

Catherine Shanahan

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102
papers

15,896
citations

62
h-index

107
g-index

107
ext. papers

17,811
ext. citations

9
avg, IF

6.55
L-index

#	Paper	IF	Citations
102	Nesprins: intracellular scaffolds that maintain cell architecture and coordinate cell function?. <i>Expert Reviews in Molecular Medicine</i> , 2005 , 7, 1-15	6.7	1197
101	Coupling of the nucleus and cytoplasm: role of the LINC complex. <i>Journal of Cell Biology</i> , 2006 , 172, 41-53	5.3	947
100	Human vascular smooth muscle cells undergo vesicle-mediated calcification in response to changes in extracellular calcium and phosphate concentrations: a potential mechanism for accelerated vascular calcification in ESRD. <i>Journal of the American Society of Nephrology: JASN</i> , 2004 , 15, 2857-67	12.7	715
99	Arterial calcification in chronic kidney disease: key roles for calcium and phosphate. <i>Circulation Research</i> , 2011 , 109, 697-711	15.7	610
98	Apoptosis regulates human vascular calcification in vitro: evidence for initiation of vascular calcification by apoptotic bodies. <i>Circulation Research</i> , 2000 , 87, 1055-62	15.7	534
97	Medial localization of mineralization-regulating proteins in association with Mückeberg's sclerosis: evidence for smooth muscle cell-mediated vascular calcification. <i>Circulation</i> , 1999 , 100, 2168-76	16.7	520
96	High expression of genes for calcification-regulating proteins in human atherosclerotic plaques. <i>Journal of Clinical Investigation</i> , 1994 , 93, 2393-402	15.9	463
95	Osteo/chondrocytic transcription factors and their target genes exhibit distinct patterns of expression in human arterial calcification. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , 2003 , 23, 489-94	9.4	416
94	Medial vascular calcification revisited: review and perspectives. <i>European Heart Journal</i> , 2014 , 35, 1515-25	5.5	411
93	Nesprin-1 and -2 are involved in the pathogenesis of Emery Dreifuss muscular dystrophy and are critical for nuclear envelope integrity. <i>Human Molecular Genetics</i> , 2007 , 16, 2816-33	5.6	397
92	SUN1 interacts with nuclear lamin A and cytoplasmic nesprins to provide a physical connection between the nuclear lamina and the cytoskeleton. <i>Molecular and Cellular Biology</i> , 2006 , 26, 3738-51	4.8	389
91	Macrophage-derived matrix vesicles: an alternative novel mechanism for microcalcification in atherosclerotic plaques. <i>Circulation Research</i> , 2013 , 113, 72-7	15.7	380
90	Dialysis accelerates medial vascular calcification in part by triggering smooth muscle cell apoptosis. <i>Circulation</i> , 2008 , 118, 1748-57	16.7	371
89	Role of smooth muscle cells in vascular calcification: implications in atherosclerosis and arterial stiffness. <i>Cardiovascular Research</i> , 2018 , 114, 590-600	9.9	349
88	The interaction between nesprins and sun proteins at the nuclear envelope is critical for force transmission between the nucleus and cytoskeleton. <i>Journal of Biological Chemistry</i> , 2011 , 286, 26743-53	5.4	340
87	Isolation of gene markers of differentiated and proliferating vascular smooth muscle cells. <i>Circulation Research</i> , 1993 , 73, 193-204	15.7	327
86	Vascular smooth muscle cell calcification is mediated by regulated exosome secretion. <i>Circulation Research</i> , 2015 , 116, 1312-23	15.7	319

85	Multifunctional roles for serum protein fetuin-a in inhibition of human vascular smooth muscle cell calcification. <i>Journal of the American Society of Nephrology: JASN</i> , 2005 , 16, 2920-30	12.7	272
84	Calcium regulates key components of vascular smooth muscle cell-derived matrix vesicles to enhance mineralization. <i>Circulation Research</i> , 2011 , 109, e1-12	15.7	269
83	Mechanistic insights into vascular calcification in CKD. <i>Journal of the American Society of Nephrology: JASN</i> , 2013 , 24, 179-89	12.7	260
82	Prelamin A acts to accelerate smooth muscle cell senescence and is a novel biomarker of human vascular aging. <i>Circulation</i> , 2010 , 121, 2200-10	16.7	249
81	Calcium phosphate crystals induce cell death in human vascular smooth muscle cells: a potential mechanism in atherosclerotic plaque destabilization. <i>Circulation Research</i> , 2008 , 103, e28-34	15.7	240
80	Chronic mineral dysregulation promotes vascular smooth muscle cell adaptation and extracellular matrix calcification. <i>Journal of the American Society of Nephrology: JASN</i> , 2010 , 21, 103-12	12.7	235
79	Calcification of human vascular cells in vitro is correlated with high levels of matrix Gla protein and low levels of osteopontin expression. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , 1998 , 18, 379-88 ^{9.4}	9.4	212
78	Nesprin-2 is a multi-isomeric protein that binds lamin and emerin at the nuclear envelope and forms a subcellular network in skeletal muscle. <i>Journal of Cell Science</i> , 2005 , 118, 673-87	5.3	211
77	Smooth muscle cell heterogeneity: patterns of gene expression in vascular smooth muscle cells in vitro and in vivo. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , 1998 , 18, 333-8	9.4	203
76	Mammalian SUN protein interaction networks at the inner nuclear membrane and their role in laminopathy disease processes. <i>Journal of Biological Chemistry</i> , 2010 , 285, 3487-98	5.4	196
75	Post-translational modifications regulate matrix Gla protein function: importance for inhibition of vascular smooth muscle cell calcification. <i>Journal of Thrombosis and Haemostasis</i> , 2007 , 5, 2503-11	15.4	181
74	Vascular calcification and osteoporosis--from clinical observation towards molecular understanding. <i>Osteoporosis International</i> , 2007 , 18, 251-9	5.3	180
73	Vascular smooth muscle cell phenotypic plasticity and the regulation of vascular calcification. <i>Journal of Internal Medicine</i> , 2006 , 260, 192-210	10.8	174
72	The vascular biology of calcification. <i>Seminars in Dialysis</i> , 2007 , 20, 103-9	2.5	151
71	Prelamin A accelerates vascular calcification via activation of the DNA damage response and senescence-associated secretory phenotype in vascular smooth muscle cells. <i>Circulation Research</i> , 2013 , 112, e99-109	15.7	150
70	Linked chromosome 16q13 chemokines, macrophage-derived chemokine, fractalkine, and thymus- and activation-regulated chemokine, are expressed in human atherosclerotic lesions. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , 2001 , 21, 923-9	9.4	143
69	The circulating calcification inhibitors, fetuin-A and osteoprotegerin, but not matrix Gla protein, are associated with vascular stiffness and calcification in children on dialysis. <i>Nephrology Dialysis Transplantation</i> , 2008 , 23, 3263-71	4.3	138
68	Biology of calcification in vascular cells: intima versus media. <i>Herz</i> , 2001 , 26, 245-51	2.6	135

67	Acetylated low-density lipoprotein stimulates human vascular smooth muscle cell calcification by promoting osteoblastic differentiation and inhibiting phagocytosis. <i>Circulation</i> , 2002 , 106, 3044-50	16.7	128
66	Mechanisms of vascular calcification in CKD-evidence for premature ageing?. <i>Nature Reviews Nephrology</i> , 2013 , 9, 661-70	14.9	114
65	Nesprins LINC the nucleus and cytoskeleton. <i>Current Opinion in Cell Biology</i> , 2011 , 23, 47-54	9	114
64	Molecular cloning of cDNA encoding the 110 kDa and 21 kDa regulatory subunits of smooth muscle protein phosphatase 1M. <i>FEBS Letters</i> , 1994 , 356, 51-5	3.8	110
63	Medial Arterial Calcification: An Overlooked Player in Peripheral Arterial Disease. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , 2016 , 36, 1475-82	9.4	108
62	Exploring the biology of vascular calcification in chronic kidney disease: what's circulating?. <i>Kidney International</i> , 2008 , 73, 384-90	9.9	102
61	The effect of particle agglomeration on the formation of a surface-connected compartment induced by hydroxyapatite nanoparticles in human monocyte-derived macrophages. <i>Biomaterials</i> , 2014 , 35, 1074-88	15.6	98
60	Inflammation ushers in calcification: a cycle of damage and protection?. <i>Circulation</i> , 2007 , 116, 2782-5	16.7	98
59	Role for alkaline phosphatase as an inducer of vascular calcification in renal failure?. <i>Kidney International</i> , 2008 , 73, 989-91	9.9	97
58	Kröpel-like factor 4 (KLF4/GKLF) is a target of bone morphogenetic proteins and transforming growth factor beta 1 in the regulation of vascular smooth muscle cell phenotype. <i>Journal of Biological Chemistry</i> , 2003 , 278, 11661-9	5.4	97
57	A polymorphism of the human matrix gamma-carboxyglutamic acid protein promoter alters binding of an activating protein-1 complex and is associated with altered transcription and serum levels. <i>Journal of Biological Chemistry</i> , 2001 , 276, 32466-73	5.4	91
56	Induction, differentiation, and remodeling of blood vessels after transplantation of Bcl-2-transduced endothelial cells. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005 , 102, 425-30	11.5	90
55	Bone morphogenetic protein receptor type II deficiency and increased inflammatory cytokine production. A gateway to pulmonary arterial hypertension. <i>American Journal of Respiratory and Critical Care Medicine</i> , 2015 , 192, 859-72	10.2	89
54	Mineral surface in calcified plaque is like that of bone: further evidence for regulated mineralization. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , 2008 , 28, 2030-4	9.4	86
53	Emerging roles for vascular smooth muscle cell exosomes in calcification and coagulation. <i>Journal of Physiology</i> , 2016 , 594, 2905-14	3.9	85
52	Multiple novel nesprin-1 and nesprin-2 variants act as versatile tissue-specific intracellular scaffolds. <i>PLoS ONE</i> , 2012 , 7, e40098	3.7	82
51	Matrix gla protein is regulated by a mechanism functionally related to the calcium-sensing receptor. <i>Biochemical and Biophysical Research Communications</i> , 2000 , 277, 736-40	3.4	80
50	Distinct functional domains in nesprin-1alpha and nesprin-2beta bind directly to emerin and both interactions are disrupted in X-linked Emery-Dreifuss muscular dystrophy. <i>Experimental Cell Research</i> , 2007 , 313, 2845-57	4.2	78

49	HDL in children with CKD promotes endothelial dysfunction and an abnormal vascular phenotype. <i>Journal of the American Society of Nephrology: JASN</i> , 2014 , 25, 2658-68	12.7	76
48	Extracellular matrix proteomics identifies molecular signature of symptomatic carotid plaques. <i>Journal of Clinical Investigation</i> , 2017 , 127, 1546-1560	15.9	73
47	Cell nuclei spin in the absence of lamin b1. <i>Journal of Biological Chemistry</i> , 2007 , 282, 20015-26	5.4	72
46	Targeted redox inhibition of protein phosphatase 1 by Nox4 regulates eIF2 β -mediated stress signaling. <i>EMBO Journal</i> , 2016 , 35, 319-34	13	72
45	Identification of osteoglycin as a component of the vascular matrix. Differential expression by vascular smooth muscle cells during neointima formation and in atherosclerotic plaques. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , 1997 , 17, 2437-47	9.4	71
44	NMR spectroscopy of native and in vitro tissues implicates polyADP ribose in biomineralization. <i>Science</i> , 2014 , 344, 742-6	33.3	67
43	Aquaporin-1 is expressed by vascular smooth muscle cells and mediates rapid water transport across vascular cell membranes. <i>Journal of Vascular Research</i> , 1999 , 36, 353-62	1.9	67
42	Vascular calcification and hypertension: cause and effect. <i>Annals of Medicine</i> , 2012 , 44 Suppl 1, S85-92	1.5	65
41	Prothrombin Loading of Vascular Smooth Muscle Cell-Derived Exosomes Regulates Coagulation and Calcification. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , 2017 , 37, e22-e32	9.4	64
40	Calcium regulation of vascular smooth muscle cell-derived matrix vesicles. <i>Trends in Cardiovascular Medicine</i> , 2012 , 22, 133-7	6.9	62
39	The nuclear lamina in health and disease. <i>Nucleus</i> , 2016 , 7, 233-48	3.9	60
38	Novel nesprin-1 mutations associated with dilated cardiomyopathy cause nuclear envelope disruption and defects in myogenesis. <i>Human Molecular Genetics</i> , 2017 , 26, 2258-2276	5.6	59
37	Extracellular Matrix Proteomics Reveals Interplay of Aggrecan and Aggrecanases in Vascular Remodeling of Stented Coronary Arteries. <i>Circulation</i> , 2018 , 137, 166-183	16.7	56
36	Adipocytic differentiation and liver x receptor pathways regulate the accumulation of triacylglycerols in human vascular smooth muscle cells. <i>Journal of Biological Chemistry</i> , 2005 , 280, 3911-9	5.4	56
35	Magnesium Counteracts Vascular Calcification: Passive Interference or Active Modulation?. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , 2017 , 37, 1431-1445	9.4	52
34	Nesprins: tissue-specific expression of epsilon and other short isoforms. <i>PLoS ONE</i> , 2014 , 9, e94380	3.7	52
33	Smooth muscle cell phenotypes in atherosclerotic lesions. <i>Current Opinion in Lipidology</i> , 1999 , 10, 507-13	4.4	51
32	Arterial "inflammaging" drives vascular calcification in children on dialysis. <i>Kidney International</i> , 2019 , 95, 958-972	9.9	50

31	Endogenous Calcification Inhibitors in the Prevention of Vascular Calcification: A Consensus Statement From the COST Action EuroSoftCalcNet. <i>Frontiers in Cardiovascular Medicine</i> , 2018 , 5, 196	5.4	48
30	BMP-9 regulates the osteoblastic differentiation and calcification of vascular smooth muscle cells through an ALK1 mediated pathway. <i>Journal of Cellular and Molecular Medicine</i> , 2015 , 19, 165-74	5.6	44
29	Current insights into LMNA cardiomyopathies: Existing models and missing LINC. <i>Nucleus</i> , 2017 , 8, 17-33	3.9	42
28	Novel nuclear nesprin-2 variants tether active extracellular signal-regulated MAPK1 and MAPK2 at promyelocytic leukemia protein nuclear bodies and act to regulate smooth muscle cell proliferation. <i>Journal of Biological Chemistry</i> , 2010 , 285, 1311-20	5.4	42
27	Differential gene expression in vascular smooth muscle cells in primary atherosclerosis and in stent stenosis in humans. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , 2002 , 22, 2030-6	9.4	42
26	Reactive Oxygen-Forming Nox5 Links Vascular Smooth Muscle Cell Phenotypic Switching and Extracellular Vesicle-Mediated Vascular Calcification. <i>Circulation Research</i> , 2020 , 127, 911-927	15.7	39
25	The aquaporins. A family of water channel proteins. <i>International Journal of Biochemistry and Cell Biology</i> , 1998 , 30, 169-72	5.6	39
24	Vascular calcification. <i>Current Opinion in Nephrology and Hypertension</i> , 2005 , 14, 361-7	3.5	38
23	Prelamin A impairs 53BP1 nuclear entry by mislocalizing NUP153 and disrupting the Ran gradient. <i>Aging Cell</i> , 2016 , 15, 1039-1050	9.9	37
22	Approaches to the development of selective inhibitors of vascular smooth muscle cell proliferation. <i>Cardiovascular Research</i> , 1993 , 27, 1191-8	9.9	33
21	Calcium and osteoprotegerin regulate IGF1R expression to inhibit vascular calcification. <i>Cardiovascular Research</i> , 2011 , 91, 537-45	9.9	32
20	Neuropathy and the vascular-bone axis in diabetes: lessons from Charcot osteoarthropathy. <i>Osteoporosis International</i> , 2014 , 25, 1197-207	5.3	29
19	Nesprin-1 and actin contribute to nuclear and cytoskeletal defects in lamin A/C-deficient cardiomyopathy. <i>Journal of Molecular and Cellular Cardiology</i> , 2011 , 50, 479-86	5.8	28
18	Autophagy and matrix vesicles: new partners in vascular calcification. <i>Kidney International</i> , 2013 , 83, 984-99	6.9	27
17	Disruption of PCNA-lamins A/C interactions by prelamin A induces DNA replication fork stalling. <i>Nucleus</i> , 2016 , 7, 498-511	3.9	26
16	Mammalian microtubule P-body dynamics are mediated by nesprin-1. <i>Journal of Cell Biology</i> , 2014 , 205, 457-75	7.3	22
15	Inhibition of TNF- α Reverses the Pathological Resorption Pit Profile of Osteoclasts from Patients with Acute Charcot Osteoarthropathy. <i>Journal of Diabetes Research</i> , 2015 , 2015, 917945	3.9	20
14	Human vascular smooth muscle cell culture. <i>Methods in Molecular Biology</i> , 2012 , 806, 251-63	1.4	20

13	Technetium-99m and rhenium-188 complexes with one and two pendant bisphosphonate groups for imaging arterial calcification. <i>Dalton Transactions</i> , 2015 , 44, 4963-75	4.3	18
12	Endoplasmic Reticulum Stress Mediates Vascular Smooth Muscle Cell Calcification via Increased Release of Grp78 (Glucose-Regulated Protein, 78 kDa)-Loaded Extracellular Vesicles. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , 2021 , 41, 898-914	9.4	17
11	ER stress regulates alkaline phosphatase gene expression in vascular smooth muscle cells via an ATF4-dependent mechanism. <i>BMC Research Notes</i> , 2018 , 11, 483	2.3	10
10	Novel use of a Dektak 150 surface profiler unmasks differences in resorption pit profiles between control and Charcot patient osteoclasts. <i>Calcified Tissue International</i> , 2014 , 94, 403-11	3.9	10
9	Runx2 (Runt-Related Transcription Factor 2) Links the DNA Damage Response to Osteogenic Reprogramming and Apoptosis of Vascular Smooth Muscle Cells. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , 2021 , 41, 1339-1357	9.4	9
8	Prelamin A Accumulation Attenuates Rac1 Activity and Increases the Intrinsic Migrational Persistence of Aged Vascular Smooth Muscle Cells. <i>Cells</i> , 2016 , 5,	7.9	8
7	Introduction to the Compendium on calcific aortic valve disease. <i>Circulation Research</i> , 2013 , 113, 176-8	15.7	6
6	SUN1/2 Are Essential for RhoA/ROCK-Regulated Actomyosin Activity in Isolated Vascular Smooth Muscle Cells. <i>Cells</i> , 2020 , 9,	7.9	5
5	Muscle tensions merge to cause a DNA replication crisis. <i>Journal of Cell Biology</i> , 2018 , 217, 1891-1893	7.3	3
4	Design considerations for engineering 3D models to study vascular pathologies in vitro. <i>Acta Biomaterialia</i> , 2021 , 132, 114-128	10.8	2
3	Aspects of Nuclear Envelope Dynamics in Mitotic Cells. <i>Novartis Foundation Symposium</i> , 2008 , 22-34		1
2	Use of cDNA representational difference analysis to identify disease-specific genes in human atherosclerotic plaques. <i>Methods in Molecular Medicine</i> , 1999 , 30, 83-98		1
1	Pressure and stiffness sensing together regulate vascular smooth muscle cell phenotype switching.. <i>Science Advances</i> , 2022 , 8, eabm3471	14.3	1