Manuela Zaccolo

List of Publications by Year
in descending order

128 papers	8,720 citations	36303 51 h-index	46799 89 g-index
132 all docs	132 docs citations	132 times ranked	7883 citing authors

#	Article	IF	Citations
1	Discrete Microdomains with High Concentration of cAMP in Stimulated Rat Neonatal Cardiac Myocytes. Science, 2002, 295, 1711-1715.	12.6	782
2	A genetically encoded, fluorescent indicator for cyclic AMP in living cells. Nature Cell Biology, 2000, 2, 25-29.	10.3	474
3	Detecting cAMPâ€induced Epac activation by fluorescence resonance energy transfer: Epac as a novel cAMP indicator. EMBO Reports, 2004, 5, 1176-1180.	4.5	404
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.	4.5	341
5	cAMP and cGMP Signaling Cross-Talk. Circulation Research, 2007, 100, 1569-1578.	4.5	309
6	Compartmentalized Phosphodiesterase-2 Activity Blunts Î²-Adrenergic Cardiac Inotropy via an NO/cGMP-Dependent Pathway. Circulation Research, 2006, 98, 226-234.	4.5	252
7	Nitroxyl Improves Cellular Heart Function by Directly Enhancing Cardiac Sarcoplasmic Reticulum Ca 2+ Cycling. Circulation Research, 2007, 100, 96-104.	4.5	209
8	cGMP Catabolism by Phosphodiesterase 5A Regulates Cardiac Adrenergic Stimulation by NOS3-Dependent Mechanism. Circulation Research, 2005, 96, 100-109.	4.5	191
9	Spatiotemporal Coupling of cAMP Transporter to CFTR Chloride Channel Function in the Gut Epithelia. Cell, 2007, 131, 940-951.	28.9	191
10	Protein Kinase A Type I and Type II Define Distinct Intracellular Signaling Compartments. Circulation Research, 2008, 103, 836-844.	4.5	185
11	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	171
12	AKAP complex regulates Ca ²⁺ reâ€uptake into heart sarcoplasmic reticulum. EMBO Reports, 2007, 8, 1061-1067.	4.5	167
13	FRET biosensor uncovers cAMP nano-domains at Î²-adrenergic targets that dictate precise tuning of cardiac contractility. Nature Communications, 2017, 8, 15031.	12.8	166
14	Alcohol Disrupts Levels and Function of the Cystic Fibrosis Transmembrane Conductance Regulator to Promote Development of Pancreatitis. Gastroenterology, 2015, 148, 427-439.e16.	1.3	159
15	cAMP signaling in subcellular compartments. , 2014, 143, 295-304.		157
16	GLP-1 stimulates insulin secretion by PKC-dependent TRPM4 and TRPM5 activation. Journal of Clinical Investigation, 2015, 125, 4714-4728.	8.2	145
17	cGMP Signals Modulate cAMP Levels in a Compartment-Specific Manner to Regulate Catecholamine-Dependent Signaling in Cardiac Myocytes. Circulation Research, 2011, 108, 929-939.	4.5	143
18	cAMP signal transduction in the heart: understanding spatial control for the development of novel therapeutic strategies. British Journal of Pharmacology, 2009, 158, 50-60.	5.4	141

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19	Subcellular Organization of the cAMP Signaling Pathway. Pharmacological Reviews, 2021, 73, 278-309.	16.0	139
20	Mutations in the Insulin-Like Factor 3 Receptor Are Associated With Osteoporosis. Journal of Bone and Mineral Research, 2008, 23, 683-693.	2.8	128
21	TCR- and CD28-Mediated Recruitment of Phosphodiesterase 4 to Lipid Rafts Potentiates TCR Signaling. Journal of Immunology, 2004, 173, 4847-4858.	0.8	123
22	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.	3.6	117
23	The Role of Type 4 Phosphodiesterases in Generating Microdomains of cAMP: Large Scale Stochastic Simulations. PLoS ONE, 2010, 5, e11725.	2.5	113
24	Compartmentalisation of cAMP and Ca2+ signals. Current Opinion in Cell Biology, 2002, 14, 160-166.	5.4	110
25	Cardiac Hypertrophy Is Inhibited by a Local Pool of cAMP Regulated by Phosphodiesterase 2. Circulation Research, 2015, 117, 707-719.	4.5	105
26	Use of Chimeric Fluorescent Proteins and Fluorescence Resonance Energy Transfer to Monitor Cellular Responses. Circulation Research, 2004, 94, 866-873.	4.5	97
27	cAMP: From Long-Range Second Messenger to Nanodomain Signalling. Trends in Pharmacological Sciences, 2018, 39, 209-222.	8.7	95
28	Disruption of the cyclic AMP phosphodiesterase-4 (PDE4)â€“HSP20 complex attenuates the Î²-agonist induced hypertrophic response in cardiac myocytes. Journal of Molecular and Cellular Cardiology, 2011, 50, 872-883.	1.9	94
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.	2.1	92
30	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.	5.9	91
31	Receptor-associated independent cAMP nanodomains mediate spatiotemporal specificity of GPCR signaling. Cell, 2022, 185, 1130-1142.e11.	28.9	85
32	PDE2A2 regulates mitochondria morphology and apoptotic cell death via local modulation of cAMP/PKA signalling. ELife, 2017, 6, .	6.0	82
33	Phosphodiesterases and compartmentalized cAMP signalling in the heart. European Journal of Cell Biology, 2006, 85, 693-697.	3.6	76
34	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.	2.0	72
35	Unitary permeability of gap junction channels to second messengers measured by FRET microscopy. Nature Methods, 2007, 4, 353-358.	19.0	71
36	Restricted diffusion of a freely diffusible second messenger: mechanisms underlying compartmentalized cAMP signalling. Biochemical Society Transactions, 2006, 34, 495-497.	3.4	70

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37	Spatial control of cAMP signalling in health and disease. Current Opinion in Pharmacology, 2011, 11, 649-655.	3.5	70
38	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.	3.4	69
39	Activation of PKA in cell requires higher concentration of cAMP than in vitro: implications for compartmentalization of cAMP signalling. Scientific Reports, 2017, 7, 14090.	3.3	69
40	Cell entry and cAMP imaging of anthrax edema toxin. EMBO Journal, 2006, 25, 5405-5413.	7.8	68
41	cAMP and Ca2+ interplay: a matter of oscillation patterns. Trends in Neurosciences, 2003, 26, 53-55.	8.6	67
42	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.	4.2	67
43	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.	4.2	66
44	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	65
45	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.	2.0	63
46	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	63
47	Phosphodiesterases and subcellular compartmentalized cAMP signaling in the cardiovascular system. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 302, H379-H390.	3.2	62
48	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.	2.1	61
49	Adrenaline Stimulates Glucagon Secretion by Tpc2-Dependent Ca2+ Mobilization From Acidic Stores in Pancreatic Î±-Cells. Diabetes, 2018, 67, 1128-1139.	0.6	61
50	Termination of cAMP signals by Ca2+ and GÎ±i via extracellular Ca2+ sensors. Journal of Cell Biology, 2005, 171, 303-312.	5.2	60
51	EPAC1 activation by cAMP stabilizes CFTR at the membrane by promoting its interaction with NHERF1. Journal of Cell Science, 2016, 129, 2599-612.	2.0	56
52	Regulation of the inflammatory response of vascular endothelial cells by EPAC1. British Journal of Pharmacology, 2012, 166, 434-446.	5.4	54
53	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.	7.1	52
54	Cardiomyocyte Membrane Structure and cAMP Compartmentation Produce Anatomical Variation in Î²2AR-cAMP Responsiveness in Murine Hearts. Cell Reports, 2018, 23, 459-469.	6.4	51

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55	Modulation of Compartmentalised Cyclic Nucleotide Signalling via Local Inhibition of Phosphodiesterase Activity. International Journal of Molecular Sciences, 2016, 17, 1672.	4.1	48
56	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.	3.4	46
57	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.	7.1	41
58	Whole-Cell cAMP and PKA Activity are Epiphenomena, Nanodomain Signaling Matters. Physiology, 2019, 34, 240-249.	3.1	40
59	Compartmentalized cAMP/PKA signalling regulates cardiac excitationâ€“contraction coupling. Journal of Muscle Research and Cell Motility, 2006, 27, 399-403.	2.0	39
60	Rapsyn mediates subsynaptic anchoring of PKA type I and stabilisation of acetylcholine receptor in vivo. Journal of Cell Science, 2012, 125, 714-723.	2.0	38
61	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.	7.1	37
62	Correctors of mutant CFTR enhance subcortical cAMP/PKA signaling via ezrin phosphorylation and cytoskeleton organization. Journal of Cell Science, 2016, 129, 1128-40.	2.0	37
63	Transgenic fruit-flies expressing a FRET-based sensor for in vivo imaging of cAMP dynamics. Cellular Signalling, 2007, 19, 2296-2303.	3.6	34
64	Efficacy of B-Type Natriuretic Peptide Is Coupled to Phosphodiesterase 2A in Cardiac Sympathetic Neurons. Hypertension, 2015, 66, 190-198.	2.7	34
65	Î²â€Oestradiol rescues Î”F508CFTR functional expression in human cystic fibrosis airway CFBE41o^{â^’} cells through the upâ€regulation of NHERF1. Biology of the Cell, 2008, 100, 399-412.	2.0	30
66	Phosphodiesterases Maintain Signaling Fidelity via Compartmentalization of Cyclic Nucleotides. Physiology, 2014, 29, 141-149.	3.1	30
67	A complex phosphodiesterase system controls Î²-adrenoceptor signalling in cardiomyocytes. Biochemical Society Transactions, 2006, 34, 510-511.	3.4	29
68	Troponin destabilization impairs sarcomere-cytoskeleton interactions in iPSC-derived cardiomyocytes from dilated cardiomyopathy patients. Scientific Reports, 2020, 10, 209.	3.3	29
69	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.	1.6	29
70	Imaging the cAMP-dependent signal transduction pathway1. Biochemical Society Transactions, 2005, 33, 1323.	3.4	27
71	Sustained exposure to catecholamines affects cAMP/PKA compartmentalised signalling in adult rat ventricular myocytes. Cellular Signalling, 2016, 28, 725-732.	3.6	27
72	Imaging Signal Transduction in Living Cells with GFP-Based Probes. IUBMB Life, 2000, 49, 375-379.	3.4	26

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73	Space and time-resolved gene expression experiments on cultured mammalian cells by a single-cell electroporation microarray. New Biotechnology, 2008, 25, 55-67.	4.4	25
74	Developmentally acquired PKA localisation in mouse oocytes and embryos. Developmental Biology, 2008, 317, 36-45.	2.0	25
75	Local modulation of cystic fibrosis conductance regulator: cytoskeleton and compartmentalized <scp>cAMP</scp> signalling. British Journal of Pharmacology, 2013, 169, 1-9.	5.4	24
76	Small-molecule FRET probes for protein kinase activity monitoring in living cells. Biochemical and Biophysical Research Communications, 2010, 397, 750-755.	2.1	23
77	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
78	Using cAMP Sensors to Study Cardiac Nanodomains. Journal of Cardiovascular Development and Disease, 2018, 5, 17.	1.6	23
79	Participation of Myosin Va and Pka Type I in the Regeneration of Neuromuscular Junctions. PLoS ONE, 2012, 7, e40860.	2.5	22
80	Control of Î²AR- and N-methyl-D-aspartate (NMDA) Receptor-Dependent cAMP Dynamics in Hippocampal Neurons. PLoS Computational Biology, 2016, 12, e1004735.	3.2	22
81	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.	3.2	22
82	Measuring Spatiotemporal Dynamics of Cyclic AMP Signaling in Real-Time Using FRET-Based Biosensors. Methods in Molecular Biology, 2011, 746, 297-316.	0.9	21
83	Imaging cAMP nanodomains in the heart. Biochemical Society Transactions, 2019, 47, 1383-1392.	3.4	21
84	Components of the mitochondrial cAMP signalosome. Biochemical Society Transactions, 2017, 45, 269-274.	3.4	20
85	Phosphodiesterase 2A2 regulates mitochondria clearance through Parkin-dependent mitophagy. Communications Biology, 2020, 3, 596.	4.4	20
86	PKA microdomain organisation and cAMP handling in healthy and dystrophic muscle in vivo. Cellular Signalling, 2009, 21, 819-826.	3.6	19
87	Regulation of cAMP-dependent Protein Kinases. Journal of Biological Chemistry, 2010, 285, 35910-35918.	3.4	19
88	Bifunctional Ligands for Inhibition of Tight-Binding Proteinâ€“Protein Interactions. Bioconjugate Chemistry, 2016, 27, 1900-1910.	3.6	19
89	Phosphodiesterase 2A as a therapeutic target to restore cardiac neurotransmission during sympathetic hyperactivity. JCI Insight, 2018, 3, .	5.0	19
90	cAMP imaging of cells treated with pertussis toxin, cholera toxin, and anthrax edema toxin. Biochemical and Biophysical Research Communications, 2008, 376, 429-433.	2.1	18

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91	Measuring Dynamic Changes in cAMP Using Fluorescence Resonance Energy Transfer. , 2004, 284, 259-270.		17
92	Biochemical characterization and cellular imaging of a novel, membrane permeable fluorescent cAMP analog. BMC Biochemistry, 2008, 9, 18.	4.4	17
93	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
94	Analysis of Compartmentalized cAMP: A Method to Compare Signals from Differently Targeted FRET Reporters. Methods in Molecular Biology, 2014, 1071, 59-71.	0.9	15
95	Targeting FRET-Based Reporters for cAMP and PKA Activity Using AKAP79. Sensors, 2018, 18, 2164.	3.8	13
96	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.	3.8	13
97	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.	0.9	13
98	Cytoskeleton regulators CAPZA2 and INF2 associate with CFTR to control its plasma membrane levels under EPAC1 activation. Biochemical Journal, 2020, 477, 2561-2580.	3.7	13
99	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
100	Axelrod Symposium 2019: Phosphoproteomic Analysis of G-Proteinâ€"Coupled Pathways. Molecular Pharmacology, 2021, 99, 383-391.	2.3	12
101	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.	2.9	10
102	Adenoviral Transduction of FRET-Based Biosensors for cAMP in Primary Adult Mouse Cardiomyocytes. Methods in Molecular Biology, 2015, 1294, 103-115.	0.9	10
103	AKAP79 Orchestrates a Cyclic AMP Signalosome Adjacent to Orai1 Ca2+ Channels. Function, 2021, 2, zqab036.	2.3	10
104	Molecular basis of the allosteric mechanism of cAMP in the regulatory PKA subunit. FEBS Letters, 2005, 579, 2679-2685.	2.8	9
105	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.	4.1	9
106	Quantification and Comparison of Signals Generated by Different FRET-Based cAMP Reporters. Methods in Molecular Biology, 2019, 1947, 217-237.	0.9	8
107	Photon Moment Analysis in Cells in the Presence of Photo-Bleaching. Applied Spectroscopy, 2005, 59, 227-236.	2.2	7
108	Study of Cyclic Adenosine Monophosphate Microdomains in Cells. , 2005, 307, 001-014.		6

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109	Heterogeneity of Second Messenger Levels in Living Cells. Novartis Foundation Symposium, 2008, 239, 85-95.	1.1	6
110	Increase in Ca2+ current by sustained cAMP levels enhances proliferation rate in GH3 cells. Life Sciences, 2018, 192, 144-150.	4.3	6
111	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.	3.0	5
112	Deciphering cellular signals in adult mouse sinoatrial node cells. IScience, 2022, 25, 103693.	4.1	4
113	cAMP Buffering via Liquidâ€"Liquid Phase Separation. Function, 2020, 2, zqaa048.	2.3	3
114	Selection of Functional Antibodies on the Basis of Valency. , 2002, 178, 255-258.		2
115	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.	0.2	2
116	Abnormal Cyclic Nucleotide Signaling at the Outer Mitochondrial Membrane In Sympathetic Neurons During the Early Stages of Hypertension. Hypertension, 2022, 79, 1374-1384.	2.7	2
117	Stressâ€induced protein dermcidin develops diabetes targeting GLUT4/insulinviaNO/cGMP inhibition.. British Journal of Pharmacology, 2021, , .	5.4	1
118	Phosphodiesterase 2A, cGMP stimulated. The AFCS-nature Molecule Pages, 0, , .	0.2	1
119	PDE2A. , 2018, , 3826-3834.		1
120	Microdomains of cAMP in heart cells. Biomedicine and Pharmacotherapy, 2002, 56, 313-314.	5.6	0
121	FRET-ting about RhoA signalling in heart and vasculature: a new tool in our cardiovascular toolbox. Cardiovascular Research, 2018, 114, e25-e27.	3.8	0
122	Compartmentalized cAMP signaling in arterial myocytes. FASEB Journal, 2021, 35, .	0.5	0
123	Spatial and Temporal Relationships of Cyclic Nucleotides in Intact Cells. , 2003, , 459-464.		0
124	Biochemical Characterization and Cellular Imaging of a Novel, Membrane Permeable Fluorescent Camp Analog. , 2011, , 107-129.		0
125	Submicroscopic cAMP/PKA Compartmentalization: Ion flux at the Cardiomyocyte Plasmalemma. FASEB Journal, 2019, 33, 676.6.	0.5	0
126	Abstract 14219: Oxidation of PKA-RIÎ± Protects Against Ischemia-reperfusion Injury by Inhibiting Lysosomal-triggered Calcium Release. Circulation, 2020, 142, .	1.6	0

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127	Quantitative Phosphoproteomics to Study cAMP Signaling. Methods in Molecular Biology, 2022, 2483, 281-296.	0.9	0
128	Micro-2D Cell Culture for cAMP Measurements Using FRET Reporters in Human iPSC-Derived Cardiomyocytes. Methods in Molecular Biology, 2022, 2483, 141-165.	0.9	0