Mark T Nelson

List of Publications by Year
in descending order

130 papers	10,324 citations	34016 52 h-index	33814 99 g-index
147 all docs	147 docs citations	147 times ranked	6540 citing authors

#	Article	IF	Citations
1	Vasoregulation by the Î²1 subunit of the calcium-activated potassium channel. Nature, 2000, 407, 870-876.	13.7	772
2	Regulation of arterial diameter and wall [Ca²⁺] in cerebral arteries of rat by membrane potential and intravascular pressure. Journal of Physiology, 1998, 508, 199-209.	1.3	583
3	Local potassium signaling couples neuronal activity to vasodilation in the brain. Nature Neuroscience, 2006, 9, 1397-1403.	7.1	487
4	Elementary Ca ²⁺ Signals Through Endothelial TRPV4 Channels Regulate Vascular Function. Science, 2012, 336, 597-601.	6.0	479
5	Arterial dilations in response to calcitonin gene-related peptide involve activation of K+ channels. Nature, 1990, 344, 770-773.	13.7	446
6	Capillary K+-sensing initiates retrograde hyperpolarization to increase local cerebral blood flow. Nature Neuroscience, 2017, 20, 717-726.	7.1	364
7	Noradrenaline contracts arteries by activating voltage-dependent calcium channels. Nature, 1988, 336, 382-385.	13.7	323
8	Altered Expression of Small-Conductance Ca 2+ -Activated K + (SK3) Channels Modulates Arterial Tone and Blood Pressure. Circulation Research, 2003, 93, 124-131.	2.0	301
9	Astrocytic endfoot Ca ²⁺ and BK channels determine both arteriolar dilation and constriction. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 3811-3816.	3.3	265
10	Functional Coupling of Ryanodine Receptors to KCa Channels in Smooth Muscle Cells from Rat Cerebral Arteries. Journal of General Physiology, 1999, 113, 229-238.	0.9	261
11	Functional architecture of inositol 1,4,5-trisphosphate signaling in restricted spaces of myoendothelial projections. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 9627-9632.	3.3	252
12	Ryanodine receptors regulate arterial diameter and wall [Ca²⁺] in cerebral arteries of rat via Ca²⁺â€dependent K⁺ channels. Journal of Physiology, 1998, 508, 211-221.	1.3	247
13	Calcium Dynamics in Cortical Astrocytes and Arterioles During Neurovascular Coupling. Circulation Research, 2004, 95, e73-81.	2.0	230
14	Frequency modulation of Ca²⁺sparks is involved in regulation of arterial diameter by cyclic nucleotides. American Journal of Physiology - Cell Physiology, 1998, 274, C1346-C1355.	2.1	194
15	Micromolar Ca²⁺ from sparks activates Ca²⁺-sensitive K⁺ channels in rat cerebral artery smooth muscle. American Journal of Physiology - Cell Physiology, 2001, 281, C1769-C1775.	2.1	186
16	Chloride channel blockers inhibit myogenic tone in rat cerebral arteries. Journal of Physiology, 1997, 502, 259-264.	1.3	169
17	Calcium Signaling in Smooth Muscle. Cold Spring Harbor Perspectives in Biology, 2011, 3, a004549-a004549.	2.3	155
18	AKAP150-dependent cooperative TRPV4 channel gating is central to endothelium-dependent vasodilation and is disrupted in hypertension. Science Signaling, 2014, 7, ra66.	1.6	151

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19	Regulation of urinary bladder smooth muscle contractions by ryanodine receptors and BK and SK channels. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2000, 279, R60-R68.	0.9	140
20	Voltage dependence of Ca²⁺sparks in intact cerebral arteries. American Journal of Physiology - Cell Physiology, 1998, 274, C1755-C1761.	2.1	138
21	Kir2.1 encodes the inward rectifier potassium channel in rat arterial smooth muscle cells. Journal of Physiology, 1999, 515, 639-651.	1.3	135
22	Contractile pericytes determine the direction of blood flow at capillary junctions. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 27022-27033.	3.3	127
23	Swellingâ€activated cation channels mediate depolarization of rat cerebrovascular smooth muscle by hyposmolarity and intravascular pressure. Journal of Physiology, 2000, 527, 139-148.	1.3	119
24	Activators of protein kinase C decrease Ca²⁺spark frequency in smooth muscle cells from cerebral arteries. American Journal of Physiology - Cell Physiology, 1997, 273, C2090-C2095.	2.1	116
25	Differential regulation of Ca²⁺sparks and Ca²⁺waves by UTP in rat cerebral artery smooth muscle cells. American Journal of Physiology - Cell Physiology, 2000, 279, C1528-C1539.	2.1	116
26	Increased Myogenic Tone and Diminished Responsiveness to ATP-Sensitive K ⁺ Channel Openers in Cerebral Arteries From Diabetic Rats. Circulation Research, 1997, 81, 996-1004.	2.0	114
27	Vascular Inward Rectifier K⁺ Channels as External K⁺ Sensors in the Control of Cerebral Blood Flow. Microcirculation, 2015, 22, 183-196.	1.0	113
28	Urinary bladder instability induced by selective suppression of the murine small conductance calcium-activated potassium (SK3) channel. Journal of Physiology, 2003, 551, 893-903.	1.3	112
29	Ion channel networks in the control of cerebral blood flow. Journal of Cerebral Blood Flow and Metabolism, 2016, 36, 492-512.	2.4	108
30	Differential regulation of SK and BK channels by Ca2+signals from Ca2+channels and ryanodine receptors in guineaâ€pig urinary bladder myocytes. Journal of Physiology, 2002, 541, 483-492.	1.3	106
31	The K ⁺ channel K _{IR} 2.1 functions in tandem with proton influx to mediate sour taste transduction. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E229-38.	3.3	105
32	PIP2 depletion promotes TRPV4 channel activity in mouse brain capillary endothelial cells. ELife, 2018, 7, .	2.8	104
33	Ontogeny of Local Sarcoplasmic Reticulum Ca 2+ Signals in Cerebral Arteries. Circulation Research, 1998, 83, 1104-1114.	2.0	103
34	A PLCÎ³1-Dependent, Force-Sensitive Signaling Network in the Myogenic Constriction of Cerebral Arteries. Science Signaling, 2014, 7, ra49.	1.6	100
35	Inversion of neurovascular coupling by subarachnoid blood depends on large-conductance Ca ²⁺ -activated K ⁺ (BK) channels. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, E1387-95.	3.3	97
36	Inward rectifier potassium (Kir2.1) channels as endâ€stage boosters of endotheliumâ€dependent vasodilators. Journal of Physiology, 2016, 594, 3271-3285.	1.3	97

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37	Voltage dependence of the coupling of Ca²⁺sparks to BK_{Ca}channels in urinary bladder smooth muscle. American Journal of Physiology - Cell Physiology, 2001, 280, C481-C490.	2.1	94
38	Acidosis Dilates Brain Parenchymal Arterioles by Conversion of Calcium Waves to Sparks to Activate BK Channels. Circulation Research, 2012, 110, 285-294.	2.0	93
39	Intracellular calcium events activated by ATP in murine colonic myocytes. American Journal of Physiology - Cell Physiology, 2000, 279, C126-C135.	2.1	91
40	Role of phospholamban in the modulation of arterial Ca²⁺sparks and Ca²⁺-activated K⁺channels by cAMP. American Journal of Physiology - Cell Physiology, 2001, 281, C1029-C1037.	2.1	89
41	Potassium channelopathy-like defect underlies early-stage cerebrovascular dysfunction in a genetic model of small vessel disease. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E796-805.	3.3	77
42	Reducing <scp>T</scp>imp3 or vitronectin ameliorates disease manifestations in <scp>CADASIL</scp> mice. Annals of Neurology, 2016, 79, 387-403.	2.8	74
43	Vascular TRP Channels: Performing Under Pressure and Going with the Flow. Physiology, 2014, 29, 343-360.	1.6	71
44	Gender differences in coronary artery diameter reflect changes in both endothelial Ca²⁺and ecNOS activity. American Journal of Physiology - Heart and Circulatory Physiology, 1999, 276, H961-H969.	1.5	70
45	Low levels of K_{ATP}channel activation decrease excitability and contractility of urinary bladder. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2001, 280, R1427-R1433.	0.9	69
46	Stress-induced glucocorticoid signaling remodels neurovascular coupling through impairment of cerebrovascular inwardly rectifying K ⁺ channel function. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 7462-7467.	3.3	69
47	Endothelial GqPCR activity controls capillary electrical signaling and brain blood flow through PIP ₂ depletion. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E3569-E3577.	3.3	67
48	Dysfunction of Mouse Cerebral Arteries during Early Aging. Journal of Cerebral Blood Flow and Metabolism, 2015, 35, 1445-1453.	2.4	66
49	Traumatic Brain Injury Causes Endothelial Dysfunction in the Systemic Microcirculation through Arginase-1â€"Dependent Uncoupling of Endothelial Nitric Oxide Synthase. Journal of Neurotrauma, 2017, 34, 192-203.	1.7	66
50	Properties and molecular basis of the mouse urinary bladder voltageâ€gated K + current. Journal of Physiology, 2003, 549, 65-74.	1.3	65
51	TRPV4 and KRAS and FGFR1 gain-of-function mutations drive giant cell lesions of the jaw. Nature Communications, 2018, 9, 4572.	5.8	58
52	Transient contractions of urinary bladder smooth muscle are drivers of afferent nerve activity during filling. Journal of General Physiology, 2016, 147, 323-335.	0.9	56
53	Mechanistic insights into a TIMP3-sensitive pathway constitutively engaged in the regulation of cerebral hemodynamics. ELife, 2016, 5, .	2.8	55
54	Pharmacological inhibitors of TRPV4 channels reduce cytokine production, restore endothelial function and increase survival in septic mice. Scientific Reports, 2016, 6, 33841.	1.6	52

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55	Piezo1 Is a Mechanosensor Channel in Central Nervous System Capillaries. Circulation Research, 2022, 130, 1531-1546.	2.0	48
56	Local IP ₃ receptorâ€“mediated Ca ²⁺ signals compound to direct blood flow in brain capillaries. Science Advances, 2021, 7, .	4.7	46
57	Nerveâ€evoked purinergic signalling suppresses action potentials, Ca²⁺ flashes and contractility evoked by muscarinic receptor activation in mouse urinary bladder smooth muscle. Journal of Physiology, 2009, 587, 5275-5288.	1.3	45
58	PIP ₂ corrects cerebral blood flow deficits in small vessel disease by rescuing capillary Kir2.1 activity. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	45
59	ATP- and voltage-dependent electro-metabolic signaling regulates blood flow in heart. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 7461-7470.	3.3	44
60	The capillary Kir channel as sensor and amplifier of neuronal signals: Modeling insights on K ⁺ -mediated neurovascular communication. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 16626-16637.	3.3	44
61	PIP ₂ : A critical regulator of vascular ion channels hiding in plain sight. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 20378-20389.	3.3	43
62	Purinergic regulation of vascular tone in the retrotrapezoid nucleus is specialized to support the drive to breathe. ELife, 2017, 6, .	2.8	42
63	Reducing Hypermuscularization of the Transitional Segment Between Arterioles and Capillaries Protects Against Spontaneous Intracerebral Hemorrhage. Circulation, 2020, 141, 2078-2094.	1.6	41
64	PIP2 Improves Cerebral Blood Flow in a Mouse Model of Alzheimerâ€™s Disease. Function, 2021, 2, zqab010.	1.1	40
65	The Î²1 subunit of the Ca2+-sensitive K+ channel protects against hypertension. Journal of Clinical Investigation, 2004, 113, 955-957.	3.9	39
66	Social stress in mice induces urinary bladder overactivity and increases TRPV1 channel-dependent afferent nerve activity. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2015, 309, R629-R638.	0.9	38
67	Pressure-induced oxidative activation of PKG enables vasoregulation by Ca ²⁺ sparks and BK channels. Science Signaling, 2016, 9, ra100.	1.6	35
68	Social stress induces changes in urinary bladder function, bladder NGF content, and generalized bladder inflammation in mice. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2014, 307, R893-R900.	0.9	34
69	Adenosine signaling activates ATP-sensitive K ⁺ channels in endothelial cells and pericytes in CNS capillaries. Science Signaling, 2022, 15, eabl5405.	1.6	33
70	Bayliss, myogenic tone and volume-regulated chloride channels in arterial smooth muscle. Journal of Physiology, 1998, 507, 629-629.	1.3	31
71	Oxidation of cysteine 117 stimulates constitutive activation of the type Iî± cGMP-dependent protein kinase. Journal of Biological Chemistry, 2018, 293, 16791-16802.	1.6	30
72	NS19504: A Novel BK Channel Activator with Relaxing Effect on Bladder Smooth Muscle Spontaneous Phasic Contractions. Journal of Pharmacology and Experimental Therapeutics, 2014, 350, 520-530.	1.3	29

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73	Differential restoration of functional hyperemia by antihypertensive drug classes in hypertension-related cerebral small vessel disease. Journal of Clinical Investigation, 2021, 131, .	3.9	27
74	Disruption of Pressure-Induced Ca ²⁺ Spark Vasoregulation of Resistance Arteries, Rather Than Endothelial Dysfunction, Underlies Obesity-Related Hypertension. Hypertension, 2020, 75, 539-548.	1.3	26
75	Actions of histamine on muscle and ganglia of the guinea pig gallbladder. American Journal of Physiology - Renal Physiology, 2000, 279, G622-G630.	1.6	25
76	Zinc drives vasorelaxation by acting in sensory nerves, endothelium and smooth muscle. Nature Communications, 2021, 12, 3296.	5.8	25
77	Potassium Ions as Vasodilators: Role of Inward Rectifier Potassium Channels. Circulation Research, 2001, 88, 132-133.	2.0	24
78	Vascular control of the CO2/H+-dependent drive to breathe. ELife, 2020, 9, .	2.8	23
79	Uncoupling of neurovascular communication after transient global cerebral ischemia is caused by impaired parenchymal smooth muscle K_{ir} channel function. Journal of Cerebral Blood Flow and Metabolism, 2016, 36, 1195-1201.	2.4	22
80	A Non-Anesthetized Mouse Model for Recording Sensory Urinary Bladder Activity. Frontiers in Neurology, 2010, 1, 127.	1.1	20
81	Gain-of-function mutation in<i>TRPV4</i>identified in patients with osteonecrosis of the femoral head. Journal of Medical Genetics, 2016, 53, 705-709.	1.5	20
82	Purinergic signalling underlies transforming growth factorâ€Î²â€mediated bladder afferent nerve hyperexcitability. Journal of Physiology, 2016, 594, 3575-3588.	1.3	17
83	Zeneca ZD6169 Activates ATP-Sensitive K⁺ Channels in the Urinary Bladder of the Guinea Pig. Pharmacology, 1996, 53, 170-179.	0.9	16
84	Rhythmic Calcium Events in the Lamina Propria Network of the Urinary Bladder of Rat Pups. Frontiers in Systems Neuroscience, 2017, 11, 87.	1.2	16
85	The yin and yang of <i>K</i>_V channels in cerebral small vessel pathologies. Microcirculation, 2018, 25, e12436.	1.0	15
86	Impaired capillary-to-arteriolar electrical signaling after traumatic brain injury. Journal of Cerebral Blood Flow and Metabolism, 2021, 41, 1313-1327.	2.4	15
87	Functionally linked potassium channel activity in cerebral endothelial and smooth muscle cells is compromised in Alzheimerâ€™s disease. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	15
88	Inhibition of vascular smooth muscle inward-rectifier K⁺channels restores myogenic tone in mouse urinary bladder arterioles. American Journal of Physiology - Renal Physiology, 2017, 312, F836-F847.	1.3	13
89	TRPV4 blockade reduces voiding frequency, ATP release, and pelvic sensitivity in mice with chronic urothelial overexpression of NGF. American Journal of Physiology - Renal Physiology, 2019, 317, F1695-F1706.	1.3	13
90	The K V 7 channel activator retigabine suppresses mouse urinary bladder afferent nerve activity without affecting detrusor smooth muscle K + channel currents. Journal of Physiology, 2019, 597, 935-950.	1.3	13

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91	Lack of direct effect of adiponectin on vascular smooth muscle cell BKCa channels or Ca2+ signaling in the regulation of small artery pressure-induced constriction. Physiological Reports, 2017, 5, e13337.	0.7	12
92	Spinning Disk Confocal Microscopy of Calcium Signalling in Blood Vessel Walls. Microscopy and Analysis, 2010, 24, 5-8.	1.0	10
93	The Role of PIEZO1 in Urinary Bladder Function and Dysfunction in a Rodent Model of Cyclophosphamide-Induced Cystitis. Frontiers in Pain Research, 2021, 2, 748385.	0.9	7
94	Sarcoplasmic Reticulum and Membrane Currents. Novartis Foundation Symposium, 2008, , 189-207.	1.2	6
95	Transient receptor potential vanilloidâ€4 channels are involved in diminished myogenic tone in brain parenchymal arterioles in response to chronic hypoperfusion in mice. Acta Physiologica, 2019, 225, e13181.	1.8	6
96	A Case for Myoendothelial Gap Junctions. Circulation Research, 2000, 87, 427-428.	2.0	5
97	Location, Location, Location: Juxtaposed calcium-signaling microdomains as a novel model of the vascular smooth muscle myogenic response. Journal of General Physiology, 2015, 146, 129-132.	0.9	5
98	Impaired Cerebral Autoregulation After Subarachnoid Hemorrhage: A Quantitative Assessment Using a Mouse Model. Frontiers in Physiology, 2021, 12, 688468.	1.3	5
99	CADASIL mutations sensitize the brain to ischemia via spreading depolarizations and abnormal extracellular potassium homeostasis. Journal of Clinical Investigation, 2022, 132, .	3.9	5
100	Genetic ablation of smooth muscle K_{IR}2.1 is inconsequential to the function of mouse cerebral arteries. Journal of Cerebral Blood Flow and Metabolism, 2022, 42, 1693-1706.	2.4	5
101	Piezo1 is a mechanosensor channel in CNS capillaries. Journal of General Physiology, 2022, 154, .	0.9	4
102	Functional evidence of TRPV4â€mediated Ca 2+ signals in cortical astrocytes. FASEB Journal, 2011, 25, 1024.23.	0.2	1
103	Orchestrating Ca2+ influx through CaV1.2 and CaV3.x channels in human cerebral arteries. Journal of General Physiology, 2015, 145, 481-483.	0.9	0
104	â€œA Step and a Ceilingâ€ mechanical properties of Ca ²⁺ spark vasoregulation in resistance arteries by pressureâ€induced oxidative activation of PKG. Physiological Reports, 2019, 7, e14260.	0.7	0
105	TRPA1 channel: New kid in the â€˜neurovascular couplingâ€™ town. Cell Calcium, 2021, 96, 102407.	1.1	0
106	SK channels are involved in the stimulation of intracellular Ca 2+ signals by reactive oxygen species (ROS) in intact endothelium. FASEB Journal, 2006, 20, A1164.	0.2	0
107	Basal and AChâ€stimulated intracellular Ca ²⁺ signals in intact endothelium originate from IP ₃ â€sensitive stores. FASEB Journal, 2007, 21, A861.	0.2	0
108	Ca 2+ pulsars: spatially restricted, IP 3 Râ€mediated Ca 2+ release important for endothelial function. FASEB Journal, 2008, 22, 1181.18.	0.2	0

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109	Decreased frequency of transient outward BK currents in cerebral myocytes following subarachnoid hemorrhage. FASEB Journal, 2008, 22, 965.18.	0.2	0
110	Nerveâ€induced smooth muscle to endothelium signaling in small resistance arteries. FASEB Journal, 2010, 24, 598.7.	0.2	0
111	High intravascular pressure decreases endothelial Ca 2+ pulsars and impairs endotheliumâ€dependent vasodilation in mouse mesenteric arteries. FASEB Journal, 2010, 24, 956.6.	0.2	0
112	Role of ryanodine receptors in acidic pHâ€induced dilation of brain parenchymal arterioles. FASEB Journal, 2011, 25, 1024.15.	0.2	0
113	Elementary TRPV4 Ca ²⁺ events in intact vascular endothelium. FASEB Journal, 2011, 25, 1082.1.	0.2	0
114	Fundamental Change in Neurovascular Coupling after Subarachnoid Hemorrhage. FASEB Journal, 2011, 25, 1021.9.	0.2	0
115	Profound decrease in myogenic tone of parenchymal arterioles in a genetic model of cerebral ischemic small vessel disease. FASEB Journal, 2012, 26, 685.6.	0.2	0
116	Prostaglandin E 2 , a postulated astrocyteâ€derived neurovascular coupling agent, constricts rather than dilates parenchymal arterioles. FASEB Journal, 2013, 27, .	0.2	0
117	Critical role of Kv channels in cerebrovascular dysfunction associated with ischemic small vessel disease in a mouse genetic model. FASEB Journal, 2013, 27, 925.7.	0.2	0
118	Loss of parenchymal arteriolar dilation to K + contributes to impaired neurovascular coupling in chronic angiotensin II hypertension. FASEB Journal, 2013, 27, 1186.8.	0.2	0
119	Impairment of Neurovascular Coupling by Chronic Stress. FASEB Journal, 2013, 27, 925.9.	0.2	0
120	Calciumâ€sensitive potassium channels are not involved in the decreased myogenic tone of posterior cerebral arteries in a genetic model of cerebral ischemic small vessel disease. FASEB Journal, 2013, 27, lb671.	0.2	0
121	CEREBRAL VASCULAR DYSFUNCTION FOLLOWING TRAUMATIC BRAIN INJURY. FASEB Journal, 2013, 27, 875.6.	0.2	0
122	Increased endothelial calcium signals in cerebral vessels following traumatic brain injury. FASEB Journal, 2013, 27, 875.9.	0.2	0
123	In vivo and ex vivo dysfunction of neurovascular coupling in a mouse model of subarachnoid hemorrhage (676.3). FASEB Journal, 2014, 28, 676.3.	0.2	0
124	Disruption Of Astrocytic Calcium Signaling During Neurovascular Coupling In A Genetic Model Of Small Vessel Disease. FASEB Journal, 2015, 29, 832.6.	0.2	0
125	Ca 2+ Dynamics and Contraction of Junctional Pericytes in the Retinal Vasculature. FASEB Journal, 2015, 29, 790.1.	0.2	0
126	Afferent Activity is Greatly Increased by Spontaneous Phasic Contractions in Mouse Ex Vivo Urinary Bladder. FASEB Journal, 2015, 29, .	0.2	0

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127	Junctional Pericytes Serve as Directional Control Elements in K + â€mediated Functional Hyperemia. FASEB Journal, 2018, 32, 843.23.	0.2	0
128	Knockout of Vascular Smooth Muscle Inwardâ€Rectifier K + Channels Causes Symptoms of Overactive Bladder in Mice. FASEB Journal, 2018, 32, 770.3.	0.2	0
129	An In Situ Kidney Slice Model for Studying Angiotensin IIâ€•and TRPC5â€Mediated Calcium Signaling. FASEB Journal, 2018, 32, 721.2.	0.2	0
130	Enhanced vascular contractility following secondhand smoke exposure: a pathological â€˜double-hitâ€™ to critical smooth muscle ion channels. Function, 2022, 3, zqab061.	1.1	0