

Sanjay Kumar

List of Publications by Year in descending order

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Version: 2024-02-01

113
papers

8,970
citations

53751

45
h-index

43868

91
g-index

150
all docs

150
docs citations

150
times ranked

11819
citing authors

#	ARTICLE	IF	CITATIONS
1	Lose the stress: Viscoelastic materials for cell engineering. <i>Acta Biomaterialia</i> , 2023, 163, 146-157.	4.1	10
2	Regulation of Tumor Invasion by the Physical Microenvironment: Lessons from Breast and Brain Cancer. <i>Annual Review of Biomedical Engineering</i> , 2022, 24, 29-59.	5.7	11
3	<i>Egr1</i> is a 3D matrix-specific mediator of mechanosensitive stem cell lineage commitment. <i>Science Advances</i> , 2022, 8, eabm4646.	4.7	20
4	Transduction of cell and matrix geometric cues by the actin cytoskeleton. <i>Current Opinion in Cell Biology</i> , 2021, 68, 64-71.	2.6	12
5	Multiwell Combinatorial Hydrogel Array for High-Throughput Analysis of Cell-ECM Interactions. <i>ACS Biomaterials Science and Engineering</i> , 2021, 7, 2453-2465.	2.6	6
6	OTME-12. Role of the transsulfuration pathway in glioblastoma invasion. <i>Neuro-Oncology Advances</i> , 2021, 3, ii15-ii16.	0.4	0
7	The 2021 Young Innovators of Cellular and Molecular Bioengineering. <i>Cellular and Molecular Bioengineering</i> , 2021, 14, 379-380.	1.0	0
8	Transcriptomic analysis reveals that BMP4 sensitizes glioblastoma tumor-initiating cells to mechanical cues. <i>Matrix Biology</i> , 2020, 85-86, 112-127.	1.5	11
9	Suppression of LIM Kinase 1 and LIM Kinase 2 Limits Glioblastoma Invasion. <i>Cancer Research</i> , 2020, 80, 69-78.	0.4	17
10	Getting the big picture of cell-matrix interactions: High-throughput biomaterial platforms and systems-level measurements. <i>Current Opinion in Solid State and Materials Science</i> , 2020, 24, 100871.	5.6	2
11	Incorporating Tumor-Associated Macrophages into Engineered Models of Glioma. <i>iScience</i> , 2020, 23, 101770.	1.9	18
12	A mode of cell adhesion and migration facilitated by CD44-dependent microtentacles. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 11432-11443.	3.3	56
13	Angiotensin links ROCK and YAP signaling in mechanosensitive differentiation of neural stem cells. <i>Molecular Biology of the Cell</i> , 2020, 31, 386-396.	0.9	26
14	Cofilin is required for polarization of tension in stress fiber networks during migration. <i>Journal of Cell Science</i> , 2020, 133, .	1.2	12
15	Multi-scale cellular engineering: From molecules to organ-on-a-chip. <i>APL Bioengineering</i> , 2020, 4, 010906.	3.3	8
16	Direct evidence that tumor cells soften when navigating confined spaces. <i>Molecular Biology of the Cell</i> , 2020, 31, 1726-1734.	0.9	66
17	Biophysical principles of choanoflagellate self-organization. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 1303-1311.	3.3	31
18	Clonal ZEB1-Driven Mesenchymal Transition Promotes Targetable Oncologic Antiangiogenic Therapy Resistance. <i>Cancer Research</i> , 2020, 80, 1498-1511.	0.4	35

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19	Dissecting and rebuilding the glioblastoma microenvironment with engineered materials. Nature Reviews Materials, 2019, 4, 651-668.	23.3	103
20	Mastering their own fates through the matrix. Nature Materials, 2019, 18, 779-780.	13.3	6
21	Hyaluronic Acid: Incorporating the Bio into the Material. ACS Biomaterials Science and Engineering, 2019, 5, 3753-3765.	2.6	103
22	Extracellular Matrix Geometry and Initial Adhesive Position Determine Stress Fiber Network Organization during Cell Spreading. Cell Reports, 2019, 27, 1897-1909.e4.	2.9	35
23	Self-Assembling Micelles Based on an Intrinsically Disordered Protein Domain. Journal of the American Chemical Society, 2019, 141, 4291-4299.	6.6	31
24	Fifteen years of <i>Servitudo et Grandeur</i> to the application of a biophysical technique in medicine: The tale of AFMBioMed. Journal of Molecular Recognition, 2019, 32, e2773.	1.1	4
25	Actomyosin-Mediated Tension Orchestrates Uncoupled Respiration in Adipose Tissues. Cell Metabolism, 2018, 27, 602-615.e4.	7.2	70
26	Linking invasive motility to protein expression in single tumor cells. Lab on A Chip, 2018, 18, 371-384.	3.1	23
27	Structural Regulation of a Neurofilament-Inspired Intrinsically Disordered Protein Brush by Multisite Phosphorylation. Biochemistry, 2018, 57, 4019-4028.	1.2	12
28	Dopaminergic Neurons Transplanted Using Cell-Instructive Biomaterials Alleviate Parkinsonism in Rodents. Advanced Functional Materials, 2018, 28, 1804144.	7.8	19
29	A 3D topographical model of parenchymal infiltration and perivascular invasion in glioblastoma. APL Bioengineering, 2018, 2, .	3.3	27
30	Actomyosin stress fiber subtypes have unique viscoelastic properties and roles in tension generation. Molecular Biology of the Cell, 2018, 29, 1992-2004.	0.9	30
31	Geometry and network connectivity govern the mechanics of stress fibers. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 2622-2627.	3.3	50
32	Engineered hydrogels increase the post-transplantation survival of encapsulated hESC-derived midbrain dopaminergic neurons. Biomaterials, 2017, 136, 1-11.	5.7	97
33	Biophysical regulation of cancer stem/initiating cells: Implications for disease mechanisms and translation. Current Opinion in Biomedical Engineering, 2017, 1, 87-95.	1.8	15
34	Novel biomaterials to study neural stem cell mechanobiology and improve cell-replacement therapies. Current Opinion in Biomedical Engineering, 2017, 4, 13-20.	1.8	19
35	Activation of ROCK and MLCK tunes regional stress fiber formation and mechanics via preferential myosin light chain phosphorylation. Molecular Biology of the Cell, 2017, 28, 3832-3843.	0.9	58
36	Thiophene bridged aldehydes (TBAs) image ALDH activity in cells via modulation of intramolecular charge transfer. Chemical Science, 2017, 8, 7143-7151.	3.7	9

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37	Emergent cellular self-organization and mechanosensation initiate follicle pattern in the avian skin. <i>Science</i> , 2017, 357, 811-815.	6.0	188
38	Engineering Advanced Models of the Glioblastoma Microenvironment Using Biomaterials. <i>Biology of Extracellular Matrix</i> , 2017, , 75-89.	0.3	0
39	Making way for neural stemness. <i>Nature Materials</i> , 2017, 16, 1174-1176.	13.3	2
40	Dynamics of Mechanosensitive Neural Stem Cell Differentiation. <i>Stem Cells</i> , 2017, 35, 497-506.	1.4	122
41	Microelastic mapping of the rat dentate gyrus. <i>Royal Society Open Science</i> , 2016, 3, 150702.	1.1	25
42	Site-Specific Modulation of Charge Controls the Structure and Stimulus Responsiveness of Intrinsically Disordered Peptide Brushes. <i>Langmuir</i> , 2016, 32, 5990-5996.	1.6	10
43	Measuring Cell Viscoelastic Properties Using a Microfluidic Extensional Flow Device. <i>Biophysical Journal</i> , 2016, 111, 2039-2050.	0.2	72
44	N-terminal specific conjugation of extracellular matrix proteins to 2-pyridinecarboxaldehyde functionalized polyacrylamide hydrogels. <i>Biomaterials</i> , 2016, 102, 268-276.	5.7	46
45	Cyclic Mechanical Loading Is Essential for Rac1-Mediated Elongation and Remodeling of the Embryonic Mitral Valve. <i>Current Biology</i> , 2016, 26, 27-37.	1.8	40
46	Experimental observation of the asymmetric instability of intermediate-reduced-volume vesicles in extensional flow. <i>Soft Matter</i> , 2016, 12, 3787-3796.	1.2	32
47	Synthetic mechanobiology: engineering cellular force generation and signaling. <i>Current Opinion in Biotechnology</i> , 2016, 40, 82-89.	3.3	13
48	Actomyosin stress fiber mechanosensing in 2D and 3D. <i>F1000Research</i> , 2016, 5, 2261.	0.8	61
49	Differential Contributions of Nonmuscle Myosin II Isoforms and Functional Domains to Stress Fiber Mechanics. <i>Scientific Reports</i> , 2015, 5, 13736.	1.6	23
50	A biomechanical perspective on stress fiber structure and function. <i>Biochimica Et Biophysica Acta - Molecular Cell Research</i> , 2015, 1853, 3065-3074.	1.9	85
51	Constitutive Activation of Myosin-Dependent Contractility Sensitizes Glioma Tumor-Initiating Cells to Mechanical Inputs and Reduces Tissue Invasion. <i>Cancer Research</i> , 2015, 75, 1113-1122.	0.4	79
52	Microfluidic Strategies for Understanding the Mechanics of Cells and Cell-Mimetic Systems. <i>Annual Review of Chemical and Biomolecular Engineering</i> , 2015, 6, 293-317.	3.3	33
53	A synthetic hydrogel for the high-throughput study of cell-ECM interactions. <i>Nature Communications</i> , 2015, 6, 8129.	5.8	125
54	Biofunctionalization of Hydrogels for Engineering the Cellular Microenvironment. , 2014, , 315-348.		3

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55	Preface. Progress in Molecular Biology and Translational Science, 2014, 126, xiii-xiv.	0.9	0
56	Single-Cell Western Blotting after Whole-Cell Imaging to Assess Cancer Chemotherapeutic Response. Analytical Chemistry, 2014, 86, 10429-10436.	3.2	88
57	Matrix Regulation of Tumor-Initiating Cells. Progress in Molecular Biology and Translational Science, 2014, 126, 243-256.	0.9	5
58	Three-dimensional patterning of multiple cell populations through orthogonal genetic control of cell motility. Soft Matter, 2014, 10, 2372-2380.	1.2	11
59	Simultaneous and independent tuning of RhoA and Rac1 activity with orthogonally inducible promoters. Integrative Biology (United Kingdom), 2014, 6, 885-894.	0.6	14
60	Stimuli-sensitive intrinsically disordered protein brushes. Nature Communications, 2014, 5, 5145.	5.8	60
61	A composite hydrogel platform for the dissection of tumor cell migration at tissue interfaces. Biomaterials, 2014, 35, 8846-8853.	5.7	39
62	Engineering strategies to mimic the glioblastoma microenvironment. Advanced Drug Delivery Reviews, 2014, 79-80, 172-183.	6.6	118
63	Platelet mechanosensing of substrate stiffness during clot formation mediates adhesion, spreading, and activation. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 14430-14435.	3.3	166
64	CD44-Mediated Adhesion to Hyaluronic Acid Contributes to Mechanosensing and Invasive Motility. Molecular Cancer Research, 2014, 12, 1416-1429.	1.5	170
65	Stiffness does matter. Nature Materials, 2014, 13, 918-920.	13.3	52
66	Age-Related Dysfunction in Mechanotransduction Impairs Differentiation of Human Mammary Epithelial Progenitors. Cell Reports, 2014, 7, 1926-1939.	2.9	74
67	The Role of Hyaluronic Acid and Its Receptors in the Growth and Invasion of Brain Tumors. Tumors of the Central Nervous System, 2014, , 253-266.	0.1	4
68	Microenvironmental Stiffness Enhances Glioma Cell Proliferation by Stimulating Epidermal Growth Factor Receptor Signaling. PLoS ONE, 2014, 9, e101771.	1.1	104
69	Vinculin tension distributions of individual stress fibers within cell-matrix adhesions. Journal of Cell Science, 2013, 126, 3021-30.	1.2	57
70	Transforming potential and matrix stiffness co-regulate confinement sensitivity of tumor cell migration. Integrative Biology (United Kingdom), 2013, 5, 1067.	0.6	54
71	Pan-neuronal maturation but not neuronal subtype differentiation of adult neural stem cells is mechanosensitive. Scientific Reports, 2013, 3, 1817.	1.6	25
72	Contributions of talin-1 to glioma cellâ€“matrix tensional homeostasis. Journal of the Royal Society Interface, 2012, 9, 1311-1317.	1.5	39

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73	Independent regulation of tumor cell migration by matrix stiffness and confinement. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 10334-10339.	3.3	489
74	Measuring the Elastic Properties of Living Cells with Atomic Force Microscopy Indentation. Methods in Molecular Biology, 2012, 931, 313-329.	0.4	46
75	A Genetic Strategy for the Dynamic and Graded Control of Cell Mechanics, Motility, and Matrix Remodeling. Biophysical Journal, 2012, 102, 434-442.	0.2	31
76	Cellular and Molecular Bioengineering: A Tipping Point. Cellular and Molecular Bioengineering, 2012, 5, 239-253.	1.0	3
77	Ordered and disordered proteins as nanomaterial building blocks. Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology, 2012, 4, 204-218.	3.3	24
78	Cell Mechanobiology in Regenerative Medicine. , 2012, , 1-16.		0
79	Microtopographical assembly of cardiomyocytes. Integrative Biology (United Kingdom), 2011, 3, 1011-1019.	0.6	11
80	Biophysical regulation of tumor cell invasion: moving beyond matrix stiffness. Integrative Biology (United Kingdom), 2011, 3, 267.	0.6	179
81	From Molecular Signal Activation to Locomotion: An Integrated, Multiscale Analysis of Cell Motility on Defined Matrices. PLoS ONE, 2011, 6, e18423.	1.1	26
82	Elucidating the mechanobiology of malignant brain tumors using a brain matrix-mimetic hyaluronic acid hydrogel platform. Biomaterials, 2011, 32, 7913-7923.	5.7	281
83	Modulating malignant epithelial tumor cell adhesion, migration and mechanics with nanorod surfaces. Biomedical Microdevices, 2011, 13, 89-95.	1.4	4
84	Contractility Dominates Adhesive Ligand Density in Regulating Cellular De-adhesion and Retraction Kinetics. Annals of Biomedical Engineering, 2011, 39, 1163-1173.	1.3	11
85	Rho GTPases Mediate the Mechanosensitive Lineage Commitment of Neural Stem Cells. Stem Cells, 2011, 29, 1886-1897.	1.4	176
86	Microscale mechanisms of agarose-induced disruption of collagen remodeling. Biomaterials, 2011, 32, 5633-5642.	5.7	53
87	Biophysical mechanisms of single-cell interactions with microtopographical cues. Biomedical Microdevices, 2010, 12, 287-296.	1.4	24
88	Combining mechanical and optical approaches to dissect cellular mechanobiology. Journal of Biomechanics, 2010, 43, 45-54.	0.9	36
89	Probing cellular mechanobiology in three-dimensional culture with collagen-agarose matrices. Biomaterials, 2010, 31, 1875-1884.	5.7	277
90	Biophysics and dynamics of natural and engineered stem cell microenvironments. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2010, 2, 49-64.	6.6	55

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91	Dissecting Regional Variations in Stress Fiber Mechanics in Living Cells with Laser Nanosurgery. <i>Biophysical Journal</i> , 2010, 99, 2775-2783.	0.2	80
92	Extracellular matrix rigidity modulates neuroblastoma cell differentiation and N-myc expression. <i>Molecular Cancer</i> , 2010, 9, 35.	7.9	93
93	Presentation Counts: Microenvironmental Regulation of Stem Cells by Biophysical and Material Cues. <i>Annual Review of Cell and Developmental Biology</i> , 2010, 26, 533-556.	4.0	149
94	High-throughput indentational elasticity measurements of hydrogel extracellular matrix substrates. <i>Applied Physics Letters</i> , 2009, 95, 063701.	1.5	8
95	The Mechanical Rigidity of the Extracellular Matrix Regulates the Structure, Motility, and Proliferation of Glioma Cells. <i>Cancer Research</i> , 2009, 69, 4167-4174.	0.4	782
96	Mechanics, malignancy, and metastasis: The force journey of a tumor cell. <i>Cancer and Metastasis Reviews</i> , 2009, 28, 113-127.	2.7	791
97	Cell-Matrix De-Adhesion Dynamics Reflect Contractile Mechanics. <i>Cellular and Molecular Bioengineering</i> , 2009, 2, 218-230.	1.0	82
98	Cell-matrix mechanobiology: Applications to brain tumors and design of tissue engineering scaffolds. <i>Journal of Tissue Engineering and Regenerative Medicine</i> , 2009, 2009, 3350-2.		3
99	Isoform-Specific Contributions of β -Actinin to Glioma Cell Mechanobiology. <i>PLoS ONE</i> , 2009, 4, e8427.	1.1	72
100	Contractility-Dependent Modulation of Cell Proliferation and Adhesion by Microscale Topographical Cues. <i>Small</i> , 2008, 4, 1416-1424.	5.2	49
101	Nanomagnetic actuation of receptor-mediated signal transduction. <i>Nature Nanotechnology</i> , 2008, 3, 36-40.	15.6	285
102	Tools to Study Cell Mechanics and Mechanotransduction. <i>Methods in Cell Biology</i> , 2007, 83, 441-472.	0.5	44
103	Brushes, cables, and anchors: Recent insights into multiscale assembly and mechanics of cellular structural networks. <i>Cell Biochemistry and Biophysics</i> , 2007, 47, 348-360.	0.9	19
104	Imaging and manipulating the structural machinery of living cells on the micro- and nanoscale. <i>International Journal of Nanomedicine</i> , 2007, 2, 333-44.	3.3	3
105	Microtubules can bear enhanced compressive loads in living cells because of lateral reinforcement. <i>Journal of Cell Biology</i> , 2006, 173, 733-741.	2.3	585
106	Viscoelastic Retraction of Single Living Stress Fibers and Its Impact on Cell Shape, Cytoskeletal Organization, and Extracellular Matrix Mechanics. <i>Biophysical Journal</i> , 2006, 90, 3762-3773.	0.2	601
107	Mechanical forces alter zyxin unbinding kinetics within focal adhesions of living cells. <i>Journal of Cellular Physiology</i> , 2006, 207, 187-194.	2.0	201
108	Molecular mechanisms for organizing the neuronal cytoskeleton. <i>BioEssays</i> , 2004, 26, 1017-1025.	1.2	77

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109	Modulation of repulsive forces between neurofilaments by sidearm phosphorylation. Biochemical and Biophysical Research Communications, 2004, 324, 489-496.	1.0	49
110	Relating Interactions between Neurofilaments to the Structure of Axonal Neurofilament Distributions through Polymer Brush Models. Biophysical Journal, 2002, 82, 2360-2372.	0.2	78
111	Role of long-range repulsive forces in organizing axonal neurofilament distributions: Evidence from mice deficient in myelin-associated glycoprotein. Journal of Neuroscience Research, 2002, 68, 681-690.	1.3	35
112	Probing the Machinery of Intracellular Trafficking with the Atomic Force Microscope. Traffic, 2001, 2, 746-756.	1.3	30
113	Direct Visualization of Vesicle~Bilayer Complexes by Atomic Force Microscopy. Langmuir, 2000, 16, 9936-9940.	1.6	36