

Frank Zufall

List of Publications by Year in descending order

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115
papers

9,916
citations

31976

53
h-index

36028

97
g-index

121
all docs

121
docs citations

121
times ranked

5804
citing authors

#	ARTICLE	IF	CITATIONS
1	Ultrasensitive pheromone detection by mammalian vomeronasal neurons. <i>Nature</i> , 2000, 405, 792-796.	27.8	557
2	MHC Class I Peptides as Chemosensory Signals in the Vomeronasal Organ. <i>Science</i> , 2004, 306, 1033-1037.	12.6	546
3	Altered sexual and social behaviors in <i>trp2</i> mutant mice. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002, 99, 6376-6381.	7.1	516
4	Pheromonal communication in vertebrates. <i>Nature</i> , 2006, 444, 308-315.	27.8	414
5	Deficient pheromone responses in mice lacking a cluster of vomeronasal receptor genes. <i>Nature</i> , 2002, 419, 70-74.	27.8	338
6	A Contextual Model for Axonal Sorting into Glomeruli in the Mouse Olfactory System. <i>Cell</i> , 2004, 117, 817-831.	28.9	298
7	A Diacylglycerol-Gated Cation Channel in Vomeronasal Neuron Dendrites Is Impaired in TRPC2 Mutant Mice. <i>Neuron</i> , 2003, 40, 551-561.	8.1	295
8	Essential Role of the Main Olfactory System in Social Recognition of Major Histocompatibility Complex Peptide Ligands. <i>Journal of Neuroscience</i> , 2006, 26, 1961-1970.	3.6	275
9	Loss-of-function mutations in sodium channel Nav1.7 cause anosmia. <i>Nature</i> , 2011, 472, 186-190.	27.8	267
10	Subsystem Organization of the Mammalian Sense of Smell. <i>Annual Review of Physiology</i> , 2009, 71, 115-140.	13.1	263
11	The Cellular and Molecular Basis of Odor Adaptation. <i>Chemical Senses</i> , 2000, 25, 473-481.	2.0	260
12	Retinal ganglion cells express a cGMP-gated cation conductance activatable by nitric oxide donors. <i>Neuron</i> , 1994, 12, 155-165.	8.1	237
13	Contribution of the receptor guanylyl cyclase GC-D to chemosensory function in the olfactory epithelium. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 14507-14512.	7.1	199
14	Cyclic Nucleotide-Gated Ion Channels and Sensory Transduction in Olfactory Receptor Neurons. <i>Annual Review of Biophysics and Biomolecular Structure</i> , 1994, 23, 577-607.	18.3	187
15	MHC peptides and the sensory evaluation of genotype. <i>Trends in Neurosciences</i> , 2006, 29, 100-107.	8.6	178
16	G protein G α o is essential for vomeronasal function and aggressive behavior in mice. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 12898-12903.	7.1	159
17	Single odor-sensitive channels in olfactory receptor neurons are also gated by cyclic nucleotides. <i>Journal of Neuroscience</i> , 1991, 11, 3565-3572.	3.6	152
18	An Olfactory Subsystem that Detects Carbon Disulfide and Mediates Food-Related Social Learning. <i>Current Biology</i> , 2010, 20, 1438-1444.	3.9	151

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19	Calcium Entry through Cyclic Nucleotide-Gated Channels in Individual Cilia of Olfactory Receptor Cells: Spatiotemporal Dynamics. <i>Journal of Neuroscience</i> , 1997, 17, 4136-4148.	3.6	146
20	Imaging Odor-Induced Calcium Transients in Single Olfactory Cilia: Specificity of Activation and Role in Transduction. <i>Journal of Neuroscience</i> , 1998, 18, 5630-5639.	3.6	144
21	Innate Predator Odor Aversion Driven by Parallel Olfactory Subsystems that Converge in the Ventromedial Hypothalamus. <i>Current Biology</i> , 2015, 25, 1340-1346.	3.9	138
22	From genes to social communication: molecular sensing by the vomeronasal organ. <i>Trends in Neurosciences</i> , 2012, 35, 597-606.	8.6	136
23	Central Role of the CNGA4 Channel Subunit in Ca ²⁺ -Calmodulin-Dependent Odor Adaptation. <i>Science</i> , 2001, 294, 2172-2175.	12.6	124
24	Social motivation is reduced in vasopressin 1b receptor null mice despite normal performance in an olfactory discrimination task. <i>Hormones and Behavior</i> , 2004, 46, 638-645.	2.1	123
25	Signaling in the Chemosensory Systems. <i>Cellular and Molecular Life Sciences</i> , 2006, 63, 1476-1484.	5.4	120
26	Structural requirements for the activation of vomeronasal sensory neurons by MHC peptides. <i>Nature Neuroscience</i> , 2009, 12, 1551-1558.	14.8	120
27	Divalent cations block the cyclic nucleotide-gated channel of olfactory receptor neurons. <i>Journal of Neurophysiology</i> , 1993, 69, 1758-1768.	1.8	111
28	Rat hippocampal neurons express genes for both rod retinal and olfactory cyclic nucleotide-gated channels: novel targets for cAMP/cGMP function.. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1996, 93, 10440-10445.	7.1	110
29	Cyclic nucleotide gated channels as regulators of CNS development and plasticity. <i>Current Opinion in Neurobiology</i> , 1997, 7, 404-412.	4.2	108
30	Pheromonal recognition memory induced by TRPC2-independent vomeronasal sensing. <i>European Journal of Neuroscience</i> , 2006, 23, 3385-3390.	2.6	107
31	Inhibition of the olfactory cyclic nucleotide gated ion channel by intracellular calcium. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 1991, 246, 225-230.	2.6	102
32	Dual activation of a sex pheromone-dependent ion channel from insect olfactory dendrites by protein kinase C activators and cyclic GMP.. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1991, 88, 8520-8524.	7.1	99
33	Identification of a Long-Lasting Form of Odor Adaptation that Depends on the Carbon Monoxide/cGMP SecondMessenger System. <i>Journal of Neuroscience</i> , 1997, 17, 2703-2712.	3.6	97
34	A calcium-permeable cGMP-activated cation conductance in hippocampal neurons. <i>NeuroReport</i> , 1995, 6, 1761-1765.	1.2	88
35	Recognition of Bacterial Signal Peptides by Mammalian Formyl Peptide Receptors. <i>Journal of Biological Chemistry</i> , 2015, 290, 7369-7387.	3.4	85
36	Mammalian pheromone sensing. <i>Current Opinion in Neurobiology</i> , 2007, 17, 483-489.	4.2	84

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37	Impaired Odor Adaptation in Olfactory Receptor Neurons after Inhibition of Ca ²⁺ /Calmodulin Kinase II. <i>Journal of Neuroscience</i> , 1999, 19, RC19-RC19.	3.6	82
38	Mouse urinary peptides provide a molecular basis for genotype discrimination by nasal sensory neurons. <i>Nature Communications</i> , 2013, 4, 1616.	12.8	81
39	A Family of Nonclassical Class I MHC Genes Contributes to Ultrasensitive Chemodetection by Mouse Vomeronasal Sensory Neurons. <i>Journal of Neuroscience</i> , 2014, 34, 5121-5133.	3.6	79
40	Regulation of cyclic nucleotide-gated channels and membrane excitability in olfactory receptor cells by carbon monoxide. <i>Journal of Neurophysiology</i> , 1995, 74, 1498-1508.	1.8	75
41	Amplification of Odor-Induced Ca ²⁺ Transients by Store-Operated Ca ²⁺ Release and Its Role in Olfactory Signal Transduction. <i>Journal of Neurophysiology</i> , 2000, 83, 501-512.	1.8	75
42	Spectral and polarized light sensitivity of photoreceptors in the compound eye of the cricket (<i>Gryllus</i>). <i>Journal of Neurophysiology</i> , 1989, 164, 597-608.	1.6	70
43	Neurobiology of TRPC2: from gene to behavior. <i>Pflügers Archiv European Journal of Physiology</i> , 2005, 451, 61-71.	2.8	70
44	Newborn Interneurons in the Accessory Olfactory Bulb Promote Mate Recognition in Female Mice. <i>Frontiers in Neuroscience</i> , 2011, 5, 113.	2.8	65
45	A calcium optimum for cytotoxic T lymphocyte and natural killer cell cytotoxicity. <i>Journal of Physiology</i> , 2018, 596, 2681-2698.	2.9	64
46	Ionic currents of cultured olfactory receptor neurons from antennae of male <i>Manduca sexta</i> . <i>Journal of Neuroscience</i> , 1991, 11, 956-965.	3.6	63
47	Blocking Adenylyl Cyclase Inhibits Olfactory Generator Currents Induced by α 2-P3-Odors. <i>Journal of Neurophysiology</i> , 2000, 84, 575-580.	1.8	63
48	Pheromone detection by mammalian vomeronasal neurons. <i>Microscopy Research and Technique</i> , 2002, 58, 251.	2.2	63
49	Importance of the CNGA4 channel gene for odor discrimination and adaptation in behaving mice. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2003, 100, 4299-4304.	7.1	63
50	Chemosensory Cell-Derived Acetylcholine Drives Tracheal Mucociliary Clearance in Response to Virulence-Associated Formyl Peptides. <i>Immunity</i> , 2020, 52, 683-699.e11.	14.3	63
51	Ca ²⁺ -Calmodulin Feedback Mediates Sensory Adaptation and Inhibits Pheromone-Sensitive Ion Channels in the Vomeronasal Organ. <i>Journal of Neuroscience</i> , 2009, 29, 2125-2135.	3.6	60
52	Block of cyclic nucleotide-gated channels in salamander olfactory receptor neurons by the guanylyl cyclase inhibitor LY83583. <i>Journal of Neurophysiology</i> , 1995, 74, 2759-2762.	1.8	58
53	Receptor guanylyl cyclases in mammalian olfactory function. <i>Molecular and Cellular Biochemistry</i> , 2010, 334, 191-197.	3.1	56
54	A wide range of pheromone-stimulated sexual and reproductive behaviors in female mice depend on G protein. <i>BMC Biology</i> , 2014, 12, 31.	3.8	56

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55	Ca ²⁺ Extrusion by NCX Is Compromised in Olfactory Sensory Neurons of OMP ^{+/+} Mice. PLoS ONE, 2009, 4, e4260.	2.5	55
56	A simple, economic, time-resolved killing assay. European Journal of Immunology, 2014, 44, 1870-1872.	2.9	55
57	Olfactory receptor neurons from antennae of developing male <i>Manduca sexta</i> respond to components of the species-specific sex pheromone in vitro. Journal of Neuroscience, 1992, 12, 2523-2531.	3.6	54
58	Grueneberg Ganglion Neurons Are Finely Tuned Cold Sensors. Journal of Neuroscience, 2010, 30, 7563-7568.	3.6	54
59	Mapping protein interactions of sodium channel Na ^v 1.7 using epitope-tagged gene-targeted mice. EMBO Journal, 2018, 37, 427-445.	7.8	54
60	Formyl Peptide Receptors from Immune and Vomeronasal System Exhibit Distinct Agonist Properties. Journal of Biological Chemistry, 2012, 287, 33644-33655.	3.4	51
61	Central role of G protein G α 12 and G α 12 ⁺ vomeronasal neurons in balancing territorial and infant-directed aggression of male mice. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 5135-5143.	7.1	51
62	Widespread expression of olfactory cyclic nucleotide-gated channel genes in rat brain: Implications for neuronal signalling. , 1999, 32, 1-12.		50
63	PhoDAGs Enable Optical Control of Diacylglycerol-Sensitive Transient Receptor Potential Channels. Cell Chemical Biology, 2018, 25, 215-223.e3.	5.2	47
64	A Sensor for Low Environmental Oxygen in the Mouse Main Olfactory Epithelium. Neuron, 2016, 92, 1196-1203.	8.1	45
65	The Receptor Guanylyl Cyclase Type D (GC-D) Ligand Uroguanylin Promotes the Acquisition of Food Preferences in Mice. Chemical Senses, 2013, 38, 391-397.	2.0	43
66	Pregnancy and estrogen enhance neural progenitor-cell proliferation in the vomeronasal sensory epithelium. BMC Biology, 2015, 13, 104.	3.8	42
67	A central mechanism of analgesia in mice and humans lacking the sodium channel NaV1.7. Neuron, 2021, 109, 1497-1512.e6.	8.1	42
68	Patch-Clamp Analysis of Gene-Targeted Vomeronasal Neurons Expressing a Defined V1r or V2r Receptor: Ionic Mechanisms Underlying Persistent Firing. Journal of Neurophysiology, 2007, 98, 2357-2369.	1.8	38
69	Strain-specific Loss of Formyl Peptide Receptor 3 in the Murine Vomeronasal and Immune Systems. Journal of Biological Chemistry, 2016, 291, 9762-9775.	3.4	38
70	Acetylcholine activates a chloride channel as well as glutamate and GABA. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 1988, 163, 609-620.	1.6	37
71	Modulation by cyclic GMP of the odour sensitivity of vertebrate olfactory receptor cells. Proceedings of the Royal Society B: Biological Sciences, 1996, 263, 803-811.	2.6	36
72	A Binary Genetic Approach to Characterize TRPM5 Cells in Mice. Chemical Senses, 2015, 40, 413-425.	2.0	34

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73	Mammalian-Specific OR37 Receptors Are Differentially Activated by Distinct Odorous Fatty Aldehydes. <i>Chemical Senses</i> , 2012, 37, 479-493.	2.0	33
74	The sensing of bacteria: emerging principles for the detection of signal sequences by formyl peptide receptors. <i>Biomolecular Concepts</i> , 2016, 7, 205-214.	2.2	30
75	Bacterial MgrB peptide activates chemoreceptor Fpr3 in mouse accessory olfactory system and drives avoidance behaviour. <i>Nature Communications</i> , 2019, 10, 4889.	12.8	30
76	Role of Cyclic GMP in Olfactory Transduction and Adaptation. <i>Annals of the New York Academy of Sciences</i> , 1998, 855, 199-204.	3.8	26
77	Glutamate-activated channels in adult rat ventral spinal cord cells. <i>Journal of Neurophysiology</i> , 1991, 66, 369-378.	1.8	23
78	Patch-clamp recordings of spiking and nonspiking interneurons from rabbit olfactory bulb slices: Membrane properties and ionic currents. <i>Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology</i> , 1992, 170, 145-52.	1.6	22
79	Link Between Pain and Olfaction in an Inherited Sodium Channelopathy. <i>Archives of Neurology</i> , 2012, 69, 1119-23.	4.5	22
80	Trpc5 deficiency causes hypoprolactinemia and altered function of oscillatory dopamine neurons in the arcuate nucleus. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 15236-15243.	7.1	22
81	The cyclic nucleotide gated channel of olfactory receptor neurons. <i>Seminars in Cell Biology</i> , 1994, 5, 39-46.	3.4	21
82	Similarities between the effects of lindane ($\text{I}^3\text{-HCH}$) and picrotoxin on ligand-gated chloride channels in crayfish muscle membrane. <i>Brain Research</i> , 1989, 503, 342-345.	2.2	20
83	Desensitization and resensitization rates of glutamate-activated channels may regulate motoneuron excitability. <i>Journal of Neurophysiology</i> , 1991, 66, 1166-1175.	1.8	19
84	Cyclic GMP evoked calcium transients in olfactory receptor cell growth cones. <i>NeuroReport</i> , 2000, 11, 677-681.	1.2	19
85	Patch-clamp recordings of spiking and nonspiking interneurons from rabbit olfactory bulb slices: GABA- and other transmitter receptors. <i>Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology</i> , 1992, 170, 153-9.	1.6	18
86	Trpm5 expression in the olfactory epithelium. <i>Molecular and Cellular Neurosciences</i> , 2017, 80, 75-88.	2.2	17
87	Type 3 inositol 1,4,5-trisphosphate receptor is dispensable for sensory activation of the mammalian vomeronasal organ. <i>Scientific Reports</i> , 2017, 7, 10260.	3.3	17
88	The structure of Orco and its impact on our understanding of olfaction. <i>Journal of General Physiology</i> , 2018, 150, 1602-1605.	1.9	16
89	Hypothalamic gonadotropin-releasing hormone (GnRH) receptor neurons fire in synchrony with the female reproductive cycle. <i>Journal of Neurophysiology</i> , 2015, 114, 1008-1021.	1.8	14
90	Sensory Detection by the Vomeronasal Organ Modulates Experience-Dependent Social Behaviors in Female Mice. <i>Frontiers in Cellular Neuroscience</i> , 2021, 15, 638800.	3.7	14

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91	Danger perception and stress response through an olfactory sensor for the bacterial metabolite hydrogen sulfide. <i>Neuron</i> , 2021, 109, 2469-2484.e7.	8.1	14
92	Functional Analysis of the Guanylyl Cyclase Type D Signaling System in the Olfactory Epithelium. <i>Annals of the New York Academy of Sciences</i> , 2009, 1170, 173-176.	3.8	13
93	Ca ²⁺ -activated Cl ⁻ currents in the murine vomeronasal organ enhance neuronal spiking but are dispensable for male-male aggression. <i>Journal of Biological Chemistry</i> , 2018, 293, 10392-10403.	3.4	13
94	Ca ²⁺ vomeronasal neurons govern the initial outcome of an acute social competition. <i>Scientific Reports</i> , 2020, 10, 894.	3.3	13
95	TRPs in Olfaction. <i>Handbook of Experimental Pharmacology</i> , 2014, 223, 917-933.	1.8	13
96	Functional Overexpression of Vomeronasal Receptors Using a Herpes Simplex Virus Type 1 (HSV-1)-Derived Amplicon. <i>PLoS ONE</i> , 2016, 11, e0156092.	2.5	11
97	Cyclic regulation of Trpm4 expression in female vomeronasal neurons driven by ovarian sex hormones. <i>Molecular and Cellular Neurosciences</i> , 2020, 105, 103495.	2.2	11
98	Visualizing Odor Detection in Olfactory Cilia by Calcium Imaging. <i>Annals of the New York Academy of Sciences</i> , 1998, 855, 205-207.	3.8	10
99	Altered synaptic transmission at olfactory and vomeronasal nerve terminals in mice lacking N-type calcium channel Cav2.2. <i>European Journal of Neuroscience</i> , 2014, 40, 3422-3435.	2.6	9
100	Cyclic Nucleotide-Gated Channels, Nitric Oxide, and Neural Function. <i>Neuroscientist</i> , 1996, 2, 24-32.	3.5	8
101	Organization and Plasticity of Sodium Channel Expression in the Mouse Olfactory and Vomeronasal Epithelia. <i>Frontiers in Neuroanatomy</i> , 2017, 11, 28.	1.7	7
102	BTDAzo: A Photoswitchable TRPC5 Channel Activator**. <i>Angewandte Chemie - International Edition</i> , 2022, 61, .	13.8	7
103	P/Q Type Calcium Channel Cav2.1 Defines a Unique Subset of Glomeruli in the Mouse Olfactory Bulb. <i>Frontiers in Cellular Neuroscience</i> , 2018, 12, 295.	3.7	6
104	A diacylglycerol photoswitching protocol for studying TRPC channel functions in mammalian cells and tissue slices. <i>STAR Protocols</i> , 2021, 2, 100527.	1.2	6
105	Connexins and Olfactory Synchronicity: Toward the Olfactory Code. <i>Neuron</i> , 2005, 46, 693-694.	8.1	4
106	Accessory Olfactory System. , 2008, , 783-814.		3
107	On the scent of mitochondrial calcium. <i>Nature Neuroscience</i> , 2012, 15, 653-654.	14.8	3
108	The Electrovomeronasogram: Field Potential Recordings in the Mouse Vomeronasal Organ. <i>Methods in Molecular Biology</i> , 2013, 1068, 221-236.	0.9	3

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109	Virus-Mediated Overexpression of Vomeronasal Receptors and Functional Assessment by Live-Cell Calcium Imaging. <i>Methods in Molecular Biology</i> , 2018, 1820, 43-56.	0.9	2
110	Membrane Currents and Mechanisms of Olfactory Transduction. <i>Novartis Foundation Symposium</i> , 1993, 179, 115-130.	1.1	2
111	Transduction Channels in the Vomeronasal Organ. , 2005, , 135-152.		1
112	Cyclic AMP-Gated Cation Channels of Olfactory Receptor Neurons. , 1993, 66, 135-145.		1
113	Pheromonkommunikation bei MÄusen: Vom Gen zum Verhalten. <i>E-Neuroforum</i> , 2008, 14, 159-165.	0.1	0
114	Receptor guanylyl cyclases in mammalian olfaction: from genes to function. <i>BMC Pharmacology</i> , 2009, 9, .	0.4	0
115	Formyl peptide receptors from the innate immune system and the vomeronasal organ recognize pathogen derived peptides. <i>Journal of Neuroimmunology</i> , 2014, 275, 91-92.	2.3	0