Manuela Zaccolo

List of Publications by Year
in descending order

124 papers	8,752 citations	38552 50 h-index	47439 89 g-index
134 all docs	134 docs citations	134 times ranked	8752 citing authors

#	Article	IF	Citations
1	Discrete Microdomains with High Concentration of cAMP in Stimulated Rat Neonatal Cardiac Myocytes. Science, 2002, 295, 1711-1715.	20.9	790
2	A genetically encoded, fluorescent indicator for cyclic AMP in living cells. Nature Cell Biology, 2000, 2, 25-29.	10.0	481
3	Detecting cAMPâ€induced Epac activation by fluorescence resonance energy transfer: Epac as a novel cAMP indicator. EMBO Reports, 2004, 5, 1176-1180.	5.1	410
4	Fluorescence Resonance Energy Transferâ€“Based Analysis of cAMP Dynamics in Live Neonatal Rat Cardiac Myocytes Reveals Distinct Functions of Compartmentalized Phosphodiesterases. Circulation Research, 2004, 95, 67-75.	10.7	347
5	cAMP and cGMP Signaling Cross-Talk. Circulation Research, 2007, 100, 1569-1578.	10.7	319
6	Compartmentalized Phosphodiesterase-2 Activity Blunts Î²-Adrenergic Cardiac Inotropy via an NO/cGMP-Dependent Pathway. Circulation Research, 2006, 98, 226-234.	10.7	254
7	Nitroxyl Improves Cellular Heart Function by Directly Enhancing Cardiac Sarcoplasmic Reticulum Ca 2+ Cycling. Circulation Research, 2007, 100, 96-104.	10.7	212
8	cGMP Catabolism by Phosphodiesterase 5A Regulates Cardiac Adrenergic Stimulation by NOS3-Dependent Mechanism. Circulation Research, 2005, 96, 100-109.	10.7	194
9	Spatiotemporal Coupling of cAMP Transporter to CFTR Chloride Channel Function in the Gut Epithelia. Cell, 2007, 131, 940-951.	27.8	191
10	Protein Kinase A Type I and Type II Define Distinct Intracellular Signaling Compartments. Circulation Research, 2008, 103, 836-844.	10.7	188
11	FRET biosensor uncovers cAMP nano-domains at Î²-adrenergic targets that dictate precise tuning of cardiac contractility. Nature Communications, 2017, 8, 15031.	13.2	175
12	PGE1 stimulation of HEK293 cells generates multiple contiguous domains with different [cAMP]: role of compartmentalized phosphodiesterases. Journal of Cell Biology, 2006, 175, 441-451.	5.2	172
13	AKAP complex regulates Ca ²⁺ reâ€uptake into heart sarcoplasmic reticulum. EMBO Reports, 2007, 8, 1061-1067.	5.1	169
14	cAMP signaling in subcellular compartments. , 2014, 143, 295-304.		163
15	Alcohol Disrupts Levels and Function of the Cystic Fibrosis Transmembrane Conductance Regulator to Promote Development of Pancreatitis. Gastroenterology, 2015, 148, 427-439.e16.	1.4	163
16	Subcellular Organization of the cAMP Signaling Pathway. Pharmacological Reviews, 2021, 73, 278-309.	16.1	162
17	GLP-1 stimulates insulin secretion by PKC-dependent TRPM4 and TRPM5 activation. Journal of Clinical Investigation, 2015, 125, 4714-4728.	8.2	156
18	cGMP Signals Modulate cAMP Levels in a Compartment-Specific Manner to Regulate Catecholamine-Dependent Signaling in Cardiac Myocytes. Circulation Research, 2011, 108, 929-939.	10.7	147

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19	Mutations in the Insulin-Like Factor 3 Receptor Are Associated With Osteoporosis. Journal of Bone and Mineral Research, 2008, 23, 683-693.	3.0	134
20	TCR- and CD28-Mediated Recruitment of Phosphodiesterase 4 to Lipid Rafts Potentiates TCR Signaling. Journal of Immunology, 2004, 173, 4847-4858.	0.8	125
21	Imaging of cAMP Levels and Protein Kinase A Activity Reveals That Retinal Waves Drive Oscillations in Second-Messenger Cascades. Journal of Neuroscience, 2006, 26, 12807-12815.	3.8	119
22	The Role of Type 4 Phosphodiesterases in Generating Microdomains of cAMP: Large Scale Stochastic Simulations. PLoS ONE, 2010, 5, e11725.	2.5	113
23	Compartmentalisation of cAMP and Ca2+ signals. Current Opinion in Cell Biology, 2002, 14, 160-166.	5.6	111
24	Cardiac Hypertrophy Is Inhibited by a Local Pool of cAMP Regulated by Phosphodiesterase 2. Circulation Research, 2015, 117, 707-719.	10.7	111
25	cAMP: From Long-Range Second Messenger to Nanodomain Signalling. Trends in Pharmacological Sciences, 2018, 39, 209-222.	8.6	102
26	Receptor-associated independent cAMP nanodomains mediate spatiotemporal specificity of GPCR signaling. Cell, 2022, 185, 1130-1142.e11.	27.8	102
27	Use of Chimeric Fluorescent Proteins and Fluorescence Resonance Energy Transfer to Monitor Cellular Responses. Circulation Research, 2004, 94, 866-873.	10.7	97
28	Cyclic nucleotide phosphodiesterase 1A: a key regulator of cardiac fibroblast activation and extracellular matrix remodeling in the heart. Basic Research in Cardiology, 2011, 106, 1023-1039.	6.0	96
29	Protein Kinase A Gating of a Pseudopodial-located RhoA/ROCK/p38/NHE1 Signal Module Regulates Invasion in Breast Cancer Cell Lines. Molecular Biology of the Cell, 2005, 16, 3117-3127.	2.5	92
30	PDE2A2 regulates mitochondria morphology and apoptotic cell death via local modulation of cAMP/PKA signalling. ELife, 2017, 6, .	5.9	83
31	Phosphodiesterases and compartmentalized cAMP signalling in the heart. European Journal of Cell Biology, 2006, 85, 693-697.	3.7	76
32	Spatial control of cAMP signalling in health and disease. Current Opinion in Pharmacology, 2011, 11, 649-655.	3.6	74
33	CFTR regulation in human airway epithelial cells requires integrity of the actin cytoskeleton and compartmentalized cAMP and PKA activity. Journal of Cell Science, 2012, 125, 1106-1117.	2.1	73
34	Activation of PKA in cell requires higher concentration of cAMP than in vitro: implications for compartmentalization of cAMP signalling. Scientific Reports, 2017, 7, 14090.	3.4	72
35	Unitary permeability of gap junction channels to second messengers measured by FRET microscopy. Nature Methods, 2007, 4, 353-358.	19.6	71
36	Plasma Membrane Calcium Pump (PMCA4)-Neuronal Nitric-oxide Synthase Complex Regulates Cardiac Contractility through Modulation of a Compartmentalized Cyclic Nucleotide Microdomain. Journal of Biological Chemistry, 2011, 286, 41520-41529.	3.5	70

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37	cAMP and Ca2+ interplay: a matter of oscillation patterns. Trends in Neurosciences, 2003, 26, 53-55.	8.8	69
38	Improvement of a FRET-based Indicator for cAMP by Linker Design and Stabilization of Donorâ€"Acceptor Interaction. Journal of Molecular Biology, 2005, 354, 546-555.	4.3	69
39	Cell entry and cAMP imaging of anthrax edema toxin. EMBO Journal, 2006, 25, 5405-5413.	8.2	68
40	Human MYO18B, a Novel Unconventional Myosin Heavy Chain Expressed in Striated Muscles Moves into the Myonuclei upon Differentiation. Journal of Molecular Biology, 2003, 326, 137-149.	4.3	67
41	Î²-Adrenergic- and muscarinic receptor-induced changes in cAMP activity in adult cardiac myocytes detected with FRET-based biosensor. American Journal of Physiology - Cell Physiology, 2005, 289, C455-C461.	4.6	67
42	Adrenaline Stimulates Glucagon Secretion by Tpc2-Dependent Ca2+ Mobilization From Acidic Stores in Pancreatic Î±-Cells. Diabetes, 2018, 67, 1128-1139.	0.9	67
43	PKA and PDE4D3 anchoring to AKAP9 provides distinct regulation of cAMP signals at the centrosome. Journal of Cell Biology, 2012, 198, 607-621.	5.2	65
44	Real-time analysis of cAMP-mediated regulation of ciliary motility in single primary human airway epithelial cells. Journal of Cell Science, 2006, 119, 4176-4186.	2.1	64
45	Missense mutations in Desmocollin-2 N-terminus, associated with arrhythmogenic right ventricular cardiomyopathy, affect intracellular localization of desmocollin-2 in vitro. BMC Medical Genetics, 2007, 8, 65.	2.0	63
46	Phosphodiesterases and subcellular compartmentalized cAMP signaling in the cardiovascular system. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 302, H379-H390.	3.4	63
47	Termination of cAMP signals by Ca2+ and GÎ±i via extracellular Ca2+ sensors. Journal of Cell Biology, 2005, 171, 303-312.	5.2	60
48	Cardiomyocyte Membrane Structure and cAMP Compartmentation Produce Anatomical Variation in Î²2AR-cAMP Responsiveness in Murine Hearts. Cell Reports, 2018, 23, 459-469.	6.3	58
49	EPAC1 activation by cAMP stabilizes CFTR at the membrane by promoting its interaction with NHERF1. Journal of Cell Science, 2016, 129, 2599-2612.	2.1	56
50	Myosin Va cooperates with PKA RIÎ± to mediate maintenance of the endplate in vivo. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 2031-2036.	7.6	54
51	Modulation of Compartmentalised Cyclic Nucleotide Signalling via Local Inhibition of Phosphodiesterase Activity. International Journal of Molecular Sciences, 2016, 17, 1672.	4.2	48
52	A Phosphodiesterase 3B-based Signaling Complex Integrates Exchange Protein Activated by cAMP 1 and Phosphatidylinositol 3-Kinase Signals in Human Arterial Endothelial Cells. Journal of Biological Chemistry, 2011, 286, 16285-16296.	3.5	47
53	Phosphatases control PKA-dependent functional microdomains at the outer mitochondrial membrane. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E6497-E6506.	7.6	43
54	Whole-Cell cAMP and PKA Activity are Epiphenomena, Nanodomain Signaling Matters. Physiology, 2019, 34, 240-249.	3.3	41

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55	Compartmentalized cAMP/PKA signalling regulates cardiac excitationâ€“contraction coupling. Journal of Muscle Research and Cell Motility, 2006, 27, 399-403.	1.9	40
56	Rapsyn mediates subsynaptic anchoring of PKA type I and stabilisation of acetylcholine receptor in vivo. Journal of Cell Science, 2012, 125, 714-723.	2.1	40
57	Odorant receptors at the growth cone are coupled to localized cAMP and Ca ²⁺ increases. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 3537-3542.	7.6	38
58	Efficacy of B-Type Natriuretic Peptide Is Coupled to Phosphodiesterase 2A in Cardiac Sympathetic Neurons. Hypertension, 2015, 66, 190-198.	5.2	38
59	Correctors of mutant CFTR enhance subcortical cAMPâ€“PKA signaling through modulating ezrin phosphorylation and cytoskeleton organization. Journal of Cell Science, 2016, 129, 1128-1140.	2.1	38
60	Transgenic fruit-flies expressing a FRET-based sensor for in vivo imaging of cAMP dynamics. Cellular Signalling, 2007, 19, 2296-2303.	3.7	34
61	Troponin destabilization impairs sarcomere-cytoskeleton interactions in iPSC-derived cardiomyocytes from dilated cardiomyopathy patients. Scientific Reports, 2020, 10, 209.	3.4	33
62	Phosphodiesterases Maintain Signaling Fidelity via Compartmentalization of Cyclic Nucleotides. Physiology, 2014, 29, 141-149.	3.3	32
63	IP₃-mediated Ca²⁺ release regulates atrial Ca²⁺ transients and pacemaker function by stimulation of adenylyl cyclases. American Journal of Physiology - Heart and Circulatory Physiology, 2021, 320, H95-H107.	3.4	31
64	Oxidation of Protein Kinase A Regulatory Subunit PKARIÎ± Protects Against Myocardial Ischemia-Reperfusion Injury by Inhibiting Lysosomal-Triggered Calcium Release. Circulation, 2021, 143, 449-465.	9.3	31
65	Î²â€Oestradiol rescues Î”F508CFTR functional expression in human cystic fibrosis airway CFBE41o^{âˆ’} cells through the upâ€regulation of NHERF1. Biology of the Cell, 2008, 100, 399-412.	2.0	30
66	Sustained exposure to catecholamines affects cAMP/PKA compartmentalised signalling in adult rat ventricular myocytes. Cellular Signalling, 2016, 28, 725-732.	3.7	29
67	Imaging Signal Transduction in Living Cells with GFP-Based Probes. IUBMB Life, 2000, 49, 375-379.	3.6	26
68	Developmentally acquired PKA localisation in mouse oocytes and embryos. Developmental Biology, 2008, 317, 36-45.	2.1	25
69	Small-molecule FRET probes for protein kinase activity monitoring in living cells. Biochemical and Biophysical Research Communications, 2010, 397, 750-755.	2.2	23
70	cGMPâ€“cAMP interplay in cardiac myocytes: a local affair with far-reaching consequences for heart function. Biochemical Society Transactions, 2012, 40, 11-14.	3.4	23
71	Participation of Myosin Va and Pka Type I in the Regeneration of Neuromuscular Junctions. PLoS ONE, 2012, 7, e40860.	2.5	23
72	Control of Î²AR- and N-methyl-D-aspartate (NMDA) Receptor-Dependent cAMP Dynamics in Hippocampal Neurons. PLoS Computational Biology, 2016, 12, e1004735.	3.1	23

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73	Using cAMP Sensors to Study Cardiac Nanodomains. Journal of Cardiovascular Development and Disease, 2018, 5, 17.	1.7	23
74	Components of the mitochondrial cAMP signalosome. Biochemical Society Transactions, 2017, 45, 269-274.	3.4	22
75	Phosphodiesterase 2A as a therapeutic target to restore cardiac neurotransmission during sympathetic hyperactivity. JCI Insight, 2018, 3, .	5.0	22
76	Measuring Spatiotemporal Dynamics of Cyclic AMP Signaling in Real-Time Using FRET-Based Biosensors. Methods in Molecular Biology, 2011, 746, 297-316.	0.0	21
77	Imaging cAMP nanodomains in the heart. Biochemical Society Transactions, 2019, 47, 1383-1392.	3.4	21
78	Phosphodiesterase 2A2 regulates mitochondria clearance through Parkin-dependent mitophagy. Communications Biology, 2020, 3, 596.	4.5	20
79	PKA microdomain organisation and cAMP handling in healthy and dystrophic muscle in vivo. Cellular Signalling, 2009, 21, 819-826.	3.7	19
80	Regulation of cAMP-dependent Protein Kinases. Journal of Biological Chemistry, 2010, 285, 35910-35918.	3.5	19
81	Bifunctional Ligands for Inhibition of Tight-Binding Proteinâ€"Protein Interactions. Bioconjugate Chemistry, 2016, 27, 1900-1910.	3.8	19
82	Biochemical characterization and cellular imaging of a novel, membrane permeable fluorescent cAMP analog. BMC Biochemistry, 2008, 9, 18.	4.3	18
83	cAMP imaging of cells treated with pertussis toxin, cholera toxin, and anthrax edema toxin. Biochemical and Biophysical Research Communications, 2008, 376, 429-433.	2.2	18
84	Measuring Dynamic Changes in cAMP Using Fluorescence Resonance Energy Transfer. Methods in Molecular Biology, 2004, 284, 259-270.	0.0	17
85	Phosphorylation of ezrin on Thr567 is required for the synergistic activation of cell spreading by EPAC1 and protein kinase A in HEK293T cells. Biochimica Et Biophysica Acta - Molecular Cell Research, 2015, 1853, 1749-1758.	4.1	15
86	CNP regulates cardiac contractility and increases cGMP near both SERCA and TnI: difference from BNP visualized by targeted cGMP biosensors. Cardiovascular Research, 2022, 118, 1506-1519.	3.7	15
87	Analysis of Compartmentalized cAMP: A Method to Compare Signals from Differently Targeted FRET Reporters. Methods in Molecular Biology, 2014, 1071, 59-71.	0.0	15
88	Targeting FRET-Based Reporters for cAMP and PKA Activity Using AKAP79. Sensors, 2018, 18, 2164.	4.0	14
89	Cytoskeleton regulators CAPZA2 and INF2 associate with CFTR to control its plasma membrane levels under EPAC1 activation. Biochemical Journal, 2020, 477, 2561-2580.	3.8	14
90	Axelrod Symposium 2019: Phosphoproteomic Analysis of G-Proteinâ€"Coupled Pathways. Molecular Pharmacology, 2021, 99, 383-391.	2.3	13

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91	A Novel Approach Combining Real-Time Imaging and the Patch-Clamp Technique to Calibrate FRET-Based Reporters for cAMP in Their Cellular Microenvironment. Methods in Molecular Biology, 2015, 1294, 25-40.	0.0	13
92	Local Termination of 3â€²-5â€²-Cyclic Adenosine Monophosphate Signals: The Role of A Kinase Anchoring Proteinâ€"Tethered Phosphodiesterases. Journal of Cardiovascular Pharmacology, 2011, 58, 345-353.	1.9	12
93	Adenoviral Transduction of FRET-Based Biosensors for cAMP in Primary Adult Mouse Cardiomyocytes. Methods in Molecular Biology, 2015, 1294, 103-115.	0.0	11
94	Multi-Compartment, Early Disruption of cGMP and cAMP Signalling in Cardiac Myocytes from the mdx Model of Duchenne Muscular Dystrophy. International Journal of Molecular Sciences, 2020, 21, 7056.	4.2	11
95	Dimerization of Fab fragments enables ready screening of phage antibodies that affect hepatocyte growth factor/scatter factor activity on target cells. European Journal of Immunology, 1997, 27, 618-623.	3.3	10
96	AKAP79 Orchestrates a Cyclic AMP Signalosome Adjacent to Orai1 Ca2+ Channels. Function, 2021, 2, zqab036.	2.1	10
97	Heterogeneity of Second Messenger Levels in Living Cells. Novartis Foundation Symposium, 2008, 239, 85-95.	0.0	9
98	Photon Moment Analysis in Cells in the Presence of Photo-Bleaching. Applied Spectroscopy, 2005, 59, 227-236.	2.5	8
99	Quantification and Comparison of Signals Generated by Different FRET-Based cAMP Reporters. Methods in Molecular Biology, 2019, 1947, 217-237.	0.0	8
100	Integrated Proteomics Unveils Nuclear PDE3A2 as a Regulator of Cardiac Myocyte Hypertrophy. Circulation Research, 2023, 132, 828-848.	10.7	8
101	Study of Cyclic Adenosine Monophosphate Microdomains in Cells. Methods in Molecular Biology, 2005, 307, 001-014.	0.0	6
102	Response to Wagner et al.: phosphodiesterase-2â€"anti-adrenergic friend or hypertrophic foe in heart disease?. Naunyn-Schmiedeberg's Archives of Pharmacology, 2016, 389, 1143-1145.	3.1	6
103	Increase in Ca2+ current by sustained cAMP levels enhances proliferation rate in GH3 cells. Life Sciences, 2018, 192, 144-150.	4.4	6
104	Adenylyl cyclase isoform 1 contributes to sinoatrial node automaticity via functional microdomains. JCI Insight, 2022, 7, .	5.0	5
105	Deciphering cellular signals in adult mouse sinoatrial node cells. IScience, 2022, 25, 103693.	4.1	4
106	Using the Proteomics Toolbox to Resolve Topology and Dynamics of Compartmentalized cAMP Signaling. International Journal of Molecular Sciences, 2023, 24, 4667.	4.2	4
107	Compartmentalized cAMP signalling and control of cardiac rhythm. Philosophical Transactions of the Royal Society B: Biological Sciences, 2023, 378, .	4.2	4
108	cAMP Buffering via Liquidâ€"Liquid Phase Separation. Function, 2020, 2, zqaa048.	2.1	3

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109	Abnormal Cyclic Nucleotide Signaling at the Outer Mitochondrial Membrane In Sympathetic Neurons During the Early Stages of Hypertension. Hypertension, 2022, 79, 1374-1384.	5.2	3
110	Selection of Functional Antibodies on the Basis of Valency. Methods in Molecular Biology, 2002, 178, 255-258.	0.0	2
111	cAMP Compartmentalisation and Hypertrophy of the Heart: â€˜Goodâ€™ Pools of cAMP and â€˜Badâ€™ Pools of cAMP Coexist in the Same Cardiac Myocyte. Cardiac and Vascular Biology, 2017, , 117-141.	0.0	2
112	Phosphodiesterase 2A, cGMP stimulated. The AFCS-nature Molecule Pages, 0, , .	0.2	2
113	Compartmentalization and Regulation of Cyclic Nucleotide Signaling in The CNS. , 2014, , 59-76.		1
114	FRET-ting about RhoA signalling in heart and vasculature: a new tool in our cardiovascular toolbox. Cardiovascular Research, 2018, 114, e25-e27.	3.7	0
115	Compartmentalized cAMP signaling in arterial myocytes. FASEB Journal, 2021, 35, .	0.5	0
116	Spatial and Temporal Relationships of Cyclic Nucleotides in Intact Cells. , 2003, , 459-464.		0
117	Biochemical Characterization and Cellular Imaging of a Novel, Membrane Permeable Fluorescent Camp Analog. , 2011, , 107-129.		0
118	Submicroscopic cAMP/PKA Compartmentalization: Ion flux at the Cardiomyocyte Plasmalemma. FASEB Journal, 2019, 33, 676.6.	0.5	0
119	Quantitative Phosphoproteomics to Study cAMP Signaling. Methods in Molecular Biology, 2022, 2483, 281-296.	0.0	0
120	Micro-2D Cell Culture for cAMP Measurements Using FRET Reporters in Human iPSC-Derived Cardiomyocytes. Methods in Molecular Biology, 2022, 2483, 141-165.	0.0	0
121	Regulation of cardiac function by cAMP nanodomains. Bioscience Reports, 2023, 43, .	2.7	0
122	cAMP Compartmentalisation in Human Myometrial Cells. Cells, 2023, 12, 718.	4.3	0
123	Phase separation of protein kinase A: a new paradigm in cardiac regulation?. Nature Reviews Cardiology, 2024, 21, 523-523.	13.8	0
124	Activation of IP3R in atrial cardiomyocytes leads to generation of cytosolic cAMP. American Journal of Physiology - Heart and Circulatory Physiology, 0, , .	3.4	0