Craig A Simmons

List of Publications by Year
in descending order

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181
papers

10,315
citations

29994

54
h-index

38300

95
g-index

193
all docs

193
docs citations

193
times ranked

12870
citing authors

#	Article	IF	Citations
1	Calcific Aortic Valve Disease: Not Simply a Degenerative Process. Circulation, 2011, 124, 1783-1791.	1.6	699
2	Dual growth factor delivery and controlled scaffold degradation enhance in vivo bone formation by transplanted bone marrow stromal cells. Bone, 2004, 35, 562-569.	1.4	376
3	Influence of substrate stiffness on the phenotype of heart cells. Biotechnology and Bioengineering, 2010, 105, 1148-1160.	1.7	307
4	Calcification by Valve Interstitial Cells Is Regulated by the Stiffness of the Extracellular Matrix. Arteriosclerosis, Thrombosis, and Vascular Biology, 2009, 29, 936-942.	1.1	294
5	Boning up on Wolff's Law: Mechanical regulation of the cells that make and maintain bone. Journal of Biomechanics, 2010, 43, 108-118.	0.9	290
6	Cyclic strain enhances matrix mineralization by adult human mesenchymal stem cells via the extracellular signal-regulated kinase (ERK1/2) signaling pathway. Journal of Biomechanics, 2003, 36, 1087-1096.	0.9	274
7	Design and formulation of functional pluripotent stem cell-derived cardiac microtissues. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E4698-707.	3.3	252
8	Cellâ€"Matrix Interactions in the Pathobiology of Calcific Aortic Valve Disease. Circulation Research, 2011, 108, 1510-1524.	2.0	248
9	Mesenchymal Stromal/Stem Cells in Regenerative Medicine and Tissue Engineering. Stem Cells International, 2018, 2018, 1-16.	1.2	244
10	A research agenda for improving national Ecological Footprint accounts. Ecological Economics, 2009, 68, 1991-2007.	2.9	239
11	Spatial Heterogeneity of Endothelial Phenotypes Correlates With Side-Specific Vulnerability to Calcification in Normal Porcine Aortic Valves. Circulation Research, 2005, 96, 792-799.	2.0	238
12	Bone Regeneration <i>via</i> a Mineral Substrate and Induced Angiogenesis. Journal of Dental Research, 2004, 83, 204-210.	2.5	188
13	Identification and Characterization of Aortic Valve Mesenchymal Progenitor Cells with Robust Osteogenic Calcification Potential. American Journal of Pathology, 2009, 174, 1109-1119.	1.9	187
14	Macro- and microscale fluid flow systems for endothelial cell biology. Lab on A Chip, 2010, 10, 143-160.	3.1	184
15	Bone regeneration in a rat cranial defect with delivery of PEI-condensed plasmid DNA encoding for bone morphogenetic protein-4 (BMP-4). Gene Therapy, 2005, 12, 418-426.	2.3	182
16	<i>In Situ</i> Mechanical Characterization of the Cell Nucleus by Atomic Force Microscopy. ACS Nano, 2014, 8, 3821-3828.	7.3	176
17	Î²-Catenin Mediates Mechanically Regulated, Transforming Growth Factor-Î²1â€"Induced Myofibroblast Differentiation of Aortic Valve Interstitial Cells. Arteriosclerosis, Thrombosis, and Vascular Biology, 2011, 31, 590-597.	1.1	167
18	A circular cross-section PDMS microfluidics system for replication of cardiovascular flow conditions. Biomaterials, 2010, 31, 3459-3464.	5.7	143

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19	Matrix-dependent adhesion of vascular and valvular endothelial cells in microfluidic channels. Lab on A Chip, 2007, 7, 1759.	3.1	139
20	Osseointegration of sintered porous-surfaced and plasma spray-coated implants: An animal model study of early postimplantation healing response and mechanical stability. , 1999, 47, 127-138.		133
21	Microfabricated arrays for high-throughput screening of cellular response to cyclic substrate deformation. Lab on A Chip, 2010, 10, 227-234.	3.1	129
22	A 3D microfluidic platform incorporating methacrylated gelatin hydrogels to study physiological cardiovascular cellâ€“cell interactions. Lab on A Chip, 2013, 13, 2591.	3.1	126
23	Microfabricated perfusable cardiac biowire: a platform that mimics native cardiac bundle. Lab on A Chip, 2014, 14, 869-882.	3.1	121
24	Mesenchymal stem cell mechanobiology and emerging experimental platforms. Journal of the Royal Society Interface, 2013, 10, 20130179.	1.5	120
25	Mechanobiology of the aortic heart valve. Journal of Heart Valve Disease, 2008, 17, 62-73.	0.5	119
26	Biaxial mechanical testing of human sclera. Journal of Biomechanics, 2010, 43, 1696-1701.	0.9	114
27	Trabecular bone morphology from micro-magnetic resonance imaging. Journal of Bone and Mineral Research, 1996, 11, 286-292.	3.1	112
28	Hemodynamic and Cellular Response Feedback in Calcific Aortic Valve Disease. Circulation Research, 2013, 113, 186-197.	2.0	102
29	Anisotropic stress orients remodelling of mammalian limb bud ectoderm. Nature Cell Biology, 2015, 17, 569-579.	4.6	102
30	A microfabricated platform for high-throughput unconfined compression of micropatterned biomaterial arrays. Biomaterials, 2010, 31, 577-584.	5.7	101
31	The aortic valve microenvironment and its role in calcific aortic valve disease. Cardiovascular Pathology, 2011, 20, 177-182.	0.7	96
32	Animal Models of Calcific Aortic Valve Disease. International Journal of Inflammation, 2011, 2011, 1-18.	0.9	94
33	Simultaneous generation of droplets with different dimensions in parallel integrated microfluidic droplet generators. Soft Matter, 2008, 4, 258-262.	1.2	93
34	A digital microfluidic platform for primary cell culture and analysis. Lab on A Chip, 2012, 12, 369-375.	3.1	89
35	Effects of a bone-like mineral film on phenotype of adult human mesenchymal stem cells in vitro. Biomaterials, 2005, 26, 303-310.	5.7	86
36	Technique for Real-Time Measurements of Endothelial Permeability in a Microfluidic Membrane Chip Using Laser-Induced Fluorescence Detection. Analytical Chemistry, 2010, 82, 808-816.	3.2	86

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37	Emerging Trends in Heart Valve Engineering: Part I. Solutions for Future. Annals of Biomedical Engineering, 2015, 43, 833-843.	1.3	80
38	(Micro)managing the mechanical microenvironment. Integrative Biology (United Kingdom), 2011, 3, 959.	0.6	79
39	Measurement of layer-specific mechanical properties in multilayered biomaterials by micropipette aspiration. Acta Biomaterialia, 2011, 7, 1220-1227.	4.1	78
40	Differences in osseointegration rate due to implant surface geometry can be explained by local tissue strains. Journal of Orthopaedic Research, 2001, 19, 187-194.	1.2	74
41	Method-Based Differences in the Automated Analysis of the Three-Dimensional Morphology of Trabecular Bone. Journal of Bone and Mineral Research, 1997, 12, 942-947.	3.1	73
42	Inelastic behaviour of collagen networks in cellâ€“matrix interactions and mechanosensation. Journal of the Royal Society Interface, 2015, 12, 20141074.	1.5	69
43	The Roles of Matrix Stiffness and ÃŸ-Catenin Signaling in Endothelial-to-Mesenchymal Transition of Aortic Valve Endothelial Cells. Cardiovascular Engineering and Technology, 2018, 9, 158-167.	0.7	69
44	Functional characterization of human coronary artery smooth muscle cells under cyclic mechanical strain in a degradable polyurethane scaffold. Biomaterials, 2011, 32, 4816-4829.	5.7	66
45	Could MRI Be Used To Image Kidney Fibrosis? A Review of Recent Advances and Remaining Barriers. Clinical Journal of the American Society of Nephrology: CJASN, 2017, 12, 1019-1028.	2.2	66
46	Single Cell Deposition and Patterning with a Robotic System. PLoS ONE, 2010, 5, e13542.	1.1	64
47	Osteocyte apoptosis regulates osteoclast precursor adhesion via osteocytic IL-6 secretion and endothelial ICAM-1 expression. Bone, 2012, 50, 104-110.	1.4	64
48	Mechanical stability of the cell nucleus: roles played by the cytoskeleton in nuclear deformation and strain recovery. Journal of Cell Science, 2018, 131, .	1.2	64
49	Effects of Scleral Stiffness Properties on Optic Nerve Head Biomechanics. Annals of Biomedical Engineering, 2010, 38, 1586-1592.	1.3	63
50	Solving the shrinkage-induced PDMS alignment registration issue in multilayer soft lithography. Journal of Micromechanics and Microengineering, 2009, 19, 065015.	1.5	62
51	Methylglyoxal-modified collagen promotes myofibroblast differentiation. Matrix Biology, 2010, 29, 537-548.	1.5	62
52	Osteocyte apoptosis is mechanically regulated and induces angiogenesis in vitro. Journal of Orthopaedic Research, 2011, 29, 523-530.	1.2	62
53	A microfluidic membrane device to mimic critical components of the vascular microenvironment. Biomicrofluidics, 2011, 5, 13409.	1.2	59
54	The elastic properties of valve interstitial cells undergoing pathological differentiation. Journal of Biomechanics, 2012, 45, 882-887.	0.9	59

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55	Integration of statistical modeling and high-content microscopy to systematically investigate cellâ€“substrate interactions. Biomaterials, 2010, 31, 2489-2497.	5.7	57
56	Biomechanical conditioning of tissue engineered heart valves: Too much of a good thing?. Advanced Drug Delivery Reviews, 2016, 96, 161-175.	6.6	55
57	Mechanical regulation of localized and appositional bone formation around bone-interfacing implants. Journal of Biomedical Materials Research Part B, 2001, 55, 63-71.	3.0	52
58	Emerging Trends in Heart Valve Engineering: Part II. Novel and Standard Technologies for Aortic Valve Replacement. Annals of Biomedical Engineering, 2015, 43, 844-857.	1.3	52
59	Inhibition of Pathological Differentiation of Valvular Interstitial Cells by C-Type Natriuretic Peptide. Arteriosclerosis, Thrombosis, and Vascular Biology, 2011, 31, 1881-1889.	1.1	51
60	Comparison of analytical and inverse finite element approaches to estimate cell viscoelastic properties by micropipette aspiration. Journal of Biomechanics, 2009, 42, 2768-2773.	0.9	50
61	Determination of local and global elastic moduli of valve interstitial cells cultured on soft substrates. Journal of Biomechanics, 2013, 46, 1967-1971.	0.9	50
62	Biomechanics of Borrelia burgdorferi Vascular Interactions. Cell Reports, 2016, 16, 2593-2604.	2.9	48
63	Biophysical Characterization of Bladder Cancer Cells with Different Metastatic Potential. Cell Biochemistry and Biophysics, 2014, 68, 241-246.	0.9	47
64	Microfluidic assay for the on-chip electrochemical measurement of cell monolayer permeability. Lab on A Chip, 2019, 19, 1060-1070.	3.1	47
65	Methylglyoxal Inhibits the Binding Step of Collagen Phagocytosis. Journal of Biological Chemistry, 2007, 282, 8510-8520.	1.6	46
66	A study of vascular smooth muscle cell function under cyclic mechanical loading in a polyurethane scaffold with optimized porosity. Acta Biomaterialia, 2010, 6, 4218-4228.	4.1	46
67	Microdevice array-based identification of distinct mechanobiological response profiles in layer-specific valve interstitial cells. Integrative Biology (United Kingdom), 2013, 5, 673.	0.6	46
68	Molecular Markers of Early Orthodontic Tooth Movement. Angle Orthodontist, 2009, 79, 1108-1113.	1.1	44
69	Integrated electrochemical measurement of endothelial permeability in a 3D hydrogel-based microfluidic vascular model. Biosensors and Bioelectronics, 2020, 147, 111757.	5.3	44
70	Hydrogel Substrate Stiffness and Topography Interact to Induce Contact Guidance in Cardiac Fibroblasts. Macromolecular Bioscience, 2012, 12, 1342-1353.	2.1	42
71	Deficiency of Natriuretic Peptide Receptor 2 Promotes Bicuspid Aortic Valves, Aortic Valve Disease, Left Ventricular Dysfunction, and Ascending Aortic Dilatations in Mice. Circulation Research, 2018, 122, 405-416.	2.0	42
72	Biomechanics of Aortic Dissection: A Comparison of Aortas Associated With Bicuspid and Tricuspid Aortic Valves. Journal of the American Heart Association, 2020, 9, e016715.	1.6	42

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73	In Vitro Matured Human Pluripotent Stem Cellâ€“Derived Cardiomyocytes Form Grafts With Enhanced Structure and Function in Injured Hearts. Circulation, 2022, 145, 1412-1426.	1.6	42
74	Lessons from (patho)physiological tissue stiffness and their implications for drug screening, drug delivery and regenerative medicine. Advanced Drug Delivery Reviews, 2011, 63, 269-276.	6.6	38
75	Monocyte/macrophage cytokine activity regulates vascular smooth muscle cell function within a degradable polyurethane scaffold. Acta Biomaterialia, 2014, 10, 1146-1155.	4.1	38
76	Human Pluripotent Stem Cell Mechanobiology: Manipulating the Biophysical Microenvironment for Regenerative Medicine and Tissue Engineering Applications. Stem Cells, 2015, 33, 3187-3196.	1.4	38
77	Deriving vascular smooth muscle cells from mesenchymal stromal cells: Evolving differentiation strategies and current understanding of their mechanisms. Biomaterials, 2017, 145, 9-22.	5.7	38
78	Generating vascular channels within hydrogel constructs using an economical open-source 3D bioprinter and thermoreversible gels. Bioprinting, 2018, 9, 7-18.	2.9	38
79	Precision patterning of PDMS membranes and applications. Journal of Micromechanics and Microengineering, 2008, 18, 037004.	1.5	37
80	Mechanical stimulation and mitogen-activated protein kinase signaling independently regulate osteogenic differentiation and mineralization by calcifying vascular cells. Journal of Biomechanics, 2004, 37, 1531-1541.	0.9	36
81	Immunomodulatory polymeric scaffold enhances extracellular matrix production in cell co-cultures under dynamic mechanical stimulation. Acta Biomaterialia, 2015, 24, 74-86.	4.1	36
82	Emerging Trends in Heart Valve Engineering: Part III. Novel Technologies for Mitral Valve Repair and Replacement. Annals of Biomedical Engineering, 2015, 43, 858-870.	1.3	35
83	Microdevice Platform for Continuous Measurement of Contractility, Beating Rate, and Beating Rhythm of Human-Induced Pluripotent Stem Cell-Cardiomyocytes inside a Controlled Incubator Environment. ACS Applied Materials & Interfaces, 2018, 10, 21173-21183.	4.0	35
84	Aortic Valve. Arteriosclerosis, Thrombosis, and Vascular Biology, 2004, 24, 1331-1333.	1.1	34
85	Emerging Trends in Heart Valve Engineering: Part IV. Computational Modeling and Experimental Studies. Annals of Biomedical Engineering, 2015, 43, 2314-2333.	1.3	34
86	A microfabricated platform with hydrogel arrays for 3D mechanical stimulation of cells. Acta Biomaterialia, 2016, 34, 113-124.	4.1	34
87	Microdevice arrays with strain sensors for 3D mechanical stimulation and monitoring of engineered tissues. Biomaterials, 2018, 172, 30-40.	5.7	34
88	Evaluation of a porcine model of early aortic valve sclerosis. Cardiovascular Pathology, 2014, 23, 289-297.	0.7	32
89	Hydrogels modified with QHREDGS peptide support cardiomyocyte survival in vitro and after sub-cutaneous implantation. Soft Matter, 2010, 6, 5089.	1.2	31
90	Three-dimensional anatomy of the cancellous structures within the proximal femur from computed tomography data. Journal of Orthopaedic Research, 1995, 13, 513-523.	1.2	30

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91	Aortic Valve Mechanics. Journal of the American College of Cardiology, 2009, 53, 1456-1458.	1.2	27
92	Three-dimensional niche stiffness synergizes with Wnt7a to modulate the extent of satellite cell symmetric self-renewal divisions. Molecular Biology of the Cell, 2020, 31, 1703-1713.	0.9	26
93	A microdevice platform for characterizing the effect of mechanical strain magnitudes on the maturation of iPSC-Cardiomyocytes. Biosensors and Bioelectronics, 2021, 175, 112875.	5.3	26
94	Recent Progress Toward Clinical Translation of Tissue-Engineered Heart Valves. Canadian Journal of Cardiology, 2021, 37, 1064-1077.	0.8	26
95	Integrating polyurethane culture substrates into poly(dimethylsiloxane) microdevices. Biomaterials, 2009, 30, 5241-5250.	5.7	25
96	Combinatorial screening of 3D biomaterial properties that promote myofibrogenesis for mesenchymal stromal cell-based heart valve tissue engineering. Acta Biomaterialia, 2017, 58, 34-43.	4.1	24
97	DDR1 (Discoidin Domain Receptor-1)-RhoA (Ras Homolog Family Member A) Axis Senses Matrix Stiffness to Promote Vascular Calcification. Arteriosclerosis, Thrombosis, and Vascular Biology, 2020, 40, 1763-1776.	1.1	24
98	Heart valve regeneration: the need for systems approaches. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2016, 8, 169-182.	6.6	23
99	Tethered Jagged-1 Synergizes with Culture Substrate Stiffness to Modulate Notch-Induced Myogenic Progenitor Differentiation. Cellular and Molecular Bioengineering, 2017, 10, 501-513.	1.0	23
100	B-Cell Deficiency Lowers Blood Pressure in Mice. Hypertension, 2019, 73, 561-570.	1.3	23
101	Combinatorial extracellular matrix microarray identifies novel bioengineered substrates for xeno-free culture of human pluripotent stem cells. Biomaterials, 2020, 248, 120017.	5.7	23
102	The Mechanobiology of Endothelial-to-Mesenchymal Transition in Cardiovascular Disease. Frontiers in Physiology, 2021, 12, 734215.	1.3	23
103	A guide for assessment of myocardial stiffness in health and disease. , 2022, 1, 8-22.		21
104	Polyacrylamide gel substrates that simulate the mechanical stiffness of normal and malignant neuronal tissues increase protoporphyin IX synthesis in glioma cells. Journal of Biomedical Optics, 2015, 20, 098002.	1.4	20
105	Interaction of a block-co-polymeric biomaterial with immunoglobulin G modulates human monocytes towards a non-inflammatory phenotype. Acta Biomaterialia, 2015, 24, 35-43.	4.1	20
106	Microengineered platforms for characterizing the contractile function of in vitro cardiac models. Microsystems and Nanoengineering, 2022, 8, 26.	3.4	19
107	A Rapid, Reliable Method to Isolate High Quality Endothelial RNA from Small Spatially-Defined Locations. Annals of Biomedical Engineering, 2004, 32, 1453-1459.	1.3	18
108	Miniaturized platform with on-chip strain sensors for compression testing of arrayed materials. Lab on A Chip, 2012, 12, 4178.	3.1	18

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109	Augmenting microgel flow viareceptor-ligand binding in the constrained geometries of microchannels. Lab on A Chip, 2009, 9, 286-290.	3.1	16
110	Study of the influence of actin-binding proteins using linear analyses of cell deformability. Soft Matter, 2015, 11, 5435-5446.	1.2	15
111	Cell and Tissue Scale Forces Coregulate Fgfr2 -Dependent Tetrads and Rosettes in the Mouse Embryo. Biophysical Journal, 2017, 112, 2209-2218.	0.2	15
112	Nanoscale reorganization of sarcoplasmic reticulum in pressure-overload cardiac hypertrophy visualized by dSTORM. Scientific Reports, 2019, 9, 7867.	1.6	15
113	A Carbon-Based Biosensing Platform for Simultaneously Measuring the Contraction and Electrophysiology of iPSC-Cardiomyocyte Monolayers. ACS Nano, 2022, 16, 11278-11290.	7.3	15
114	A micromanipulation system for single cell deposition. , 2010, , .		14
115	Semi-confined compression of microfabricated polymerized biomaterial constructs. Journal of Micromechanics and Microengineering, 2011, 21, 054014.	1.5	14
116	Techniques for isolating and purifying porcine aortic valve endothelial cells. Journal of Heart Valve Disease, 2008, 17, 674-81.	0.5	14
117	Generating favorable growth factor and protease release profiles to enable extracellular matrix accumulation within an in vitro tissue engineering environment. Acta Biomaterialia, 2017, 54, 81-94.	4.1	13
118	Combinatorial screen of dynamic mechanical stimuli for predictive control of MSC mechano-responsiveness. Science Advances, 2021, 7, .	4.7	13
119	Substrate architecture and fluid-induced shear stress during chondrocyte seeding: Role of Î±5Î²1 integrin. Biomaterials, 2008, 29, 2477-2489.	5.7	12
120	The use of material flow analysis and the ecological footprint in regional policy-making: application and insights from Northern Ireland. Local Environment, 2011, 16, 165-179.	1.1	12
121	Laser ablation to investigate cell and tissue mechanics in vivo. , 2015, , 128-147.		12
122	An improved texture correlation algorithm to measure substrateâ€"cytoskeletal network strain transfer under large compressive strain. Journal of Biomechanics, 2012, 45, 76-82.	0.9	11
123	Modeling cardiac complexity: Advancements in myocardial models and analytical techniques for physiological investigation and therapeutic development <i>in vitro</i>. APL Bioengineering, 2019, 3, 011501.	3.3	11
124	Paracrine signalling from monocytes enables desirable extracellular matrix accumulation and temporally appropriate phenotype of vascular smooth muscle cell-like cells derived from adipose stromal cells. Acta Biomaterialia, 2020, 103, 129-141.	4.1	11
125	The implementation of physiological afterload during ex situ heart perfusion augments prediction of posttransplant function. American Journal of Physiology - Heart and Circulatory Physiology, 2020, 318, H25-H33.	1.5	11
126	Dynamic Bioreactors with Integrated Microfabricated Devices for Mechanobiological Screening. Tissue Engineering - Part C: Methods, 2019, 25, 581-592.	1.1	10

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127	Rapid assembly of PMMA microfluidic devices with PETE membranes for studying the endothelium. Sensors and Actuators B: Chemical, 2022, 356, 131342.	4.0	10
128	An Undergraduate Lab (on-a-Chip): Probing Single Cell Mechanics on a Microfluidic Platform. Cellular and Molecular Bioengineering, 2010, 3, 319-330.	1.0	9
129	Positive-contrast cellular MRI of embryonic stem cells for tissue regeneration using a highly efficient<i>T</i>₁MRI contrast agent. Journal of Magnetic Resonance Imaging, 2016, 44, 1456-1463.	1.9	9
130	Culture on Tissueâ€Specific Coatings Derived from Î±â€Amylaseâ€Digested Decellularized Adipose Tissue Enhances the Proliferation and Adipogenic Differentiation of Human Adiposeâ€Derived Stromal Cells. Biotechnology Journal, 2020, 15, 1900118.	1.8	9
131	The Implementation of an Adjustable Afterload Module for Ex Situ Heart Perfusion. Cardiovascular Engineering and Technology, 2020, 11, 96-110.	0.7	9
132	Computational analysis of integrated biosensing and shear flow in a microfluidic vascular model. AIP Advances, 2017, 7, 115116.	0.6	8
133	Functional culture and in vitro genetic and small-molecule manipulation of adult mouse cardiomyocytes. Communications Biology, 2020, 3, 229.	2.0	8
134	Dependency of energy loss on strain rate, strain magnitude and preload: Towards development of a novel biomarker for aortic aneurysm dissection risk. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 124, 104736.	1.5	8
135	Ascending aortic aneurysm haemodynamics are associated with aortic wall biomechanical properties. European Journal of Cardio-thoracic Surgery, 2022, 61, 367-375.	0.6	7
136	Porcine Umbilical Cord Perivascular Cells for Preclinical Testing of Tissue-Engineered Heart Valves. Tissue Engineering - Part C: Methods, 2021, 27, 35-46.	1.1	6
137	Development of a three-dimensional in vitro model system to study orthodontic tooth movement. Archives of Oral Biology, 2013, 58, 1498-1510.	0.8	5
138	Differential Regulation of Extracellular Matrix Components Using Different Vitamin C Derivatives in Mono- and Coculture Systems. ACS Biomaterials Science and Engineering, 2018, 4, 3768-3778.	2.6	5
139	Assessment of fibrin-collagen co-gels for generating microvessels ex vivo using endothelial cell-lined microfluidics and multipotent stromal cell (MSC)-induced capillary morphogenesis. Biomedical Materials (Bristol), 2021, 16, 035005.	1.7	5
140	Mitigating the non-specific uptake of immunomagnetic microparticles enables the extraction of endothelium from human fat. Communications Biology, 2021, 4, 1205.	2.0	5
141	Design of a Mechanobioreactor to Apply Anisotropic, Biaxial Strain to Large Thin Biomaterials for Tissue Engineered Heart Valve Applications. Annals of Biomedical Engineering, 2022, 50, 1073-1089.	1.3	5
142	Microfabricated Devices for Studying Cellular Biomechanics and Mechanobiology. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2010, , 145-175.	0.7	4
143	Heart Valve Mechanobiology in Development and Disease. , 2016, , 255-276.		4
144	Alterations of MEK1/2-ERK1/2, IFNÎ³ and Smad2/3 associated Signalling pathways during cryopreservation of ASCs affect their differentiation towards VSMC-like cells. Stem Cell Research, 2018, 32, 115-125.	0.3	4

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145	Taking bioengineered heart valves from faulty to functional. Nature, 2018, 559, 42-43.	13.7	4
146	Primed Left Ventricle Heart Perfusion Creates Physiological Aortic Pressure in Porcine Hearts. ASAIO Journal, 2020, 66, 55-63.	0.9	4
147	Stretch-boosted cell-mediated vascularization. Nature Biomedical Engineering, 2021, 5, 6-7.	11.6	4
148	Microfabricated Platforms for Mechanically Dynamic Cell Culture. Journal of Visualized Experiments, 2010, , .	0.2	3
149	A simple method to estimate the exponential material parameters of heart valve tissue based on analogy between uniaxial tension and micropipette aspiration. Biomechanics and Modeling in Mechanobiology, 2013, 12, 1283-1290.	1.4	3
150	Micro- and nanotools to probe cancer cell mechanics and mechanobiology. , 0, , 169-185.		3
151	Mechanical and Matrix Regulation of Valvular Fibrosis. , 2015, , 23-53.		3
152	An SCPPPQ1/LAM332 protein complex enhances the adhesion and migration of oral epithelial cells: Implications for dentogingival regeneration. Acta Biomaterialia, 2022, 147, 209-220.	4.1	3
153	Regulation of Cellular Response to Mechanical Signals by Matrix Design. , 2003, , 291-304.		2
154	Bone cell mechanobiology using micro- and nano-techniques. , 2015, , 245-265.		2
155	A microfabricated platform with on-chip strain sensing and hydrogel arrays for 3D mechanical stimulation of cells. , 2016, , .		2
156	Influence of Cryopreservation on the Differentiation of Adipose Derived Stromal Cells Towards Vascular Smooth Muscle Cells. Atherosclerosis Supplements, 2018, 32, 143-144.	1.2	2
157	Editorial: Special Issue on Heart Valve Mechanobiology. Cardiovascular Engineering and Technology, 2018, 9, 121-125.	0.7	2
158	A127. Design of an in vitro microfluidic cell culture system to study aortic valve endothelial cells under shear stress. Journal of Molecular and Cellular Cardiology, 2006, 40, 901.	0.9	1
159	Characterization of the Elasticity of Valve Interstitial Cells on Soft Substrates Using Atomic Force Microscopy. , 2012, , .		1
160	Mechanobiological stimulation of tissue engineered blood vessels. , 0, , 227-244.		1
161	Mechanical regulation of localized and appositional bone formation around boneâ€interfacing implants. Journal of Biomedical Materials Research Part B, 2001, 55, 63-71.	3.0	1
162	Single Cell Deposition. Methods in Cell Biology, 2012, 112, 403-420.	0.5	1

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163	Searching for a physiologically meaningful parameter for aortic biomechanics â€“ is Energy Loss the way?. JTCVS Open, 2022, , .	0.2	1
164	Hearts by design. Science, 2022, 377, 148-150.	6.0	1
165	A50. Spatial transcriptional profiling of aortic valve interstitial cells. Journal of Molecular and Cellular Cardiology, 2006, 40, 901.	0.9	0
166	The interstitium. , 0, , 240-249.		0
167	Comparison of Three Material Models to Predict the Time-Dependent Deformation of a Single Cell Under Micropipette Aspiration. , 2008, , .		0
168	A Novel Device for the Microindentation of Soft Biomaterials With Application to Aortic Valve Leaflets. , 2013, , .		0
169	Mechanical characterization of cancer cell nuclei in situ. , 2014, , .		0
170	Microscale generation of dynamic forces in cell culture systems. , 0, , 47-68.		0
171	Study of tumor angiogenesis using microfluidic approaches. , 0, , 330-346.		0
172	Microdevice arrays for identifying 3D mechanical stimulation conditions in tissue engineering. , 2017, , .		0
173	The Requirement of B-cells for Renal and Blood Pressure Homeostasis. Atherosclerosis Supplements, 2018, 32, 108.	1.2	0
174	Mechanical Strain-induced Reactive Oxygen Species and Their Role in Valve Interstitial Cell Calcification. Atherosclerosis Supplements, 2018, 32, 107.	1.2	0
175	The focal mechanical properties of normal and diseased porcine aortic valve tissue measured by a novel microindentation device. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 115, 104245.	1.5	0
176	Regulation of valvular interstitial cell phenotype by matrix mechanics involves alphaâ€smooth muscle actin. FASEB Journal, 2008, 22, 174.5.	0.2	0
177	Î²â€Catenin mediates TGFâ€Î²1â€induced myofibroblast differentiation in a matrix stiffnessâ€dependent manner: implication to aortic valve sclerosis. FASEB Journal, 2010, 24, 110.3.	0.2	0
178	The Effects of Cell Contraction and Loss of Adhesion on the Apoptosis of Valve Interstitial Cells. , 2010, , .		0
179	Characterization of Early Porcine Aortic Valve Disease. , 2012, , .		0
180	Proteoglycan-Rich Leaflet Thickening in Diet-Induced Early Aortic Valve Disease. , 2012, , .		0

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181	Regulation of TAZ Expression by Cyclic Stretch. FASEB Journal, 2020, 34, 1-1.	0.2	0