Roger D Kamm

List of Publications by Year
in descending order

228 papers	26,820 citations	4370 86 h-index	6818 155 g-index
237 all docs	237 docs citations	237 times ranked	25292 citing authors

#	Article	IF	Citations
1	Migration of tumor cells in 3D matrices is governed by matrix stiffness along with cell-matrix adhesion and proteolysis. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 10889-10894.	3.3	1,029
2	Lamin A/C deficiency causes defective nuclear mechanics and mechanotransduction. Journal of Clinical Investigation, 2004, 113, 370-378.	3.9	828
3	Three-dimensional microfluidic model for tumor cell intravasation and endothelial barrier function. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 13515-13520.	3.3	744
4	Human 3D vascularized organotypic microfluidic assays to study breast cancer cell extravasation. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 214-219.	3.3	616
5	Distinct endothelial phenotypes evoked by arterial waveforms derived from atherosclerosis-susceptible and -resistant regions of human vasculature. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 14871-14876.	3.3	578
6	Local myocardial insulin-like growth factor 1 (IGF-1) delivery with biotinylated peptide nanofibers improves cell therapy for myocardial infarction. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 8155-8160.	3.3	575
7	Injectable Self-Assembling Peptide Nanofibers Create Intramyocardial Microenvironments for Endothelial Cells. Circulation, 2005, 111, 442-450.	1.6	555
8	The Impact of Calcification on the Biomechanical Stability of Atherosclerotic Plaques. Circulation, 2001, 103, 1051-1056.	1.6	538
9	Microfluidic assay for simultaneous culture of multiple cell types on surfaces or within hydrogels. Nature Protocols, 2012, 7, 1247-1259.	5.5	518
10	3D self-organized microvascular model of the human blood-brain barrier with endothelial cells, pericytes and astrocytes. Biomaterials, 2018, 180, 117-129.	5.7	499
11	Cell mechanics and mechanotransduction: pathways, probes, and physiology. American Journal of Physiology - Cell Physiology, 2004, 287, C1-C11.	2.1	473
12	Cell migration into scaffolds under co-culture conditions in a microfluidic platform. Lab on A Chip, 2009, 9, 269-275.	3.1	456
13	A microfluidic 3D inÂvitro model for specificity of breast cancer metastasis to bone. Biomaterials, 2014, 35, 2454-2461.	5.7	440
14	Impact of the physical microenvironment on tumor progression and metastasis. Current Opinion in Biotechnology, 2016, 40, 41-48.	3.3	437
15	Interstitial flow influences direction of tumor cell migration through competing mechanisms. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 11115-11120.	3.3	412
16	<i>Ex Vivo</i> Profiling of PD-1 Blockade Using Organotypic Tumor Spheroids. Cancer Discovery, 2018, 8, 196-215.	7.7	392
17	Neutrophils Suppress Intraluminal NK Cellâ€“Mediated Tumor Cell Clearance and Enhance Extravasation of Disseminated Carcinoma Cells. Cancer Discovery, 2016, 6, 630-649.	7.7	369
18	A 3D neurovascular microfluidic model consisting of neurons, astrocytes and cerebral endothelial cells as a bloodâ€“brain barrier. Lab on A Chip, 2017, 17, 448-459.	3.1	338

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19	Endothelial Cells Promote Cardiac Myocyte Survival and Spatial Reorganization. Circulation, 2004, 110, 962-968.	1.6	335
20	Noncontact three-dimensional mapping of intracellular hydromechanical properties by Brillouin microscopy. Nature Methods, 2015, 12, 1132-1134.	9.0	326
21	Mechanotransduction through growth-factor shedding into the extracellular space. Nature, 2004, 429, 83-86.	13.7	324
22	Left-Handed Helical Ribbon Intermediates in the Self-Assembly of a Î²-Sheet Peptide. Nano Letters, 2002, 2, 295-299.	4.5	304
23	On-chip human microvasculature assay for visualization and quantification of tumor cell extravasation dynamics. Nature Protocols, 2017, 12, 865-880.	5.5	297
24	Microphysiological 3D model of amyotrophic lateral sclerosis (ALS) from human iPS-derived muscle cells and optogenetic motor neurons. Science Advances, 2018, 4, eaat5847.	4.7	282
25	Self-Assembly of a Î²-Sheet Protein Governed by Relief of Electrostatic Repulsion Relative to van der Waals Attraction. Biomacromolecules, 2000, 1, 627-631.	2.6	258
26	Formation and optogenetic control of engineered 3D skeletal muscle bioactuators. Lab on A Chip, 2012, 12, 4976.	3.1	253
27	On the mechanism of mucosal folding in normal and asthmatic airways. Journal of Applied Physiology, 1997, 83, 1814-1821.	1.2	252
28	Control of self-assembling oligopeptide matrix formation through systematic variation of amino acid sequence. Biomaterials, 2002, 23, 219-227.	5.7	248
29	Mechanisms of tumor cell extravasation in an in vitro microvascular network platform. Integrative Biology (United Kingdom), 2013, 5, 1262.	0.6	244
30	Computational modeling of cardiovascular response to orthostatic stress. Journal of Applied Physiology, 2002, 92, 1239-1254.	1.2	240
31	Computational Model for Cell Migration in Three-Dimensional Matrices. Biophysical Journal, 2005, 89, 1389-1397.	0.2	236
32	Optogenetic skeletal muscle-powered adaptive biological machines. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 3497-3502.	3.3	234
33	Cell contraction induces long-ranged stress stiffening in the extracellular matrix. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 4075-4080.	3.3	231
34	Microfluidic platforms for mechanobiology. Lab on A Chip, 2013, 13, 2252.	3.1	226
35	Mechanotransduction of fluid stresses governs 3D cell migration. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 2447-2452.	3.3	214
36	Microfluidic Models of Vascular Functions. Annual Review of Biomedical Engineering, 2012, 14, 205-230.	5.7	208

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37	In Vitro Model of Tumor Cell Extravasation. PLoS ONE, 2013, 8, e56910.	1.1	201
38	Generation of 3D functional microvascular networks with human mesenchymal stem cells in microfluidic systems. Integrative Biology (United Kingdom), 2014, 6, 555-563.	0.6	195
39	Microfluidic device for the formation of optically excitable, three-dimensional, compartmentalized motor units. Science Advances, 2016, 2, e1501429.	4.7	192
40	Control of Perfusable Microvascular Network Morphology Using a Multiculture Microfluidic System. Tissue Engineering - Part C: Methods, 2014, 20, 543-552.	1.1	188
41	3D microfluidic <i>ex vivo</i> culture of organotypic tumor spheroids to model immune checkpoint blockade. Lab on A Chip, 2018, 18, 3129-3143.	3.1	185
42	Measuring molecular rupture forces between single actin filaments and actin-binding proteins. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 9221-9226.	3.3	183
43	Tumor cell migration in complex microenvironments. Cellular and Molecular Life Sciences, 2013, 70, 1335-1356.	2.4	183
44	A Three-Dimensional Viscoelastic Model for Cell Deformation with Experimental Verification. Biophysical Journal, 2003, 85, 3336-3349.	0.2	180
45	Transportâ€mediated angiogenesis in 3D epithelial coculture. FASEB Journal, 2009, 23, 2155-2164.	0.2	179
46	Warburg metabolism in tumor-conditioned macrophages promotes metastasis in human pancreatic ductal adenocarcinoma. OncoImmunology, 2016, 5, e1191731.	2.1	178
47	Self-assembling short oligopeptides and the promotion of angiogenesis. Biomaterials, 2005, 26, 4837-4846.	5.7	176
48	Mechanotransduction in Cardiac Myocytes. Annals of the New York Academy of Sciences, 2004, 1015, 53-70.	1.8	172
49	Kinetic control of dimer structure formation in amyloid fibrillogenesis. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 12916-12921.	3.3	171
50	A 3D microfluidic model for preclinical evaluation of TCR-engineered T cells against solid tumors. JCI Insight, 2017, 2, .	2.3	169
51	Microfluidics: A New Tool for Modeling Cancerâ€“Immune Interactions. Trends in Cancer, 2016, 2, 6-19.	3.8	163
52	Complex mechanics of the heterogeneous extracellular matrix in cancer. Extreme Mechanics Letters, 2018, 21, 25-34.	2.0	158
53	Vascularized organoids on a chip: strategies for engineering organoids with functional vasculature. Lab on A Chip, 2021, 21, 473-488.	3.1	151
54	Screening therapeutic EMT blocking agents in a three-dimensional microenvironment. Integrative Biology (United Kingdom), 2013, 5, 381-389.	0.6	150

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55	Rethinking organoid technology through bioengineering. Nature Materials, 2021, 20, 145-155.	13.3	150
56	Computational Analysis of Viscoelastic Properties of Crosslinked Actin Networks. PLoS Computational Biology, 2009, 5, e1000439.	1.5	145
57	A high-throughput microfluidic assay to study neurite response to growth factor gradients. Lab on A Chip, 2011, 11, 497-507.	3.1	145
58	Force-induced activation of Talin and its possible role in focal adhesion mechanotransduction. Journal of Biomechanics, 2007, 40, 2096-2106.	0.9	143
59	In vitro 3D collective sprouting angiogenesis under orchestrated ANG-1 and VEGF gradients. Lab on A Chip, 2011, 11, 2175.	3.1	142
60	Microfluidic Platforms for Studies of Angiogenesis, Cell Migration, and Cellâ€"Cell Interactions. Annals of Biomedical Engineering, 2010, 38, 1164-1177.	1.3	140
61	A novel microfluidic platform for high-resolution imaging of a three-dimensional cell culture under a controlled hypoxic environment. Lab on A Chip, 2012, 12, 4855.	3.1	134
62	Inflamed neutrophils sequestered at entrapped tumor cells via chemotactic confinement promote tumor cell extravasation. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 7022-7027.	3.3	132
63	Elucidation of the Roles of Tumor Integrin Î²1 in the Extravasation Stage of the Metastasis Cascade. Cancer Research, 2016, 76, 2513-2524.	0.4	129
64	Cellular Fluid Mechanics and Mechanotransduction. Annals of Biomedical Engineering, 2005, 33, 1719-1723.	1.3	125
65	Advances in on-chip vascularization. Regenerative Medicine, 2017, 12, 285-302.	0.8	125
66	Unsteady flow in a collapsible tube subjected to external pressure or body forces. Journal of Fluid Mechanics, 1979, 95, 1-78.	1.4	124
67	Engineered 3D vascular and neuronal networks in a microfluidic platform. Scientific Reports, 2018, 8, 5168.	1.6	123
68	Microfluidic devices for studying heterotypic cell-cell interactions and tissue specimen cultures under controlled microenvironments. Biomicrofluidics, 2011, 5, 013406.	1.2	117
69	A quantitative microfluidic angiogenesis screen for studying anti-angiogenic therapeutic drugs. Lab on A Chip, 2015, 15, 301-310.	3.1	116
70	Dynamic interplay between tumour, stroma and immune system can drive or prevent tumour progression. Convergent Science Physical Oncology, 2017, 3, 034002.	2.6	114
71	A Chemomechanical Model for Nuclear Morphology and Stresses during Cell Transendothelial Migration. Biophysical Journal, 2016, 111, 1541-1552.	0.2	112
72	Perspective: The promise of multi-cellular engineered living systems. APL Bioengineering, 2018, 2, 040901.	3.3	110

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73	Breast Cancer Cell Invasion into a Three Dimensional Tumor-Stroma Microenvironment. Scientific Reports, 2016, 6, 34094.	1.6	109
74	Human Vascular Tissue Models Formed from Human Induced Pluripotent Stem Cell Derived Endothelial Cells. Stem Cell Reviews and Reports, 2015, 11, 511-525.	5.6	107
75	STRESS TRANSMISSION IN THE LUNG: Pathways from Organ to Molecule. Annual Review of Physiology, 2006, 68, 507-541.	5.6	104
76	Emerging Trends in Micro- and Nanoscale Technologies in Medicine: From Basic Discoveries to Translation. ACS Nano, 2017, 11, 5195-5214.	7.3	104
77	Mechanism of a flow-gated angiogenesis switch: early signaling events at cellâ€“matrix and cellâ€“cell junctions. Integrative Biology (United Kingdom), 2012, 4, 863.	0.6	103
78	Sprouting Angiogenesis under a Chemical Gradient Regulated by Interactions with an Endothelial Monolayer in a Microfluidic Platform. Analytical Chemistry, 2011, 83, 8454-8459.	3.2	102
79	Ensemble Analysis of Angiogenic Growth in Three-Dimensional Microfluidic Cell Cultures. PLoS ONE, 2012, 7, e37333.	1.1	102
80	Supramolecular structure of helical ribbons self-assembled from a Î²-sheet peptide. Journal of Chemical Physics, 2003, 118, 389-397.	1.2	100
81	Mechanical deformation of neutrophils into narrow channels induces pseudopod projection and changes in biomechanical properties. Journal of Applied Physiology, 2005, 98, 1930-1939.	1.2	99
82	3D matrix microenvironment for targeted differentiation of embryonic stem cells into neural and glial lineages. Biomaterials, 2013, 34, 5995-6007.	5.7	99
83	In Vitro Microfluidic Models for Neurodegenerative Disorders. Advanced Healthcare Materials, 2018, 7, 1700489.	3.9	98
84	Contact-dependent carcinoma aggregate dispersion by M2a macrophages via ICAM-1 and Î²2 integrin interactions. Oncotarget, 2015, 6, 25295-25307.	0.8	97
85	Vascularized microfluidic organ-chips for drug screening, disease models and tissue engineering. Current Opinion in Biotechnology, 2018, 52, 116-123.	3.3	95
86	A versatile assay for monitoring in vivo-like transendothelial migration of neutrophils. Lab on A Chip, 2012, 12, 3861.	3.1	93
87	On-chip 3D neuromuscular model for drug screening and precision medicine in neuromuscular disease. Nature Protocols, 2020, 15, 421-449.	5.5	93
88	Molecular responses of rat tracheal epithelial cells to transmembrane pressure. American Journal of Physiology - Lung Cellular and Molecular Physiology, 2000, 278, L1264-L1272.	1.3	92
89	Creating Living Cellular Machines. Annals of Biomedical Engineering, 2014, 42, 445-459.	1.3	92
90	Computational modeling of three-dimensional ECM-rigidity sensing to guide directed cell migration. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E390-E399.	3.3	88

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91	Macrophage-Secreted TNFÎ± and TGFÎ²1 Influence Migration Speed and Persistence of Cancer Cells in 3D Tissue Culture via Independent Pathways. Cancer Research, 2017, 77, 279-290.	0.4	86
92	Surfaceâ€Treatmentâ€Induced Threeâ€Dimensional Capillary Morphogenesis in a Microfluidic Platform. Advanced Materials, 2009, 21, 4863-4867.	11.1	85
93	Mechanical properties of a self-assembling oligopeptide matrix. Journal of Biomaterials Science, Polymer Edition, 1998, 9, 297-312.	1.9	84
94	Hot embossing for fabrication of a microfluidic 3D cell culture platform. Biomedical Microdevices, 2011, 13, 325-333.	1.4	83
95	Simultaneous or Sequential Orthogonal Gradient Formation in a 3D Cell Culture Microfluidic Platform. Small, 2016, 12, 612-622.	5.2	83
96	Interstitial flow promotes macrophage polarization toward an M2 phenotype. Molecular Biology of the Cell, 2018, 29, 1927-1940.	0.9	83
97	Mechanical Analysis of Atherosclerotic Plaques Based on Optical Coherence Tomography. Annals of Biomedical Engineering, 2004, 32, 1494-1503.	1.3	80
98	Engineered human bloodâ€“brain barrier microfluidic model for vascular permeability analyses. Nature Protocols, 2022, 17, 95-128.	5.5	79
99	Engineering of In Vitro 3D Capillary Beds by Self-Directed Angiogenic Sprouting. PLoS ONE, 2012, 7, e50582.	1.1	78
100	Endothelial Regulation of Drug Transport in a 3D Vascularized Tumor Model. Advanced Functional Materials, 2020, 30, 2002444.	7.8	78
101	Differentiation of Embryonic Stem Cells into Cardiomyocytes in a Compliant Microfluidic System. Annals of Biomedical Engineering, 2011, 39, 1840-1847.	1.3	77
102	Rapid Prototyping of Concave Microwells for the Formation of 3D Multicellular Cancer Aggregates for Drug Screening. Advanced Healthcare Materials, 2014, 3, 609-616.	3.9	77
103	Interplay of active processes modulates tension and drives phase transition in self-renewing, motor-driven cytoskeletal networks. Nature Communications, 2016, 7, 10323.	5.8	76
104	Computational modeling of RBC and neutrophil transit through the pulmonary capillaries. Journal of Applied Physiology, 2001, 90, 545-564.	1.2	75
105	Neutrophil Transit Times through Pulmonary Capillaries: The Effects of Capillary Geometry and fMLP-Stimulation. Biophysical Journal, 2002, 83, 1917-1933.	0.2	74
106	Single-Cell Migration in Complex Microenvironments: Mechanics and Signaling Dynamics. Journal of Biomechanical Engineering, 2016, 138, 021004.	0.6	74
107	Dynamic filopodial forces induce accumulation, damage, and plastic remodeling of 3D extracellular matrices. PLoS Computational Biology, 2019, 15, e1006684.	1.5	74
108	Effects of systematic variation of amino acid sequence on the mechanical properties of a self-assembling, oligopeptide biomaterial. Journal of Biomaterials Science, Polymer Edition, 2002, 13, 225-236.	1.9	73

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109	Engineering a 3D microfluidic culture platform for tumor-treating field application. Scientific Reports, 2016, 6, 26584.	1.6	73
110	Oxygen levels in thermoplastic microfluidic devices during cell culture. Lab on A Chip, 2014, 14, 459-462.	3.1	71
111	Airway Wall Mechanics. Annual Review of Biomedical Engineering, 1999, 1, 47-72.	5.7	69
112	Influence of protein corona and caveolae-mediated endocytosis on nanoparticle uptake and transcytosis. Nanoscale, 2018, 10, 12386-12397.	2.8	68
113	Biology and Models of the Bloodâ€“Brain Barrier. Annual Review of Biomedical Engineering, 2021, 23, 359-384.	5.7	68
114	Biohybrid valveless pump-bot powered by engineered skeletal muscle. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 1543-1548.	3.3	67
115	In Vitro Modeling of Mechanics in Cancer Metastasis. ACS Biomaterials Science and Engineering, 2018, 4, 294-301.	2.6	64
116	Microfluidic models for adoptive cell-mediated cancer immunotherapies. Drug Discovery Today, 2016, 21, 1472-1478.	3.2	63
117	Balance of interstitial flow magnitude and vascular endothelial growth factor concentration modulates three-dimensional microvascular network formation. APL Bioengineering, 2019, 3, 036102.	3.3	63
118	Three-Dimensional Cellular Deformation Analysis with a Two-Photon Magnetic Manipulator Workstation. Biophysical Journal, 2002, 82, 2211-2223.	0.2	62
119	A 3D microvascular network model to study the impact of hypoxia on the extravasation potential of breast cell lines. Scientific Reports, 2018, 8, 17949.	1.6	62
120	Three-dimensional extracellular matrix-mediated neural stem cell differentiation in a microfluidic device. Lab on A Chip, 2012, 12, 2305.	3.1	61
121	<i>In vitro</i> models of molecular and nano-particle transport across the blood-brain barrier. Biomicrofluidics, 2018, 12, 042213.	1.2	61
122	Passive and active microrheology for cross-linked F-actin networks in vitro. Acta Biomaterialia, 2010, 6, 1207-1218.	4.1	60
123	Cell Invasion Dynamics into a Three Dimensional Extracellular Matrix Fibre Network. PLoS Computational Biology, 2015, 11, e1004535.	1.5	60
124	Image-based modeling for better understanding and assessment of atherosclerotic plaque progression and vulnerability: Data, modeling, validation, uncertainty and predictions. Journal of Biomechanics, 2014, 47, 834-846.	0.9	59
125	Crosstalk between developing vasculature and optogenetically engineered skeletal muscle improves muscle contraction and angiogenesis. Biomaterials, 2018, 156, 65-76.	5.7	59
126	Dynamic Mechanisms of Cell Rigidity Sensing: Insights from a Computational Model of Actomyosin Networks. PLoS ONE, 2012, 7, e49174.	1.1	57

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127	Identification of drugs as single agents or in combination to prevent carcinoma dissemination in a microfluidic 3D environment. Oncotarget, 2015, 6, 36603-36614.	0.8	57
128	Nuclear Mechanics and Methods. Methods in Cell Biology, 2007, 83, 269-294.	0.5	56
129	Platelet decoys inhibit thrombosis and prevent metastatic tumor formation in preclinical models. Science Translational Medicine, 2019, 11, .	5.8	55
130	Balance of mechanical forces drives endothelial gap formation and may facilitate cancer and immune-cell extravasation. PLoS Computational Biology, 2019, 15, e1006395.	1.5	53
131	Engineering approaches for studying immune-tumor cell interactions and immunotherapy. IScience, 2021, 24, 101985.	1.9	52
132	Cooperative Effects of Vascular Angiogenesis and Lymphangiogenesis. Regenerative Engineering and Translational Medicine, 2018, 4, 120-132.	1.6	51
133	Epithelial-Mesenchymal Transition Induces Podocalyxin to Promote Extravasation via Ezrin Signaling. Cell Reports, 2018, 24, 962-972.	2.9	51
134	In Vitro Microvessel Growth and Remodeling within a Three-Dimensional Microfluidic Environment. Cellular and Molecular Bioengineering, 2014, 7, 15-25.	1.0	49
135	A Facile Method to Probe the Vascular Permeability of Nanoparticles in Nanomedicine Applications. Scientific Reports, 2017, 7, 707.	1.6	49
136	Integrating focal adhesion dynamics, cytoskeleton remodeling, and actin motor activity for predicting cell migration on 3D curved surfaces of the extracellular matrix. Integrative Biology (United Kingdom), 2012, 4, 1386.	0.6	48
137	Morphological Transformation and Force Generation of Active Cytoskeletal Networks. PLoS Computational Biology, 2017, 13, e1005277.	1.5	48
138	Cytoskeletal remodeling and cellular activation during deformation of neutrophils into narrow channels. Journal of Applied Physiology, 2005, 99, 2323-2330.	1.2	47
139	Atomistic Simulation Approach to a Continuum Description of Self-Assembled Î²-Sheet Filaments. Biophysical Journal, 2006, 90, 2510-2524.	0.2	46
140	A predictive microfluidic model of human glioblastoma to assess trafficking of bloodâ€“brain barrier-penetrant nanoparticles. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	46
141	The Use of Microfluidic Platforms to Probe the Mechanism of Cancer Cell Extravasation. Advanced Healthcare Materials, 2020, 9, e1901410.	3.9	45
142	Biomechanical Regulation of Endothelium-dependent Events Critical for Adaptive Remodeling. Journal of Biological Chemistry, 2009, 284, 8412-8420.	1.6	44
143	Quantification of human neuromuscular function through optogenetics. Theranostics, 2019, 9, 1232-1246.	4.6	44
144	Mucosal Folding in Biologic Vessels. Journal of Biomechanical Engineering, 2002, 124, 334-341.	0.6	43

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145	Synergistic effects of tethered growth factors and adhesion ligands on DNA synthesis and function of primary hepatocytes cultured on soft synthetic hydrogels. Biomaterials, 2010, 31, 4657-4671.	5.7	43
146	Microfabrication and microfluidics for muscle tissue models. Progress in Biophysics and Molecular Biology, 2014, 115, 279-293.	1.4	43
147	Tumor cell nuclei soften during transendothelial migration. Journal of Biomechanics, 2021, 121, 110400.	0.9	42
148	A low resistance microfluidic system for the creation of stable concentration gradients in a defined 3D microenvironment. Biomedical Microdevices, 2010, 12, 1027-1041.	1.4	40
149	Validating Antimetastatic Effects of Natural Products in an Engineered Microfluidic Platform Mimicking Tumor Microenvironment. Molecular Pharmaceutics, 2014, 11, 2022-2029.	2.3	40
150	Construction of Continuous Capillary Networks Stabilized by Pericyte-like Perivascular Cells. Tissue Engineering - Part A, 2019, 25, 499-510.	1.6	40
151	The CCL2-CCR2 astrocyte-cancer cell axis in tumor extravasation at the brain. Science Advances, 2021, 7, .	4.7	40
152	The effects of luminal and trans-endothelial fluid flows on the extravasation and tissue invasion of tumor cells in a 3D in vitro microvascular platform. Biomaterials, 2021, 265, 120470.	5.7	39
153	Molecular Biomechanics: The Molecular Basis of How Forces Regulate Cellular Function. Cellular and Molecular Bioengineering, 2010, 3, 91-105.	1.0	37
154	Dynamic Role of Cross-Linking Proteins in Actin Rheology. Biophysical Journal, 2011, 101, 1597-1603.	0.2	37
155	Endothelial monolayer permeability under controlled oxygen tension. Integrative Biology (United) Tj ETQq1 1 0.784314 rgBT /Overlock	0.6	37
156	Application of Transmural Flow Across In Vitro Microvasculature Enables Direct Sampling of Interstitial Therapeutic Molecule Distribution. Small, 2019, 15, e1902393.	5.2	37
157	Tumor-Derived cGAMP Regulates Activation of the Vasculature. Frontiers in Immunology, 2020, 11, 2090.	2.2	37
158	Numerical Simulation of Enhanced External Counterpulsation. Annals of Biomedical Engineering, 2001, 29, 284-297.	1.3	36
159	Impact of Dimensionality and Network Disruption on Microrheology of Cancer Cells in 3D Environments. PLoS Computational Biology, 2014, 10, e1003959.	1.5	35
160	USNCTAM perspectives on mechanics in medicine. Journal of the Royal Society Interface, 2014, 11, 20140301.	1.5	35
161	Microfluidic platform for three-dimensional cell culture under spatiotemporal heterogeneity of oxygen tension. APL Bioengineering, 2020, 4, 016106.	3.3	34
162	The cancer glycocalyx mediates intravascular adhesion and extravasation during metastatic dissemination. Communications Biology, 2021, 4, 255.	2.0	34

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163	A microfluidic system with optical laser tweezers to study mechanotransduction and focal adhesion recruitment. Lab on A Chip, 2011, 11, 684-694.	3.1	33
164	A three-dimensional microfluidic tumor cell migration assay to screen the effect of anti-migratory drugs and interstitial flow. Microfluidics and Nanofluidics, 2013, 14, 969-981.	1.0	33
165	Extracellular Matrix Heterogeneity Regulates Threeâ€Dimensional Morphologies of Breast Adenocarcinoma Cell Invasion. Advanced Healthcare Materials, 2013, 2, 790-794.	3.9	33
166	Multiscale mechanobiology: computational models for integrating molecules to multicellular systems. Integrative Biology (United Kingdom), 2015, 7, 1093-1108.	0.6	33
167	Fast Fluorescence Laser Tracking Microrheometry, II: Quantitative Studies of Cytoskeletal Mechanotransduction. Biophysical Journal, 2008, 95, 895-909.	0.2	31
168	Multiscale impact of nucleotides and cations on the conformational equilibrium, elasticity and rheology of actin filaments and crosslinked networks. Biomechanics and Modeling in Mechanobiology, 2015, 14, 1143-1155.	1.4	31
169	Constructive remodeling of a synthetic endothelial extracellular matrix. Scientific Reports, 2016, 5, 18290.	1.6	28
170	A robust vasculogenic microfluidic model using human immortalized endothelial cells and Thy1 positive fibroblasts. Biomaterials, 2021, 276, 121032.	5.7	27
171	Probabilistic Voxel-Fe model for single cell motility in 3D. In Silico Cell and Tissue Science, 2014, 1, 2.	2.6	26
172	A microfluidic platform for studying the effects of small temperature gradients in an incubator environment. Biomicrofluidics, 2008, 2, 34106.	1.2	24
173	Cytoskeletal Deformation at High Strains and the Role of Cross-link Unfolding or Unbinding. Cellular and Molecular Bioengineering, 2009, 2, 28-38.	1.0	23
174	Quantitative screening of the effects of hyper-osmotic stress on cancer cells cultured in 2- or 3-dimensional settings. Scientific Reports, 2019, 9, 13782.	1.6	23
175	Physiologic flow-conditioning limits vascular dysfunction in engineered human capillaries. Biomaterials, 2022, 280, 121248.	5.7	23
176	A Robust Method for Perfusable Microvascular Network Formation In Vitro. Small Methods, 2022, 6, e2200143.	4.6	23
177	Complementary effects of ciclopirox olamine, a prolyl hydroxylase inhibitor and sphingosine 1-phosphate on fibroblasts and endothelial cells in driving capillary sprouting. Integrative Biology (United Kingdom), 2013, 5, 1474.	0.6	22
178	In vitro angiogenesis assay for the study of cell-encapsulation therapy. Lab on A Chip, 2012, 12, 2942.	3.1	21
179	Effects of 3D geometries on cellular gradient sensing and polarization. Physical Biology, 2016, 13, 036008.	0.8	21
180	Studying nucleicÂenvelope and plasma membrane mechanics of eukaryotic cells using confocal reflectance interferometric microscopy. Nature Communications, 2019, 10, 3652.	5.8	20

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181	Migration of vascular endothelial cells in monolayers under hypoxic exposure. Integrative Biology (United Kingdom), 2019, 11, 26-35.	0.6	20
182	Phthalimide Derivative Shows Anti-angiogenic Activity in a 3D Microfluidic Model and No Teratogenicity in Zebrafish Embryos. Frontiers in Pharmacology, 2019, 10, 349.	1.6	20
183	Bioengineered optogenetic model of human neuromuscular junction. Biomaterials, 2021, 276, 121033.	5.7	20
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