-277.	1.3	91
23	Central clock excites vasopressin neurons by waking osmosensory afferents during late sleep. Nature Neuroscience, 2010, 13, 467-474.	7.1	89
24	Osmometry in osmosensory neurons. Nature Neuroscience, 2003, 6, 1021-1022.	7.1	87
25	Chapter 2.1.1 Osmoregulation of vasopressin neurons: A synergy of intrinsic and synaptic processes. Progress in Brain Research, 1999, 119, 59-76.	0.9	84
26	Excitatory peptides and osmotic pressure modulate mechanosensitive cation channels in concert. Nature Neuroscience, 2000, 3, 572-579.	7.1	81
27	Evidence for NG2-glia Derived, Adult-Born Functional Neurons in the Hypothalamus. PLoS ONE, 2013, 8, e78236.	1.1	79
28	Gadolinium Uncouples Mechanical Detection and Osmoreceptor Potential in Supraoptic Neurons. Neuron, 1996, 16, 175-181.	3.8	77
29	TRPV1 Gene Required for Thermosensory Transduction and Anticipatory Secretion from Vasopressin Neurons during Hyperthermia. Neuron, 2008, 58, 179-185.	3.8	76
30	Autocrine feedback inhibition of plateau potentials terminates phasic bursts in magnocellular neurosecretory cells of the rat supraoptic nucleus. Journal of Physiology, 2004, 557, 949-960.	1.3	74
31	The function of Ca <sup>2+</sup> channel subtypes in exocytotic secretion: new perspectives from synaptic and non-synaptic release. Progress in Biophysics and Molecular Biology, 2001, 77, 269-303.	1.4	72
32	Taurine Release by Astrocytes Modulates Osmosensitive Glycine Receptor Tone and Excitability in the Adult Supraoptic Nucleus. Journal of Neuroscience, 2012, 32, 12518-12527.	1.7	70
33	Activity-dependent modulation of nerve terminal excitation in a mammalian peptidergic system. Trends in Neurosciences, 1991, 14, 28-30.	4.2	67
34	Flufenamic acid blocks depolarizing afterpotentials and phasic firing in rat supraoptic neurones. Journal of Physiology, 2002, 545, 537-542.	1.3	67
35	Functional N-Methyl-D-Aspartate and Non-N-Methyl-D-Aspartate Receptors are Expressed by Rat Supraoptic Neurosecretory Cells in vitro. Journal of Neuroendocrinology, 1991, 3, 509-514.	1.2	66
36	<sup>125</sup> I-TRPV1: A Molecular Co-detector of Body Temperature and Osmotic Stress. Cell Reports, 2015, 13, 23-30.	2.9	66

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37	Mechanisms of rhythmogenesis: insights from hypothalamic vasopressin neurons. Trends in Neurosciences, 2006, 29, 108-115.	4.2	65
38	Actin Filaments Mediate Mechanical Gating during Osmosensory Transduction in Rat Supraoptic Nucleus Neurons. Journal of Neuroscience, 2007, 27, 4008-4013.	1.7	64
39	Galanin Inhibits Continuous and Phasic Firing in Rat Hypothalamic Magnocellular Neurosecretory Cells. Journal of Neuroscience, 1997, 17, 6048-6056.	1.7	62
40	Excitatory Role of the Hyperpolarization-Activated Inward Current in Phasic and Tonic Firing of Rat Supraoptic Neurons. Journal of Neuroscience, 2000, 20, 4855-4863.	1.7	62
41	Muscarinic Receptor Modulation of Slow Afterhyperpolarization and Phasic Firing in Rat Supraoptic Nucleus Neurons. Journal of Neuroscience, 2004, 24, 7718-7726.	1.7	56
42	Synaptic Activation of Rat Supraoptic Neurons by Osmotic Stimulation of the Organum vasculosum lamina terminalis. Neuroendocrinology, 1992, 55, 609-611.	1.2	55
43	Coincident Detection of CSF Na <sup>+</sup> and Osmotic Pressure in Osmoregulatory Neurons of the Supraoptic Nucleus. Neuron, 1999, 24, 453-460.	3.8	55
44	Osmotic and thermal control of magnocellular neurosecretory neurons – role of an N-terminal variant of <i>trpv1</i> . European Journal of Neuroscience, 2010, 32, 2022-2030.	1.2	54
45	Calcium-channel subtypes in the somata and axon terminals of magnocellular neurosecretory cells. Trends in Neurosciences, 1996, 19, 440-444.	4.2	51
46	Ionic Basis of <i>on</i> and <i>off</i> Persistent Activity in Layer III Lateral Entorhinal Cortical Principal Neurons. Journal of Neurophysiology, 2008, 99, 2006-2011.	0.9	51
47	Mechanical Basis of Osmosensory Transduction in Magnocellular Neurosecretory Neurones of the Rat Supraoptic Nucleus. Journal of Neuroendocrinology, 2015, 27, 507-515.	1.2	49
48	Chapter 7 Stretch-inactivated cation channels: cellular targets for modulation of osmosensitivity in supraoptic neurons. Progress in Brain Research, 2002, 139, 85-94.	0.9	48
49	Phasic bursts in rat magnocellular neurosecretory cells are not intrinsically regenerative in vivo. European Journal of Neuroscience, 2004, 19, 2977-2983.	1.2	48
50	Neurophysiological characterization of mammalian osmosensitive neurones. Experimental Physiology, 2007, 92, 499-505.	0.9	48
51	Endogenous Activation of Supraoptic Nucleus $\mu$ -Opioid Receptors Terminates Spontaneous Phasic Bursts in Rat Magnocellular Neurosecretory Cells. Journal of Neurophysiology, 2006, 95, 3235-3244.	0.9	44
52	Caesium blocks depolarizing after-potentials and phasic firing in rat supraoptic neurones. Journal of Physiology, 1998, 510, 165-175.	1.3	43
53	Osmosensation in vasopressin neurons: changing actin density to optimize function. Trends in Neurosciences, 2010, 33, 76-83.	4.2	43
54	Amplification of Transducer Gain by Angiotensin II-Mediated Enhancement of Cortical Actin Density in Osmosensory Neurons. Journal of Neuroscience, 2008, 28, 9536-9544.	1.7	41

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55	Anatomical organization of the rat organum vasculosum laminae terminalis. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2015, 309, R324-R337.	0.9	40
56	Activity-dependent synaptic plasticity in the supraoptic nucleus of the rat hypothalamus. Journal of Physiology, 2006, 573, 711-721.	1.3	39
57	Density of transient K <sup>+</sup> current influences excitability in acutely isolated vasopressin and oxytocin neurones of rat hypothalamus. Journal of Physiology, 1998, 511, 423-432.	1.3	38
58	eIF2 $\beta$ phosphorylation controls thermal nociception. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 11949-11954.	3.3	37
59	Sodium regulates clock time and output via an excitatory GABAergic pathway. Nature, 2020, 583, 421-424.	13.7	37
60	Dynamic and Permissive Roles of TRPV1 and TRPV4 Channels for Thermosensation in Mouse Supraoptic Magnocellular Neurosecretory Neurons. Journal of Neuroscience, 2013, 33, 17160-17165.	1.7	36
61	Muscarinic Receptors Control Frequency Tuning Through the Downregulation of an A-Type Potassium Current. Journal of Neurophysiology, 2007, 98, 1526-1537.	0.9	35
62	Osmoreception in magnocellular neurosecretory cells: from single channels to secretion. Trends in Neurosciences, 1994, 17, 340-344.	4.2	34
63	Atrial Natriuretic Peptide Modulates Synaptic Transmission from Osmoreceptor Afferents to the Supraoptic Nucleus. Journal of Neuroscience, 1996, 16, 7526-7532.	1.7	34
64	Extrinsic modulation of spike afterpotentials in rat hypothalamoneurohypophysial neurons. Cellular and Molecular Neurobiology, 1998, 18, 3-12.	1.7	29
65	Membrane Properties Related to the Firing Behavior of Zebrafish Motoneurons. Journal of Neurophysiology, 2003, 89, 657-664.	0.9	28
66	Calcium permeability and flux through osmosensory transduction channels of isolated rat supraoptic nucleus neurons. European Journal of Neuroscience, 2006, 23, 1491-1500.	1.2	27
67	Dual role for calcium in the control of spike duration in rat supraoptic neuroendocrine cells. Neuroscience Letters, 1991, 133, 271-274.	1.0	26
68	Circumventricular Organs: Gateways to the Brain Axonal Projections From The Organum Vasculosum Lamina Terminalis To The Supraoptic Nucleus: Functional Analysis And Presynaptic Modulation. Clinical and Experimental Pharmacology and Physiology, 2001, 28, 570-574.	0.9	25
69	Central and peripheral roles of vasopressin in the circadian defense of body hydration. Best Practice and Research in Clinical Endocrinology and Metabolism, 2017, 31, 535-546.	2.2	25
70	Cell-Specific Retrograde Signals Mediate Antiparallel Effects of Angiotensin II on Osmoreceptor Afferents to Vasopressin and Oxytocin Neurons. Cell Reports, 2014, 8, 355-362.	2.9	22
71	Dystroglycan and Mitochondrial Ribosomal Protein L34 Regulate Differentiation in the Drosophila Eye. PLoS ONE, 2010, 5, e10488.	1.1	22
72	Peptidergic Excitation of Supraoptic Nucleus Neurons: Involvement of Stretch-Inactivated Cation Channels. Experimental Neurology, 2001, 171, 210-218.	2.0	20

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73	A rat brain slice preserving synaptic connections between neurons of the suprachiasmatic nucleus, organum vasculosum lamina terminalis and supraoptic nucleus. <i>Journal of Neuroscience Methods</i> , 2003, 128, 67-77.	1.3	20
74	Ca <sup>2+</sup> -dependent K <sup>+</sup> currents and spike-frequency adaptation in medial entorhinal cortex layer II stellate cells. <i>Hippocampus</i> , 2007, 17, 1143-1148.	0.9	20
75	Effects of Peritoneal Sepsis on Rat Central Osmoregulatory Neurons Mediating Thirst and Vasopressin Release. <i>Journal of Neuroscience</i> , 2015, 35, 12188-12197.	1.7	20
76	Trpv4 Mediates Hypotonic Inhibition of Central Osmosensory Neurons via Taurine Gliotransmission. <i>Cell Reports</i> , 2018, 23, 2245-2253.	2.9	20
77	Depolarizing GABA Transmission Restrains Activity-Dependent Glutamatergic Synapse Formation in the Developing Hippocampal Circuit. <i>Frontiers in Cellular Neuroscience</i> , 2020, 14, 36.	1.8	20
78	Properties of the Transient K <sup>+</sup> Current in Acutely Isolated Supraoptic Neurons from Adult Rat. <i>Advances in Experimental Medicine and Biology</i> , 1998, 449, 97-106.	0.8	20
79	Role of Vasopressin in Rat Models of Salt-Dependent Hypertension. <i>Current Hypertension Reports</i> , 2017, 19, 42.	1.5	19
80	Ionic basis of the caesium-induced depolarisation in rat supraoptic nucleus neurones. <i>Journal of Physiology</i> , 2001, 536, 797-808.	1.3	18
81	Neurons that drive and quench thirst. <i>Science</i> , 2017, 357, 1092-1093.	6.0	18
82	Rat supraoptic neurons are resistant to glutamate neurotoxicity. <i>NeuroReport</i> , 1992, 3, 87-90.	0.6	17
83	Effects of Salt Loading on the Regulation of Rat Hypothalamic Magnocellular Neurosecretory Cells by Ionotropic GABA and Glycine Receptors. <i>Journal of Neuroendocrinology</i> , 2016, 28, .	1.2	14
84	Effects of Activin-A on Neurons Acutely Isolated from the Rat Supraoptic Nucleus. <i>Journal of Neuroendocrinology</i> , 1995, 7, 661-663.	1.2	13
85	Activation of organum vasculosum neurones and water intake in mice by vasopressin neurones in the suprachiasmatic nucleus. <i>Journal of Neuroendocrinology</i> , 2018, 30, e12577.	1.2	12
86	IL-1 $\beta$ directly excites isolated rat supraoptic neurons via upregulation of the osmosensory cation current. <i>American Journal of Physiology - Regulatory Integrative and Comparative Physiology</i> , 2006, 290, R1183-R1190.	0.9	11
87	Neurophysiology of supraoptic neurons in C57/BL mice studied in three acute in vitro preparations. <i>Progress in Brain Research</i> , 2008, 170, 229-242.	0.9	10
88	Activity maintains structural plasticity of mossy fiber terminals in the hippocampus. <i>Molecular and Cellular Neurosciences</i> , 2012, 50, 260-271.	1.0	9
89	Does a stretch-inactivated cation channel integrate osmotic and peptidergic signals?. <i>Nature Neuroscience</i> , 2000, 3, 847-848.	7.1	8
90	High dietary salt amplifies osmosensiveness in vasopressin-releasing neurons. <i>Cell Reports</i> , 2021, 34, 108866.	2.9	8

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91	Detection of activity-dependent vasopressin release from neuronal dendrites and axon terminals using sniffer cells. <i>Journal of Neurophysiology</i> , 2018, 120, 1386-1396.	0.9	7
92	Effects of Salt Loading on the Morphology of Astrocytes in the Ventral Glia Limitans of the Rat Supraoptic Nucleus. <i>Journal of Neuroendocrinology</i> , 2016, 28, .	1.2	6
93	Visually guided whole cell patch clamp of mouse supraoptic nucleus neurons in cultured and acute conditions. <i>American Journal of Physiology - Regulatory Integrative and Comparative Physiology</i> , 2006, 291, R68-R76.	0.9	5
94	Modulation of spike clustering by NMDA receptors and neurotensin in rat supraoptic nucleus neurons. <i>Journal of Physiology</i> , 2014, 592, 4177-4186.	1.3	4
95	Osmoregulatory Circuits in Slices and En Bloc Preparations of Rodent Hypothalamus. <i>NeuroMethods</i> , 2012, , 211-231.	0.2	4
96	Hypothalamic neurons controlling water homeostasis: it's all about time. <i>Current Opinion in Physiology</i> , 2018, 5, 45-50.	0.9	3
97	AUTOREGULATION OF BURSTING OF AVP NEURONS OF THE RAT HYPOTHALMUS. , 2005, , 49-88.		1
98	A TRP that makes us feel hyper. <i>Journal of Physiology</i> , 2012, 590, 1779-1780.	1.3	1
99	Mechanism and function of phasic firing in vasopressin-releasing magnocellular neurosecretory cells. <i>Journal of Neuroendocrinology</i> , 2021, 33, e13048.	1.2	1