Christopher S Chen

List of Publications by Citations

255 papers	36,386 citations	91 h-index	189 g-index
330 ext. papers	40,999 ext. citations	9.8 avg, IF	7.55 L-index

#	Paper	IF	Citations
255	Cell shape, cytoskeletal tension, and RhoA regulate stem cell lineage commitment. *Developmental Cell*, **2004**, 6, 483-95	10.2	3327
254	Cells lying on a bed of microneedles: an approach to isolate mechanical force. *Proceedings of the National Academy of Sciences of the United States of America*, **2003**, 100, 1484-9	11.5	1558
253	Control of stem cell fate by physical interactions with the extracellular matrix. *Cell Stem Cell*, **2009**, 5, 17-26	18	1459
252	Rapid casting of patterned vascular networks for perfusable engineered three-dimensional tissues. *Nature Materials*, **2012**, 11, 768-74	27	1402
251	Deconstructing the third dimension: how 3D culture microenvironments alter cellular cues. *Journal of Cell Science*, **2012**, 125, 3015-24	5.3	1055
250	Measuring mechanical tension across vinculin reveals regulation of focal adhesion dynamics. *Nature* , **2010**, 466, 263-6	50.4	1031
249	Degradation-mediated cellular traction directs stem cell fate in covalently crosslinked three-dimensional hydrogels. *Nature Materials*, **2013**, 12, 458-65	27	837
248	Mechanical regulation of cell function with geometrically modulated elastomeric substrates. *Nature Methods*, **2010**, 7, 733-6	21.6	804
247	Emergent patterns of growth controlled by multicellular form and mechanics. *Proceedings of the National Academy of Sciences of the United States of America*, **2005**, 102, 11594-9	11.5	659
246	Mechanotransduction in development: a growing role for contractility. *Nature Reviews Molecular Cell Biology*, **2009**, 10, 34-43	48.7	589
245	Micropatterned surfaces for control of cell shape, position, and function. *Biotechnology Progress*, **1998**, 14, 356-63	2.8	579
244	Mechanical tugging force regulates the size of cell-cell junctions. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 9944-9	11.5	539
243	Nanopattern-induced changes in morphology and motility of smooth muscle cells. *Biomaterials*, **2005**, 26, 5405-13	15.6	537
242	Versatile, fully automated, microfluidic cell culture system. *Analytical Chemistry*, **2007**, 79, 8557-63	7.8	524
241	Measurement of mechanical tractions exerted by cells in three-dimensional matrices. *Nature Methods*, **2010**, 7, 969-71	21.6	444
240	Cell shape provides global control of focal adhesion assembly. *Biochemical and Biophysical Research Communications*, **2003**, 307, 355-61	3.4	439
239	Mechanotransduction at cell-matrix and cell-cell contacts. *Annual Review of Biomedical Engineering*, **2004**, 6, 275-302	12	437

238	Control of cyclin D1, p27(Kip1), and cell cycle progression in human capillary endothelial cells by cell shape and cytoskeletal tension. *Molecular Biology of the Cell*, **1998**, 9, 3179-93	3.5	406
237	Mechanotransduction - a field pulling together?. *Journal of Cell Science*, **2008**, 121, 3285-92	5.3	400
236	HEART DISEASE. Titin mutations in iPS cells define sarcomere insufficiency as a cause of dilated cardiomyopathy. *Science*, **2015**, 349, 982-6	33.3	379
235	Microcontact printing: A tool to pattern. *Soft Matter*, **2007**, 3, 168-177	3.6	373
234	Cell-mediated fibre recruitment drives extracellular matrix mechanosensing in engineered fibrillar microenvironments. *Nature Materials*, **2015**, 14, 1262-8	27	356
233	Fluid shear stress on endothelial cells modulates mechanical tension across VE-cadherin and PECAM-1. *Current Biology*, **2013**, 23, 1024-30	6.3	350
232	Geometric control of switching between growth, apoptosis, and differentiation during angiogenesis using micropatterned substrates. *In Vitro Cellular and Developmental Biology - Animal*, **1999**, 35, 441-8	2.6	350
231	Emergence of patterned stem cell differentiation within multicellular structures. *Stem Cells*, **2008**, 26, 2921-7	5.8	345
230	A hitchhiker's guide to mechanobiology. *Developmental Cell*, **2011**, 21, 35-47	10.2	343
229	Biomimetic model to reconstitute angiogenic sprouting morphogenesis in vitro. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 6712-7	11.5	335
228	Matrix rigidity regulates a switch between TGF-β1-induced apoptosis and epithelial-mesenchymal transition. *Molecular Biology of the Cell*, **2012**, 23, 781-91	3.5	322
227	Forcing stem cells to behave: a biophysical perspective of the cellular microenvironment. *Annual Review of Biophysics*, **2012**, 41, 519-42	21.1	319
226	Microfabricated tissue gauges to measure and manipulate forces from 3D microtissues. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 10097-102	11.5	307
225	Bioresponsive mesoporous silica nanoparticles for triggered drug release. *Journal of the American Chemical Society*, **2011**, 133, 19582-5	16.4	303
224	Stem cell shape regulates a chondrogenic versus myogenic fate through Rac1 and N-cadherin. *Stem Cells*, **2010**, 28, 564-72	5.8	300
223	Using Mixed Self-Assembled Monolayers Presenting RGD and (EG)3OH Groups To Characterize Long-Term Attachment of Bovine Capillary Endothelial Cells to Surfaces. *Journal of the American Chemical Society*, **1998**, 120, 6548-6555	16.4	300
222	Cell shape and substrate rigidity both regulate cell stiffness. *Biophysical Journal*, **2011**, 100, L25-7	2.9	298
221	A microfabricated platform to measure and manipulate the mechanics of engineered cardiac microtissues. *Tissue Engineering - Part A*, **2012**, 18, 910-9	3.9	289

220	Magnetic microposts as an approach to apply forces to living cells. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 14553-8	11.5	276
219	Measuring cell-generated forces: a guide to the available tools. *Nature Methods*, **2016**, 13, 415-23	21.6	274
218	Patterning Mammalian Cells Using Elastomeric Membranes. *Langmuir*, **2000**, 16, 7811-7819	4	271
217	Nanotechnology for cell-substrate interactions. *Annals of Biomedical Engineering*, **2006**, 34, 59-74	4.7	262
216	Repositioning of cells by mechanotaxis on surfaces with micropatterned Young modulus. *Journal of Biomedical Materials Research Part B*, **2003**, 66, 605-14		244
215	Fluid shear stress threshold regulates angiogenic sprouting. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 7968-73	11.5	237
214	Cytoskeleton-based forecasting of stem cell lineage fates. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 610-5	11.5	236
213	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	11.5	209
212	Cell-cell signaling by direct contact increases cell proliferation via a PI3K-dependent signal. *FEBS Letters*, **2002**, 514, 238-42	3.8	207
211	Human Organ Chip Models Recapitulate Orthotopic Lung Cancer Growth, Therapeutic Responses, and Tumor Dormancy In Vitro. *Cell Reports*, **2017**, 21, 508-516	10.6	204
210	Selective Deposition of Proteins and Cells in Arrays of Microwells. *Langmuir*, **2001**, 17, 2828-2834	4	201
209	Cell polarity triggered by cell-cell adhesion via E-cadherin. *Journal of Cell Science*, **2009**, 122, 905-11	5.3	199
208	Formation and optogenetic control of engineered 3D skeletal muscle bioactuators. *Lab on A Chip*, **2012**, 12, 4976-85	7.2	198
207	Multidimensional traction force microscopy reveals out-of-plane rotational moments about focal adhesions. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 881-6	11.5	198
206	Geometric control of vascular networks to enhance engineered tissue integration and function. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 7586-91	11.5	197
205	Activation of ROCK by RhoA is regulated by cell adhesion, shape, and cytoskeletal tension. *Experimental Cell Research*, **2007**, 313, 3616-23	4.2	196
204	Simple approach to micropattern cells on common culture substrates by tuning substrate wettability. *Tissue Engineering*, **2004**, 10, 865-72		191
203	Long-range force transmission in fibrous matrices enabled by tension-driven alignment of fibers. *Biophysical Journal*, **2014**, 107, 2592-603	2.9	190

202	Assaying stem cell mechanobiology on microfabricated elastomeric substrates with geometrically modulated rigidity. *Nature Protocols*, **2011**, 6, 187-213	18.8	190
201	Bioactive hydrogels made from step-growth derived PEG-peptide macromers. *Biomaterials*, **2010**, 31, 3736-43	15.6	187
200	Vascular Tissue Engineering: Progress, Challenges, and Clinical Promise. *Cell Stem Cell*, **2018**, 22, 340-354	18	185
199	Endothelial cell sensing of flow direction. *Arteriosclerosis, Thrombosis, and Vascular Biology*, **2013**, 33, 2130-6	9.4	181
198	Fibrous hyaluronic acid hydrogels that direct MSC chondrogenesis through mechanical and adhesive cues. *Biomaterials*, **2013**, 34, 5571-80	15.6	177
197	Bone morphogenetic protein-2-induced signaling and osteogenesis is regulated by cell shape, RhoA/ROCK, and cytoskeletal tension. *Stem Cells and Development*, **2012**, 21, 1176-86	4.4	177
196	How vinculin regulates force transmission. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 9788-93	11.5	175
195	Engineering biomaterials to control cell function. *Materials Today*, **2005**, 8, 28-35	21.8	166
194	A non-canonical Notch complex regulates adherens junctions and vascular barrier function. *Nature*, **2017**, 552, 258-262	50.4	163
193	The mechanical regulation of integrin-cadherin crosstalk organizes cells, signaling and forces. *Journal of Cell Science*, **2016**, 129, 1093-100	5.3	157
192	Vascular endothelial-cadherin regulates cytoskeletal tension, cell spreading, and focal adhesions by stimulating RhoA. *Molecular Biology of the Cell*, **2004**, 15, 2943-53	3.5	156
191	Cell adhesion and mechanical stimulation in the regulation of mesenchymal stem cell differentiation. *Journal of Cellular and Molecular Medicine*, **2013**, 17, 823-32	5.6	152
190	Microcontact Printing of Proteins on Mixed Self-Assembled Monolayers. *Langmuir*, **2002**, 18, 519-523	4	150
189	Matrix degradability controls multicellularity of 3D cell migration. *Nature Communications*, **2017**, 8, 371	17.4	145
188	An inhibitory role for FAK in regulating proliferation: a link between limited adhesion and RhoA-ROCK signaling. *Journal of Cell Biology*, **2006**, 174, 277-88	7.3	145
187	Tensegrity and mechanoregulation: from skeleton to cytoskeleton. *Osteoarthritis and Cartilage*, **1999**, 7, 81-94	6.2	145
186	Amino Acid Restriction Triggers Angiogenesis via GCN2/ATF4 Regulation of VEGF and HS Production. *Cell*, **2018**, 173, 117-129.e14	56.2	144
185	Fabrication of aligned microstructures with a single elastomeric stamp. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 1758-62	11.5	142

184	Tissue Engineering at the Micro-Scale **1999**, 2, 131-144		141
183	How cells sense extracellular matrix stiffness: a material perspective. *Current Opinion in Biotechnology*, **2013**, 24, 948-53	11.4	140
182	Mechanical regulation of glycolysis via cytoskeleton architecture. *Nature*, **2020**, 578, 621-626	50.4	137
181	A DNA-based molecular probe for optically reporting cellular traction forces. *Nature Methods*, **2014**, 11, 1229-32	21.6	133
180	Geometrically controlled endothelial tubulogenesis in micropatterned gels. *Tissue Engineering - Part A*, **2010**, 16, 2255-63	3.9	127
179	Microfluidics embedded within extracellular matrix to define vascular architectures and pattern diffusive gradients. *Lab on A Chip*, **2013**, 13, 3246-52	7.2	126
178	Degradation of Micropatterned Surfaces by Cell-Dependent and -Independent Processes *Langmuir*, **2003**, 19, 1493-1499	4	125
177	Assembly of multicellular constructs and microarrays of cells using magnetic nanowires. *Lab on A Chip*, **2005**, 5, 598-605	7.2	120
176	Dielectrophoretic registration of living cells to a microelectrode array. *Biosensors and Bioelectronics* , **2004**, 19, 1765-74	11.8	119
175	Dielectrophoretic registration of living cells to a microelectrode array. *Biosensors and Bioelectronics* , **2004**, 19, 771-80	11.8	118
174	Cell traction forces direct fibronectin matrix assembly. *Biophysical Journal*, **2009**, 96, 729-38	2.9	117
173	Remodeling of fibrous extracellular matrices by contractile cells: predictions from discrete fiber network simulations. *Biophysical Journal*, **2014**, 107, 1829-1840	2.9	112
172	Cell-geometry-dependent changes in plasma membrane order direct stem cell signalling and fate. *Nature Materials*, **2018**, 17, 237-242	27	108
171	Facile modification of collagen directed by collagen mimetic peptides. *Journal of the American Chemical Society*, **2005**, 127, 4130-1	16.4	106
170	VE-cadherin simultaneously stimulates and inhibits cell proliferation by altering cytoskeletal structure and tension. *Journal of Cell Science*, **2003**, 116, 3571-81	5.3	104
169	Designer biomaterials for mechanobiology. *Nature Materials*, **2017**, 16, 1164-1168	27	103
168	Cadherins, RhoA, and Rac1 are differentially required for stretch-mediated proliferation in endothelial versus smooth muscle cells. *Circulation Research*, **2007**, 101, e44-52	15.7	102
167	Optimization of yield in magnetic cell separations using nickel nanowires of different lengths. *Biotechnology Progress*, **2005**, 21, 509-15	2.8	100

166	In situ expansion of engineered human liver tissue in a mouse model of chronic liver disease. *Science Translational Medicine*, **2017**, 9,	17.5	99
165	Microengineering the Environment of Mammalian Cells in Culture. *MRS Bulletin*, **2005**, 30, 194-201	3.2	95
164	Tumor vessel normalization after aerobic exercise enhances chemotherapeutic efficacy. *Oncotarget* , **2016**, 7, 65429-65440	3.3	89
163	Cell-Cell Contact Area Affects Notch Signaling and Notch-Dependent Patterning. *Developmental Cell*, **2017**, 40, 505-511.e6	10.2	86
162	Augmentation of integrin-mediated mechanotransduction by hyaluronic acid. *Biomaterials*, **2014**, 35, 71-82	15.6	86
161	E-cadherin engagement stimulates proliferation via Rac1. *Journal of Cell Biology*, **2006**, 173, 431-41	7.3	86
160	Differentiation alters stem cell nuclear architecture, mechanics, and mechano-sensitivity. *ELife*, **2016**, 5,	8.9	86
159	Myosin II controls cellular branching morphogenesis and migration in three dimensions by minimizing cell-surface curvature. *Nature Cell Biology*, **2015**, 17, 137-47	23.4	84
158	Epstein-Barr virus-encoded EBNA2 alters immune checkpoint PD-L1 expression by downregulating miR-34a in B-cell lymphomas. *Leukemia*, **2019**, 33, 132-147	10.7	81
157	Myofibrillar architecture in engineered cardiac myocytes. *Circulation Research*, **2008**, 103, 340-2	15.7	81
156	Micron-scale spatially patterned, covalently immobilized vascular endothelial growth factor on hydrogels accelerates endothelial tubulogenesis and increases cellular angiogenic responses. *Tissue Engineering - Part A*, **2011**, 17, 221-9	3.9	80
155	Microfabricated silicone elastomeric post arrays for measuring traction forces of adherent cells. *Methods in Cell Biology*, **2007**, 83, 313-28	1.8	80
154	Laminar flow downregulates Notch activity to promote lymphatic sprouting. *Journal of Clinical Investigation*, **2017**, 127, 1225-1240	15.9	77
153	Cell biology. Deconstructing dimensionality. *Science*, **2013**, 339, 402-4	33.3	76
152	Force Generation via β-Cardiac Myosin, Titin, and α-Actinin Drives Cardiac Sarcomere Assembly from Cell-Matrix Adhesions. *Developmental Cell*, **2018**, 44, 87-96.e5	10.2	75
151	Cellular forces and matrix assembly coordinate fibrous tissue repair. *Nature Communications*, **2016**, 7, 11036	17.4	74
150	Decoupling cell and matrix mechanics in engineered microtissues using magnetically actuated microcantilevers. *Advanced Materials*, **2013**, 25, 1699-705	24	74
149	Immobilization of growth factors on collagen scaffolds mediated by polyanionic collagen mimetic peptides and its effect on endothelial cell morphogenesis. *Biomacromolecules*, **2008**, 9, 2929-36	6.9	72

148	Cellular and multicellular form and function. *Advanced Drug Delivery Reviews*, **2007**, 59, 1319-28	18.5	72
147	Three-dimensional biomimetic vascular model reveals a RhoA, Rac1, and -cadherin balance in mural cell-endothelial cell-regulated barrier function. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, 8758-8763	11.5	71
146	Measuring traction forces of motile dendritic cells on micropost arrays. *Biophysical Journal*, **2011**, 101, 2620-8	2.9	68
145	Myosin Sequestration Regulates Sarcomere Function, Cardiomyocyte Energetics, and Metabolism, Informing the Pathogenesis of Hypertrophic Cardiomyopathy. *Circulation*, **2020**, 141, 828-842	16.7	66
144	Force-induced fibronectin assembly and matrix remodeling in a 3D microtissue model of tissue morphogenesis. *Integrative Biology (United Kingdom)*, **2012**, 4, 1164-74	3.7	62
143	Microfabricated blood vessels for modeling the vascular transport barrier. *Nature Protocols*, **2019**, 14, 1425-1454	18.8	61
142	Forms, forces, and stem cell fate. *Current Opinion in Cell Biology*, **2014**, 31, 92-7	9	61
141	Multiscale model predicts increasing focal adhesion size with decreasing stiffness in fibrous matrices. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, E4549-E4555	11.5	60
140	A biomimetic pancreatic cancer on-chip reveals endothelial ablation via ALK7 signaling. *Science Advances*, **2019**, 5, eaav6789	14.3	60
139	HeLiVa platform: integrated heart-liver-vascular systems for drug testing in human health and disease. *Stem Cell Research and Therapy*, **2013**, 4 Suppl 1, S8	8.3	60
138	Activation of beta 1 but not beta 3 integrin increases cell traction forces. *FEBS Letters*, **2013**, 587, 763-9	3.8	58
137	Contact inhibition of locomotion probabilities drive solitary versus collective cell migration. *Journal of the Royal Society Interface*, **2013**, 10, 20130717	4.1	58
136	Finite-element analysis of the adhesion-cytoskeleton-nucleus mechanotransduction pathway during endothelial cell rounding: axisymmetric model. *Journal of Biomechanical Engineering*, **2005**, 127, 594-600	2.1	58
135	Micropatterned dynamically adhesive substrates for cell migration. *Langmuir*, **2010**, 26, 17733-8	4	57
134	SarcTrack. *Circulation Research*, **2019**, 124, 1172-1183	15.7	56
133	Magnetic microposts for mechanical stimulation of biological cells: fabrication, characterization, and analysis. *Review of Scientific Instruments*, **2008**, 79, 044302	1.7	55
132	Selective Noncovalent Adsorption of Protein to Bifunctional Metallic Nanowire Surfaces. *Langmuir*, **2003**, 19, 9580-9582	4	54
131	Engineered materials and the cellular microenvironment: a strengthening interface between cell biology and bioengineering. *Trends in Cell Biology*, **2010**, 20, 705-14	18.3	53

130	Characterization of the nuclear deformation caused by changes in endothelial cell shape. *Journal of Biomechanical Engineering*, **2004**, 126, 552-8	2.1	52
129	Rac1 is deactivated at integrin activation sites through an IQGAP1-filamin-A-RacGAP1 pathway. *Journal of Cell Science*, **2013**, 126, 4121-35	5.3	51
128	Engineering amount of cell-cell contact demonstrates biphasic proliferative regulation through RhoA and the actin cytoskeleton. *Experimental Cell Research*, **2008**, 314, 2846-54	4.2	51
127	Integrative Analysis of PRKAG2 Cardiomyopathy iPS and Microtissue Models Identifies AMPK as a Regulator of Metabolism, Survival, and Fibrosis. *Cell Reports*, **2016**, 17, 3292-3304	10.6	51
126	A proteomic approach reveals integrin activation state-dependent control of microtubule cortical targeting. *Nature Communications*, **2015**, 6, 6135	17.4	50
125	Subcellular spatial segregation of integrin subtypes by patterned multicomponent surfaces. *Integrative Biology (United Kingdom)*, **2011**, 3, 560-7	3.7	50
124	Degradable hydrogels derived from PEG-diacrylamide for hepatic tissue engineering. *Journal of Biomedical Materials Research - Part A*, **2015**, 103, 3331-8	5.4	49
123	Adhesive and mechanical regulation of mesenchymal stem cell differentiation in human bone marrow and periosteum-derived progenitor cells. *Biology Open*, **2012**, 1, 1058-68	2.2	47
122	Rac-dependent cyclin D1 gene expression regulated by cadherin- and integrin-mediated adhesion. *Journal of Cell Science*, **2008**, 121, 226-33	5.3	47
121	Extracellular matrix alignment dictates the organization of focal adhesions and directs uniaxial cell migration. *APL Bioengineering*, **2018**, 2, 046107	6.6	47
120	Force-driven evolution of mesoscale structure in engineered 3D microtissues and the modulation of tissue stiffening. *Biomaterials*, **2014**, 35, 5056-64	15.6	45
119	Mapping calcium phosphate activated gene networks as a strategy for targeted osteoinduction of human progenitors. *Biomaterials*, **2013**, 34, 4612-21	15.6	44
118	Control of surface chemistry, substrate stiffness, and cell function in a novel terpolymer methacrylate library. *Langmuir*, **2011**, 27, 1891-9	4	44
117	Development and characterization of a 3D multicell microtissue culture model of airway smooth muscle. *American Journal of Physiology - Lung Cellular and Molecular Physiology*, **2013**, 304, L4-16	5.8	43
116	From Simple to Architecturally Complex Hydrogel Scaffolds for Cell and Tissue Engineering Applications: Opportunities Presented by Two-Photon Polymerization. *Advanced Healthcare Materials*, **2020**, 9, e1901217	10.1	43
115	Biomimetic on-a-chip platforms for studying cancer metastasis. *Current Opinion in Chemical Engineering*, **2016**, 11, 20-27	5.4	41
114	Decoupling diffusional from dimensional control of signaling in 3D culture reveals a role for myosin in tubulogenesis. *Journal of Cell Science*, **2010**, 123, 2877-83	5.3	41
113	Forces and mechanotransduction in 3D vascular biology. *Current Opinion in Cell Biology*, **2016**, 42, 73-79	9	41

112	Patterning vascular networks in vivo for tissue engineering applications. *Tissue Engineering - Part C: Methods*, **2015**, 21, 509-17	2.9	39
111	Necking and failure of constrained 3D microtissues induced by cellular tension. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 20923-8	11.5	38
110	N-Cadherin Induction by ECM Stiffness and FAK Overrides the Spreading Requirement for Proliferation of Vascular Smooth Muscle Cells. *Cell Reports*, **2015**, 10, 1477-1486	10.6	38
109	Mechanical Forces in Endothelial Cells during Firm Adhesion and Early Transmigration of Human Monocytes. *Cellular and Molecular Bioengineering*, **2010**, 3, 50-59	3.9	37
108	Strategies for engineering the adhesive microenvironment. *Journal of Mammary Gland Biology and Neoplasia*, **2004**, 9, 405-17	2.4	37
107	Substrates with engineered step changes in rigidity induce traction force polarity and durotaxis. *Cellular and Molecular Bioengineering*, **2014**, 7, 26-34	3.9	36
106	Tissue-engineered, hydrogel-based endothelial progenitor cell therapy robustly revascularizes ischemic myocardium and preserves ventricular function. *Journal of Thoracic and Cardiovascular Surgery*, **2014**, 148, 1090-7; discussion 1097-8	1.5	36
105	miR-125b Is an adhesion-regulated microRNA that protects mesenchymal stem cells from anoikis. *Stem Cells*, **2012**, 30, 956-64	5.8	36
104	Shear force at the cell-matrix interface: enhanced analysis for microfabricated post array detectors. *Mcb Mechanics and Chemistry of Biosystems*, **2005**, 2, 1-16		36
103	Modeling Monogenic Diabetes using Human ESCs Reveals Developmental and Metabolic Deficiencies Caused by Mutations in HNF1A. *Cell Stem Cell*, **2019**, 25, 273-289.e5	18	35
102	Repressor transcription factor 7-like 1 promotes adipogenic competency in precursor cells. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 16271-6	11.5	33
101	3D culture models of tissues under tension. *Journal of Cell Science*, **2017**, 130, 63-70	5.3	33
100	Acute slowing of cardiac conduction in response to myofibroblast coupling to cardiomyocytes through N-cadherin. *Journal of Molecular and Cellular Cardiology*, **2014**, 68, 29-37	5.8	32
99	ATF4 licenses C/EBP activity in human mesenchymal stem cells primed for adipogenesis. *ELife*, **2015**, 4, e06821	8.9	31
98	Bioengineering methods for analysis of cells in vitro. *Annual Review of Cell and Developmental Biology*, **2012**, 28, 385-410	12.6	31
97	Measurement and analysis of traction force dynamics in response to vasoactive agonists. *Integrative Biology (United Kingdom)*, **2011**, 3, 663-74	3.7	31
96	Decreased cell adhesion promotes angiogenesis in a Pyk2-dependent manner. *Experimental Cell Research*, **2011**, 317, 1860-71	4.2	30
95	Using self-assembled monolayers to pattern ECM proteins and cells on substrates. *Methods in Molecular Biology*, **2000**, 139, 209-19	1.4	30

94	Proteomic Analysis of Human Pluripotent Stem Cell-Derived, Fetal, and Adult Ventricular Cardiomyocytes Reveals Pathways Crucial for Cardiac Metabolism and Maturation. *Circulation: Cardiovascular Genetics*, **2015**, 8, 427-36		29
93	Matrix viscoplasticity and its shielding by active mechanics in microtissue models: experiments and mathematical modeling. *Scientific Reports*, **2016**, 6, 33919	4.9	29
92	Adhesion regulates MAP kinase/ternary complex factor exchange to control a proliferative transcriptional switch. *Current Biology*, **2012**, 22, 2017-26	6.3	28
91	A BMP/activin A chimera is superior to native BMPs and induces bone repair in nonhuman primates when delivered in a composite matrix. *Science Translational Medicine*, **2019**, 11,	17.5	27
90	Probing cellular traction forces with magnetic nanowires and microfabricated force sensor arrays. *Nanotechnology*, **2012**, 23, 075101	3.4	26
89	A Bile Duct-on-a-Chip With Organ-Level Functions. *Hepatology*, **2020**, 71, 1350-1363	11.2	26
88	Endothelial Thermotolerance Impairs Nanoparticle Transport in Tumors. *Cancer Research*, **2015**, 75, 3255-67		25
87	Inhibition of v5 Integrin Attenuates Vascular Permeability and Protects against Renal Ischemia-Reperfusion Injury. *Journal of the American Society of Nephrology: JASN*, **2017**, 28, 1741-1752	12.7	23
86	Phospholamban as a crucial determinant of the inotropic response of human pluripotent stem cell-derived ventricular cardiomyocytes and engineered 3-dimensional tissue constructs. *Circulation: Arrhythmia and Electrophysiology*, **2015**, 8, 193-202	6.4	23
85	Microfabrication of a platform to measure and manipulate the mechanics of engineered microtissues. *Methods in Cell Biology*, **2014**, 121, 191-211	1.8	23
84	3D Biomimetic Cultures: The Next Platform for Cell Biology. *Trends in Cell Biology*, **2016**, 26, 798-800	18.3	22
83	Manipulation of cell-cell adhesion using bowtie-shaped microwells. *Methods in Molecular Biology*, **2007**, 370, 1-10	1.4	22
82	Micropatterned multicolor dynamically adhesive substrates to control cell adhesion and multicellular organization. *Langmuir*, **2014**, 30, 1327-35	4	21
81	An EMMPRIN-□catenin-Nm23 complex drives ATP production and actomyosin contractility at endothelial junctions. *Journal of Cell Science*, **2014**, 127, 3768-81	5.3	20
80	Patterning Cell and Tissue Function. *Cellular and Molecular Bioengineering*, **2008**, 1, 15-23	3.9	20
79	Using self-assembled monolayers to pattern ECM proteins and cells on substrates. *Methods in Molecular Biology*, **2009**, 522, 183-94	1.4	20
78	Studies of 3D directed cell migration enabled by direct laser writing of curved wave topography. *Biofabrication*, **2019**, 11, 021001	10.5	19
77	Transient Support from Fibroblasts is Sufficient to Drive Functional Vascularization in Engineered Tissues. *Advanced Functional Materials*, **2020**, 30, 2003777	15.6	19

76	Heterotypic cell pair co-culturing on patterned microarrays. *Lab on A Chip*, **2012**, 12, 3117-26	7.2	19
75	Mechanically stimulated contraction of engineered cardiac constructs using a microcantilever. *IEEE Transactions on Biomedical Engineering*, **2015**, 62, 438-42	5	18
74	The emerin-binding transcription factor Lmo7 is regulated by association with p130Cas at focal adhesions. *PeerJ*, **2013**, 1, e134	3.1	18
73	Harnessing Mechanobiology for Tissue Engineering. *Developmental Cell*, **2021**, 56, 180-191	10.2	18
72	Myosin IIA-mediated forces regulate multicellular integrity during vascular sprouting. *Molecular Biology of the Cell*, **2019**, 30, 1974-1984	3.5	17
71	The Cdc42 guanine nucleotide exchange factor FGD1 regulates osteogenesis in human mesenchymal stem cells. *American Journal of Pathology*, **2011**, 178, 969-74	5.8	15
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