Michael D Cahalan

List of Publications by Year
in descending order

132 papers	21,465 citations	14614 66 h-index	16127 124 g-index
143 all docs	143 docs citations	143 times ranked	15964 citing authors

#	Article	IF	Citations
1	The P522R protective variant of PLCG2 promotes the expression of antigen presentation genes by human microglia in an Alzheimer's disease mouse model. Alzheimer's and Dementia, 2022, 18, 1765-1778.	0.4	19
2	TREM2 regulates purinergic receptor-mediated calcium signaling and motility in human iPSC-derived microglia. ELife, 2022, 11, .	2.8	31
3	Early stress-induced impaired microglial pruning of excitatory synapses on immature CRH-expressing neurons provokes aberrant adult stress responses. Cell Reports, 2022, 38, 110600.	2.9	63
4	Voltage-gated Ca ²⁺ channel proteins do not function as ion channels in T cells. Science Signaling, 2022, 15, .	1.6	1
5	Mechanically activated ion channel Piezo1 modulates macrophage polarization and stiffness sensing. Nature Communications, 2021, 12, 3256.	5.8	176
6	Piezo1 channels restrain regulatory T cells but are dispensable for effector CD4 ⁺ T cell responses. Science Advances, 2021, 7, .	4.7	45
7	Ion channel mediated mechanotransduction in immune cells. Current Opinion in Solid State and Materials Science, 2021, 25, 100951.	5.6	7
8	Calcium Imaging in T Lymphocytes: a Protocol for Use with Genetically Encoded or Chemical Ca2+ Indicators. Bio-protocol, 2021, 11, e4170.	0.2	1
9	Biotin Supplementation Ameliorates Murine Colitis by Preventing NF-ÎºB Activation. Cellular and Molecular Gastroenterology and Hepatology, 2020, 9, 557-567.	2.3	30
10	Regulatory T cells suppress Th17 cell Ca ²⁺ signaling in the spinal cord during murine autoimmune neuroinflammation. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 20088-20099.	3.3	34
11	Gene expression and functional deficits underlie TREM2-knockout microglia responses in human models of Alzheimerâ€™s disease. Nature Communications, 2020, 11, 5370.	5.8	160
12	Calcium Dynamics in Astrocytes During Cell Injury. Frontiers in Bioengineering and Biotechnology, 2020, 8, 912.	2.0	16
13	Regulatory T cells promote remyelination in the murine experimental autoimmune encephalomyelitis model of multiple sclerosis following human neural stem cell transplant. Neurobiology of Disease, 2020, 140, 104868.	2.1	40
14	Cell-wide mapping of Orai1 channel activity reveals functional heterogeneity in STIM1-Orai1 puncta. Journal of General Physiology, 2020, 152, .	0.9	7
15	Cxcl17 -/- mice develop exacerbated disease in a T cell-dependent autoimmune model. Journal of Leukocyte Biology, 2019, 105, 1027-1039.	1.5	14
16	iPSC-Derived Human Microglia-like Cells to Study Neurological Diseases. Neuron, 2017, 94, 278-293.e9.	3.8	730
17	T-cell calcium dynamics visualized in a ratiometric tdTomato-GCaMP6f transgenic reporter mouse. ELife, 2017, 6, .	2.8	51
18	Intermittent Ca2+ signals mediated by Orai1 regulate basal T cell motility. ELife, 2017, 6, .	2.8	31

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19	Dynamics of Regulatory T Cell-Mediated Control ofÂAntigen Responses and Autoimmune Neuroinflammation. Journal of Allergy and Clinical Immunology, 2016, 137, AB269.	1.5	0
20	Genetically targeted single-channel optical recording reveals multiple Orai1 gating states and oscillations in calcium influx. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 440-445.	3.3	97
21	Two-photon Imaging of Cellular Dynamics in the Mouse Spinal Cord. Journal of Visualized Experiments, 2015, , .	0.2	4
22	Imaging regulatory T cell dynamics and CTLA4-mediated suppression of T cell priming. Nature Communications, 2015, 6, 6219.	5.8	107
23	Molecular Biophysics of Orai Store-Operated Ca2+ Channels. Biophysical Journal, 2015, 108, 237-246.	0.2	64
24	Nanoscale patterning of STIM1 and Orai1 during store-operated Ca ²⁺ entry. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E5533-42.	3.3	55
25	Visualizing Calcium Influx through Single Orai1 Channels. Biophysical Journal, 2015, 108, 178a.	0.2	0
26	Promoting remyelination: utilizing a viral model of demyelination to assess cell-based therapies. Expert Review of Neurotherapeutics, 2014, 14, 1169-1179.	1.4	5
27	Two-photon imaging of remyelination of spinal cord axons by engrafted neural precursor cells in a viral model of multiple sclerosis. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, E2349-55.	3.3	30
28	State-dependent block of Orai3 TM1 and TM3 cysteine mutants: Insights into 2-APB activation. Journal of General Physiology, 2014, 143, 621-631.	0.9	21
29	Atomistic Molecular Dynamics Simulations of Drosophila Orai in a Hydrated Lipid Bilayer. Biophysical Journal, 2014, 106, 316a.	0.2	1
30	Intravital Imaging of the Immune System. , 2014, , 81-103.		2
31	Orai1 Function Is Essential for T Cell Homing to Lymph Nodes. Journal of Immunology, 2013, 190, 3197-3206.	0.4	24
32	Orai3 TM3 point mutation G158C alters kinetics of 2-APBâ€“induced gating by disulfide bridge formation with TM2 C101. Journal of General Physiology, 2013, 142, 405-412.	0.9	19
33	Three Phases of CD8 T Cell Response in the Lung Following H1N1 Influenza Infection and Sphingosine 1 Phosphate Agonist Therapy. PLoS ONE, 2013, 8, e58033.	1.1	32
34	Toll-like receptor 4-activated B cells out-compete Toll-like receptor 9-activated B cells to establish peripheral immunological tolerance. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, E1258-66.	3.3	14
35	Bayesian Spatio-Dynamic Modeling in Cell Motility Studies: Learning Nonlinear Taxic Fields Guiding the Immune Response. Journal of the American Statistical Association, 2012, 107, 855-865.	1.8	7
36	A Decade of Imaging Cellular Motility and Interaction Dynamics in the Immune System. Science, 2012, 336, 1676-1681.	6.0	371

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37	Analysis of transient migration behavior of natural killer cells imaged in situ and in vitro. Integrative Biology (United Kingdom), 2011, 3, 770.	0.6	35
38	Immunoimaging: Studying Immune System Dynamics Using Two-Photon Microscopy. Cold Spring Harbor Protocols, 2011, 2011, pdb.top99.	0.2	21
39	Subunit stoichiometry of human Orai1 and Orai3 channels in closed and open states. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 17832-17837.	3.3	88
40	Mutations in Orai1 transmembrane segment 1 cause STIM1-independent activation of Orai1 channels at glycine 98 and channel closure at arginine 91. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 17838-17843.	3.3	92
41	Protein Kinase D Orchestrates the Activation of DRAK2 in Response to TCR-Induced Ca2+ Influx and Mitochondrial Reactive Oxygen Generation. Journal of Immunology, 2011, 186, 940-950.	0.4	20
42	CD95 triggers Orai1-mediated localized Ca²⁺entry, regulates recruitment of protein kinase C (PKC) Î²2, and prevents death-inducing signaling complex formation. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 19072-19077.	3.3	52
43	Imaging transplant rejection: a new view. Nature Medicine, 2011, 17, 662-663.	15.2	9
44	The Immunological Synapse: a Dynamic Platform for Local Signaling. Journal of Clinical Immunology, 2010, 30, 364-372.	2.0	37
45	Mzb1 Protein Regulates Calcium Homeostasis, Antibody Secretion, and Integrin Activation in Innate-like B Cells. Immunity, 2010, 33, 723-735.	6.6	92
46	NK Cell Patrolling and Elimination of Donor-Derived Dendritic Cells Favor Indirect Alloreactivity. Journal of Immunology, 2010, 184, 2329-2336.	0.4	68
47	Selective and site-specific mobilization of dermal dendritic cells and Langerhans cells by Th1- and Th2-polarizing adjuvants. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 8334-8339.	3.3	70
48	Illuminating intranodal natural killer cell behaviour using two-photon microscopy. , 2010, , 229-237.		0
49	How to STIMulate Calcium Channels. Science, 2010, 330, 43-44.	6.0	20
50	A Functional Single-Nucleotide Polymorphism in theTRPC6Gene Promoter Associated With Idiopathic Pulmonary Arterial Hypertension. Circulation, 2009, 119, 2313-2322.	1.6	173
51	STIMulating store-operated Ca2+ entry. Nature Cell Biology, 2009, 11, 669-677.	4.6	397
52	The functional network of ion channels in T lymphocytes. Immunological Reviews, 2009, 231, 59-87.	2.8	507
53	Stim-regulated Assembly And Stoichiometry Of The CRAC Channel Subunit Orai. Biophysical Journal, 2009, 96, 561a.	0.2	0
54	Soluble Î²-amyloid oligomers alter biophysical properties of Kv1.3 channels. Biophysical Journal, 2009, 96, 482a-483a.	0.2	0

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55	The CRAC channel consists of a tetramer formed by Stim-induced dimerization of Orai dimers. Nature, 2008, 456, 116-120.	13.7	354
56	Imaging of Effector Memory T Cells during a Delayed-Type Hypersensitivity Reaction and Suppression by Kv1.3 Channel Block. Immunity, 2008, 29, 602-614.	6.6	197
57	Orai1 and STIM1 move to the immunological synapse and are up-regulated during T cell activation. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 2011-2016.	3.3	231
58	Choreography of Cell Motility and Interaction Dynamics Imaged by Two-Photon Microscopy in Lymphoid Organs. Annual Review of Immunology, 2008, 26, 585-626.	9.5	288
59	Store-dependent and -independent Modes Regulating Ca2+ Release-activated Ca2+ Channel Activity of Human Orai1 and Orai3. Journal of Biological Chemistry, 2008, 283, 17662-17671.	1.6	167
60	Quantum Dots for Tracking Dendritic Cells and Priming an Immune Response In Vitro and In Vivo. PLoS ONE, 2008, 3, e3290.	1.1	65
61	Natural killer cells actively patrol peripheral lymph nodes forming stable conjugates to eliminate MHC-mismatched targets. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 12081-12086.	3.3	83
62	Class IA Phosphoinositide 3-Kinase Modulates Basal Lymphocyte Motility in the Lymph Node. Journal of Immunology, 2007, 179, 2261-2269.	0.4	39
63	Ca2+ Signals in CD4+ T Cells during Early Contacts with Antigen-Bearing Dendritic Cells in Lymph Node. Journal of Immunology, 2007, 179, 1586-1594.	0.4	83
64	Dissection and 2-Photon Imaging of Peripheral Lymph Nodes in Mice. Journal of Visualized Experiments, 2007, , 265.	0.2	15
65	Molecular basis of the CRAC channel. Cell Calcium, 2007, 42, 133-144.	1.1	143
66	Live imaging of effector memory T cells at a site of inflammation â€“a Kv1.3 blocker suppresses T cell motility. FASEB Journal, 2007, 21, A770.	0.2	0
67	Enhancement of capillary leakage and restoration of lymphocyte egress by a chiral S1P1 antagonist in vivo. , 2006, 2, 434-441.		365
68	The sense of place in the immune system. Nature Immunology, 2006, 7, 329-332.	7.0	30
69	Molecular identification of the CRAC channel by altered ion selectivity in a mutant of Orai. Nature, 2006, 443, 226-229.	13.7	737
70	Imaging the choreography of lymphocyte trafficking and the immune response. Current Opinion in Immunology, 2006, 18, 476-482.	2.4	58
71	Genome-wide RNAi screen of Ca2+ influx identifies genes that regulate Ca2+ release-activated Ca2+ channel activity. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 9357-9362.	3.3	802
72	STOP! In the name of positive selection. Nature Immunology, 2005, 6, 126-128.	7.0	3

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73	Sphingosine 1-phosphate type 1 receptor agonism inhibits transendothelial migration of medullary T cells to lymphatic sinuses. Nature Immunology, 2005, 6, 1228-1235.	7.0	264
74	STIM1 is a Ca2+ sensor that activates CRAC channels and migrates from the Ca2+ store to the plasma membrane. Nature, 2005, 437, 902-905.	13.7	1,250
75	Antigen-Engaged B Cells Undergo Chemotaxis toward the T Zone and Form Motile Conjugates with Helper T Cells. PLoS Biology, 2005, 3, e150.	2.6	495
76	Channel Function Is Dissociated from the Intrinsic Kinase Activity and Autophosphorylation of TRPM7/ChaK1. Journal of Biological Chemistry, 2005, 280, 20793-20803.	1.6	168
77	Charge Screening by Internal pH and Polyvalent Cations as a Mechanism for Activation, Inhibition, and Rundown of TRPM7/MIC Channels. Journal of General Physiology, 2005, 126, 499-514.	0.9	117
78	In situ characterization of CD4+ T cell behavior in mucosal and systemic lymphoid tissues during the induction of oral priming and tolerance. Journal of Experimental Medicine, 2005, 201, 1815-1823.	4.2	147
79	STIM1, an essential and conserved component of store-operated Ca2+ channel function. Journal of Cell Biology, 2005, 169, 435-445.	2.3	1,638
80	Close encounters of the first and second kind: Tâ€“DC and Tâ€“B interactions in the lymph node. Seminars in Immunology, 2005, 17, 442-451.	2.7	51
81	T cell repertoire scanning is promoted by dynamic dendritic cell behavior and random T cell motility in the lymph node. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 998-1003.	3.3	409
82	A Store-operated Calcium Channel in Drosophila S2 Cells. Journal of General Physiology, 2004, 123, 167-182.	0.9	72
83	SK3-1C, a Dominant-negative Suppressor of SKCa and IKCa Channels. Journal of Biological Chemistry, 2004, 279, 6893-6904.	1.6	34
84	Imaging the Single Cell Dynamics of CD4+ T Cell Activation by Dendritic Cells in Lymph Nodes. Journal of Experimental Medicine, 2004, 200, 847-856.	4.2	530
85	K+ channels as targets for specific immunomodulation. Trends in Pharmacological Sciences, 2004, 25, 280-289.	4.0	404
86	A stochastic view of lymphocyte motility and trafficking within the lymph node. Immunological Reviews, 2003, 195, 136-159.	2.8	108
87	Real-time imaging of lymphocytes in vivo. Current Opinion in Immunology, 2003, 15, 372-377.	2.4	83
88	Regulation of membrane trafficking and subcellular organization of endocytic compartments revealed with FM1-43 in resting and activated human T cells. Experimental Cell Research, 2003, 291, 150-166.	1.2	81
89	MIC Channels Are Inhibited by Internal Divalent Cations but Not ATP. Biophysical Journal, 2003, 84, 922-927.	0.2	115
90	Polyvalent Cations as Permeant Probes of MIC and TRPM7 Pores. Biophysical Journal, 2003, 84, 2293-2305.	0.2	105

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91	A Novel Fluorescent Toxin to Detect and Investigate Kv1.3 Channel Up-regulation in Chronically Activated T Lymphocytes. Journal of Biological Chemistry, 2003, 278, 9928-9937.	1.6	80
92	Autonomous T cell trafficking examined in vivo with intravital two-photon microscopy. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 2604-2609.	3.3	497
93	Modulation of Mouse Paneth Cell Î±-Defensin Secretion by mIKCa1, a Ca2+-activated, Intermediate Conductance Potassium Channel. Journal of Biological Chemistry, 2002, 277, 3793-3800.	1.6	90
94	Distinct Properties of CRAC and MIC Channels in RBL Cells. Journal of General Physiology, 2002, 120, 221-235.	0.9	171
95	Two-Photon Imaging of Lymphocyte Motility and Antigen Response in Intact Lymph Node. Science, 2002, 296, 1869-1873.	6.0	1,174
96	The ins and outs of polycystin-2 as a calcium release channel. Nature Cell Biology, 2002, 4, E56-E57.	4.6	10
97	Two-photon tissue imaging: seeing the immune system in a fresh light. Nature Reviews Immunology, 2002, 2, 872-880.	10.6	495
98	Two-Photon imaging in Intact Lymphoid Tissue. Advances in Experimental Medicine and Biology, 2002, 512, 203-208.	0.8	27
99	Potassium channels in T lymphocytes: toxins to therapeutic immunosuppressants. Toxicon, 2001, 39, 1269-1276.	0.8	66
100	Calcium-activated Potassium Channels Sustain Calcium Signaling in T Lymphocytes. Journal of Biological Chemistry, 2001, 276, 12249-12256.	1.6	155
101	Design and Characterization of a Highly Selective Peptide Inhibitor of the Small Conductance Calcium-activated K+Channel, SkCa2. Journal of Biological Chemistry, 2001, 276, 43145-43151.	1.6	106
102	Molecular properties and physiological roles of ion channels in the immune system. Journal of Clinical Immunology, 2001, 21, 235-252.	2.0	212
103	Channels as enzymes. Nature, 2001, 411, 542-543.	13.7	40
104	Nuclear Localization and Dominant-negative Suppression by a Mutant SKCa3 N-terminal Channel Fragment Identified in a Patient with Schizophrenia. Journal of Biological Chemistry, 2001, 276, 27753-27756.	1.6	51
105	Delineation of the Clotrimazole/TRAM-34 Binding Site on the Intermediate Conductance Calcium-activated Potassium Channel, IKCa1. Journal of Biological Chemistry, 2001, 276, 32040-32045.	1.6	128
106	Perillyl Alcohol Inhibits TCR-Mediated [Ca2+]i Signaling, Alters Cell Shape and Motility, and Induces Apoptosis in T Lymphocytes. Cellular Immunology, 2000, 201, 6-13.	1.4	19
107	Differential Ca2+ Influx, KCa Channel Activity, and Ca2+ Clearance Distinguish Th1 and Th2 Lymphocytes. Journal of Immunology, 2000, 164, 1153-1160.	0.4	98
108	Up-regulation of the IKCa1 Potassium Channel during T-cell Activation. Journal of Biological Chemistry, 2000, 275, 37137-37149.	1.6	357

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109	Vanadate Induces Calcium Signaling, Ca2+ Release-Activated Ca2+ Channel Activation, and Gene Expression in T Lymphocytes and RBL-2H3 Mast Cells Via Thiol Oxidation. Journal of Immunology, 2000, 164, 679-687.	0.4	33
110	Structure-guided Transformation of Charybdotoxin Yields an Analog That Selectively Targets Ca2+-activated over Voltage-gated K+ Channels. Journal of Biological Chemistry, 2000, 275, 1201-1208.	1.6	94
111	Single Channel Properties and Regulated Expression of Ca2+ Release-Activated Ca2+ (Crac) Channels in Human T Cells. Journal of Cell Biology, 2000, 150, 1435-1444.	2.3	88
112	Capacitative Calcium Entry Deficits and Elevated Luminal Calcium Content in Mutant Presenilin-1 Knockin Mice. Journal of Cell Biology, 2000, 149, 793-798.	2.3	313
113	Calmodulin Mediates Calcium-dependent Activation of the Intermediate Conductance KCa Channel,IKCa1. Journal of Biological Chemistry, 1999, 274, 5746-5754.	1.6	277
114	Structural Conservation of the Pores of Calcium-activated and Voltage-gated Potassium Channels Determined by a Sea Anemone Toxin. Journal of Biological Chemistry, 1999, 274, 21885-21892.	1.6	119
115	UK-78,282, a novel piperidine compound that potently blocks the Kv1.3 voltage-gated potassium channel and inhibits human T cell activation. British Journal of Pharmacology, 1999, 126, 1707-1716.	2.7	57
116	Single-Channel Recording of a Store-Operated Ca2+ Channel in Jurkat T Lymphocytes. Science, 1999, 283, 836-839.	6.0	136
117	A Nongenomic Mechanism for Progesterone-mediated Immunosuppression: Inhibition of K+ Channels, Ca2+ Signaling, and Gene Expression in T Lymphocytes. Journal of Experimental Medicine, 1998, 188, 1593-1602.	4.2	153
118	Genomic Organization, Chromosomal Localization, Tissue Distribution, and Biophysical Characterization of a Novel MammalianShaker-related Voltage-gated Potassium Channel, Kv1.7. Journal of Biological Chemistry, 1998, 273, 5851-5857.	1.6	71
119	Monovalent Permeability, Rectification, and Ionic Block of Store-operated Calcium Channels in Jurkat T Lymphocytes. Journal of General Physiology, 1998, 111, 521-537.	0.9	87
120	ShK-Dap22, a Potent Kv1.3-specific Immunosuppressive Polypeptide. Journal of Biological Chemistry, 1998, 273, 32697-32707.	1.6	222
121	Dynamics of ATP-induced Calcium Signaling in Single Mouse Thymocytes. Journal of Cell Biology, 1997, 138, 987-998.	2.3	46
122	A Mysterious Channel: Properties of the Capacitive Ca²⁺ Channel in Lymphocytes. Cellular Physiology and Biochemistry, 1997, 7, 219-228.	1.1	2
123	Volume-Regulated Anion Channels and the Control of a Simple Cell Behavior. Cellular Physiology and Biochemistry, 1997, 7, 229-241.	1.1	14
124	Ion channels in the immune system as targets for immunosuppression. Current Opinion in Biotechnology, 1997, 8, 749-756.	3.3	144
125	Polarity of T Cell Shape, Motility, and Sensitivity to Antigen. Immunity, 1996, 4, 421-430.	6.6	412
126	Potassium and Calcium Channels in Lymphocytes. Annual Review of Immunology, 1995, 13, 623-653.	9.5	449

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127	[1] Patch clamp techniques: An overview. Methods in Enzymology, 1992, 207, 3-14.	0.4	48
128	Cell-to-cell spread of calcium signals mediated by ATP receptors in mast cells. Nature, 1992, 359, 241-244.	13.7	368
129	Autoimmune diseases linked to abnormal K+ channel expression in double-negative CD4â˜'CD8â˜' T cells. European Journal of Immunology, 1990, 20, 747-751.	1.6	20
130	The plasticity of ion channels: parallels between the nervous and immune systems. Trends in Neurosciences, 1988, 11, 214-218.	4.2	82
131	Voltage-gated K+ channels in human T lymphocytes: a role in mitogenesis?. Nature, 1984, 307, 465-468.	13.7	720
132	Chemical Modification of Potassium Channels in Myelinated Nerve Fibers. Biophysical Journal, 1984, 45, 62-64.	0.2	9