Claudia Fischbach

List of Publications by Year
in descending order

101 papers	7,493 citations	41258 49 h-index	54797 84 g-index
107 all docs	107 docs citations	107 times ranked	10723 citing authors

#	Article	IF	Citations
1	Engineering tumors with 3D scaffolds. Nature Methods, 2007, 4, 855-860.	9.0	779
2	In vitro microvessels for the study of angiogenesis and thrombosis. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 9342-9347.	3.3	764
3	Dense type I collagen matrices that support cellular remodeling and microfabrication for studies of tumor angiogenesis and vasculogenesis in vitro. Biomaterials, 2010, 31, 8596-8607.	5.7	306
4	Cancer cell angiogenic capability is regulated by 3D culture and integrin engagement. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 399-404.	3.3	280
5	Obesity-dependent changes in interstitial ECM mechanics promote breast tumorigenesis. Science Translational Medicine, 2015, 7, 301ra130.	5.8	252
6	Lung inflammation promotes metastasis through neutrophil protease-mediated degradation of Tsp-1. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 16000-16005.	3.3	168
7	Formation of microvascular networks in vitro. Nature Protocols, 2013, 8, 1820-1836.	5.5	164
8	Glioblastoma Stem Cells Are Regulated by Interleukin-8 Signaling in a Tumoral Perivascular Niche. Cancer Research, 2013, 73, 7079-7089.	0.4	157
9	A physical sciences network characterization of non-tumorigenic and metastatic cells. Scientific Reports, 2013, 3, 1449.	1.6	146
10	Hydroxyapatite nanoparticle-containing scaffolds for the study of breast cancer bone metastasis. Biomaterials, 2011, 32, 5112-5122.	5.7	141
11	Influencing the Tumor Microenvironment: A Phase II Study of Copper Depletion Using Tetrathiomolybdate in Patients with Breast Cancer at High Risk for Recurrence and in Preclinical Models of Lung Metastases. Clinical Cancer Research, 2017, 23, 666-676.	3.2	140
12	Implanted adipose progenitor cells as physicochemical regulators of breast cancer. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 9786-9791.	3.3	134
13	Collagen microarchitecture mechanically controls myofibroblast differentiation. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 11387-11398.	3.3	127
14	Engineered Culture Models for Studies of Tumor-Microenvironment Interactions. Annual Review of Biomedical Engineering, 2013, 15, 29-53.	5.7	122
15	Integrated approach to designing growth factor delivery systems. FASEB Journal, 2007, 21, 3896-3903.	0.2	119
16	3D conducting polymer platforms for electrical control of protein conformation and cellular functions. Journal of Materials Chemistry B, 2015, 3, 5040-5048.	2.9	116
17	Adipose Tissue Engineering Based on Mesenchymal Stem Cells and Basic Fibroblast Growth Factor in Vitro. Tissue Engineering, 2005, 11, 1840-1851.	4.9	113
18	3D culture broadly regulates tumor cell hypoxia response and angiogenesis via pro-inflammatory pathways. Biomaterials, 2015, 55, 110-118.	5.7	112

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19	Generation of mature fat pads in vitro and in vivo utilizing 3-D long-term culture of 3T3-L1 preadipocytes. Experimental Cell Research, 2004, 300, 54-64.	1.2	107
20	Mechanical Strain Regulates Endothelial Cell Patterning In Vitro. Tissue Engineering, 2007, 13, 207-217.	4.9	105
21	Loss of Sirtuin 1 Alters the Secretome of Breast Cancer Cells by Impairing Lysosomal Integrity. Developmental Cell, 2019, 49, 393-408.e7.	3.1	102
22	Basic fibroblast growth factor enhances PPARÎ³ ligand-induced adipogenesis of mesenchymal stem cells. FEBS Letters, 2004, 577, 277-283.	1.3	96
23	A Novel 3-D Mineralized Tumor Model to Study Breast Cancer Bone Metastasis. PLoS ONE, 2010, 5, e8849.	1.1	95
24	Stiffness of photocrosslinked RGDâ€alginate gels regulates adipose progenitor cell behavior. Biotechnology and Bioengineering, 2011, 108, 1683-1692.	1.7	91
25	Oxygen-Controlled Three-Dimensional Cultures to Analyze Tumor Angiogenesis. Tissue Engineering - Part A, 2010, 16, 2133-2141.	1.6	89
26	In vivo tibial compression decreases osteolysis and tumor formation in a human metastatic breast cancer model. Journal of Bone and Mineral Research, 2013, 28, 2357-2367.	3.1	88
27	Polymers for pro- and anti-angiogenic therapy. Biomaterials, 2007, 28, 2069-2076.	5.7	86
28	Does UV irradiation affect polymer properties relevant to tissue engineering?. Surface Science, 2001, 491, 333-345.	0.8	83
29	Poly(D,L-lactic acid)-Poly(ethylene glycol)-Monomethyl Ether Diblock Copolymers Control Adhesion and Osteoblastic Differentiation of Marrow Stromal Cells. Tissue Engineering, 2003, 9, 71-84.	4.9	82
30	Endothelial cells promote 3D invasion of GBM by IL-8-dependent induction of cancer stem cell properties. Scientific Reports, 2019, 9, 9069.	1.6	76
31	Microfluidic Culture Models of Tumor Angiogenesis. Tissue Engineering - Part A, 2010, 16, 2143-2146.	1.6	75
32	Breast cancer cells alter the dynamics of stromal fibronectin-collagen interactions. Matrix Biology, 2017, 60-61, 86-95.	1.5	75
33	Three-Dimensional in Vitro Model of Adipogenesis: Comparison of Culture Conditions. Tissue Engineering, 2004, 10, 215-229.	4.9	71
34	Physicochemical regulation of endothelial sprouting in a 3D microfluidic angiogenesis model. Journal of Biomedical Materials Research - Part A, 2013, 101, 2948-2956.	2.1	70
35	Electrical Control of Protein Conformation. Advanced Materials, 2012, 24, 2501-2505.	11.1	67
36	Stiffening and unfolding of early deposited-fibronectin increase proangiogenic factor secretion by breast cancer-associated stromal cells. Biomaterials, 2015, 54, 63-71.	5.7	67

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37	Adipose progenitor cells increase fibronectin matrix strain and unfolding in breast tumors. Physical Biology, 2011, 8, 015008.	0.8	65
38	Direct comparison of optical and electron microscopy methods for structural characterization of extracellular vesicles. Journal of Structural Biology, 2020, 210, 107474.	1.3	64
39	Obesity-Associated Extracellular Matrix Remodeling Promotes a Macrophage Phenotype Similar to Tumor-Associated Macrophages. American Journal of Pathology, 2019, 189, 2019-2035.	1.9	62
40	Integrin-Adhesion Ligand Bond Formation of Preosteoblasts and Stem Cells in Three-Dimensional RGD Presenting Matrices. Biomacromolecules, 2008, 9, 1843-1851.	2.6	61
41	In vitro models of tumor vessels and matrix: Engineering approaches to investigate transport limitations and drug delivery in cancer. Advanced Drug Delivery Reviews, 2014, 69-70, 205-216.	6.6	60
42	Electrical control of cell density gradients on a conducting polymer surface. Chemical Communications, 2009, , 5278.	2.2	57
43	Adipose-derived stem cells increase angiogenesis through matrix metalloproteinase-dependent collagen remodeling. Integrative Biology (United Kingdom), 2016, 8, 205-215.	0.6	57
44	Fibronectin Mechanobiology Regulates Tumorigenesis. Cellular and Molecular Bioengineering, 2016, 9, 1-11.	1.0	57
45	Combination treatment significantly enhances the efficacy of antitumor therapy by preferentially targeting angiogenesis. Laboratory Investigation, 2005, 85, 756-767.	1.7	56
46	Intrafibrillar, bone-mimetic collagen mineralization regulates breast cancer cell adhesion and migration. Biomaterials, 2019, 198, 95-106.	5.7	56
47	Parylene peel-off arrays to probe the role of cellâ€"cell interactions in tumour angiogenesis. Integrative Biology (United Kingdom), 2009, 1, 587.	0.6	55
48	Multiscale characterization of the mineral phase at skeletal sites of breast cancer metastasis. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 10542-10547.	3.3	55
49	Phosphorescent nanoparticles for quantitative measurements of oxygen profiles inÂvitro and inÂvivo. Biomaterials, 2012, 33, 2710-2722.	5.7	54
50	Collagen Fiber Orientation Regulates 3D Vascular Network Formation and Alignment. ACS Biomaterials Science and Engineering, 2018, 4, 2967-2976.	2.6	54
51	Breast cancer-derived extracellular vesicles stimulate myofibroblast differentiation and pro-angiogenic behavior of adipose stem cells. Matrix Biology, 2017, 60-61, 190-205.	1.5	50
52	<i>In Vivo</i>Development and Long-Term Survival of Engineered Adipose Tissue Depend on<i>In Vitro</i>Precultivation Strategy. Tissue Engineering - Part A, 2008, 14, 275-284.	1.6	45
53	Multiscale Models of Breast Cancer Progression. Annals of Biomedical Engineering, 2012, 40, 2488-2500.	1.3	45
54	Chemical and physical properties of carbonated hydroxyapatite affect breast cancer cell behavior. Acta Biomaterialia, 2015, 24, 333-342.	4.1	45

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55	Collagen I hydrogel microstructure and composition conjointly regulate vascular network formation. Acta Biomaterialia, 2016, 44, 200-208.	4.1	45
56	Tissue-Engineered Three-Dimensional Tumor Models to Study Tumor Angiogenesis. Tissue Engineering - Part A, 2010, 16, 2147-2152.	1.6	44
57	Correlative imaging reveals physiochemical heterogeneity of microcalcifications in human breast carcinomas. Journal of Structural Biology, 2018, 202, 25-34.	1.3	41
58	Mapping and Profiling Lipid Distribution in a 3D Model of Breast Cancer Progression. ACS Central Science, 2019, 5, 768-780.	5.3	40
59	Effect of the Materials Properties of Hydroxyapatite Nanoparticles on Fibronectin Deposition and Conformation. Crystal Growth and Design, 2015, 15, 2452-2460.	1.4	39
60	Contractility, focal adhesion orientation, and stress fiber orientation drive cancer cell polarity and migration along wavy ECM substrates. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	39
61	Microengineered tumor models: insights & opportunities from a physical sciences-oncology perspective. Biomedical Microdevices, 2013, 15, 583-593.	1.4	35
62	Fibronectin conformation regulates the proangiogenic capability of tumor-associated adipogenic stromal cells. Biochimica Et Biophysica Acta - General Subjects, 2013, 1830, 4314-4320.	1.1	35
63	Cancer metabolism gets physical. Science Translational Medicine, 2018, 10, .	5.8	35
64	Biophysical Properties of Extracellular Matrix: Linking Obesity and Cancer. Trends in Cancer, 2018, 4, 271-273.	3.8	33
65	Biomechanical forces in the skeleton and their relevance to bone metastasis: Biology and engineering considerations. Advanced Drug Delivery Reviews, 2014, 79-80, 119-134.	6.6	32
66	Three-Dimensional Mechanical Loading Modulates the Osteogenic Response of Mesenchymal Stem Cells to Tumor-Derived Soluble Signals. Tissue Engineering - Part A, 2016, 22, 1006-1015.	1.6	32
67	Obesityâ€Associated Adipose Stromal Cells Promote Breast Cancer Invasion through Direct Cell Contact and ECM Remodeling. Advanced Functional Materials, 2020, 30, 1910650.	7.8	30
68	Tetrathiomolybdate (TM)-associated copper depletion influences collagen remodeling and immune response in the pre-metastatic niche of breast cancer. Npj Breast Cancer, 2021, 7, 108.	2.3	30
69	Breast cancerâ€"secreted factors perturb murine bone growth in regions prone to metastasis. Science Advances, 2021, 7, .	4.7	29
70	Biomaterials approaches to modeling macrophageâ€"extracellular matrix interactions in the tumor microenvironment. Current Opinion in Biotechnology, 2016, 40, 16-23.	3.3	26
71	Polymeric Systems for Bioinspired Delivery of Angiogenic Molecules. , 0, , 191-221.		22
72	Studying biomineralization pathways in a 3D culture model of breast cancer microcalcifications. Biomaterials, 2018, 179, 71-82.	5.7	22

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73	The Physics of Cancer. Cancer Research, 2019, 79, 2107-2110.	0.4	22
74	Hydroxyapatite mineral enhances malignant potential in a tissue-engineered model of ductal carcinoma in situ (DCIS). Biomaterials, 2019, 224, 119489.	5.7	21
75	CD44v6 increases gastric cancer malignant phenotype by modulating adipose stromal cell-mediated ECM remodeling. Integrative Biology (United Kingdom), 2018, 10, 145-158.	0.6	20
76	Modifying the Proliferative State of Target Cells to Control DNA Expression and Identifying Cell Types Transfected In Vivo. Molecular Therapy, 2007, 15, 361-368.	3.7	18
77	Engineered ECM models: Opportunities to advance understanding of tumor heterogeneity. Current Opinion in Cell Biology, 2021, 72, 1-9.	2.6	16
78	Fluorescent Silica Nanoparticles to Label Metastatic Tumor Cells in Mineralized Bone Microenvironments. Small, 2021, 17, e2001432.	5.2	14
79	Physical confinement induces malignant transformation in mammary epithelial cells. Biomaterials, 2019, 217, 119307.	5.7	13
80	Engineering strategies to capture the biological and biophysical tumor microenvironment in vitro. Advanced Drug Delivery Reviews, 2021, 176, 113852.	6.6	13
81	Protein-crystal interface mediates cell adhesion and proangiogenic secretion. Biomaterials, 2017, 116, 174-185.	5.7	12
82	Computational 4D-OCM for label-free imaging of collective cell invasion and force-mediated deformations in collagen. Scientific Reports, 2021, 11, 2814.	1.6	12
83	Engineering Modular Half-Antibody Conjugated Nanoparticles for Targeting CD44v6-Expressing Cancer Cells. Nanomaterials, 2021, 11, 295.	1.9	11
84	Regulation of Tumor Invasion by the Physical Microenvironment: Lessons from Breast and Brain Cancer. Annual Review of Biomedical Engineering, 2022, 24, 29-59.	5.7	11
85	Contextual Control of Adipose-Derived Stem Cell Function: Implications for Engineered Tumor Models. ACS Biomaterials Science and Engineering, 2017, 3, 1483-1493.	2.6	7
86	Biomaterials-Based Model Systems to Study Tumorâ€“Microenvironment Interactions. , 2020, , 1217-1236.		4
87	Editorial: Special Issue on Tissue Engineering and Biomaterials Approaches to Tumor Modeling. ACS Biomaterials Science and Engineering, 2018, 4, 291-293.	2.6	3
88	Supported Membrane Platform to Assess Surface Interactions between Extracellular Vesicles and Stromal Cells. ACS Biomaterials Science and Engineering, 2020, 6, 3945-3956.	2.6	3
89	Revealing Mechanisms of Microvesicle Biogenesis in Breast Cancer Cells via in situ Microscopy. Microscopy and Microanalysis, 2018, 24, 1256-1257.	0.2	1
90	Microenvironmental Regulation of Tumor Angiogenesis: Biological and Engineering Considerations. Biological and Medical Physics Series, 2011, , 167-202.	0.3	1

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91	Oxygen-Sensing Microfluidic Scaffolds. , 2009, , .		1
92	Electrical control of cell density and morphology on conducting polymer surfaces. , 2009, , .		0
93	Biomineralized scaffolds as an in vitro platform for studying metastatic bone disease. , 2009, , .		0
94	Photocrosslinked alginate gels for analysis of stromal cell behavior in tumors. , 2009, , .		0
95	Roll-on scaffolds. Nature Materials, 2016, 15, 138-139.	13.3	0
96	Tissue-Engineered Models for Studies of Bone Metastasis. Cancer Drug Discovery and Development, 2018, , 95-116.	0.2	0
97	Extracellular Matrix Remodelling: Obesityâ€Associated Adipose Stromal Cells Promote Breast Cancer Invasion through Direct Cell Contact and ECM Remodeling (Adv. Funct. Mater. 48/2020). Advanced Functional Materials, 2020, 30, 2070320.	7.8	0
98	Microvascular Structure and Function in Vitro. , 2009, , .		0
99	Abstract LB-349: Copper depletion as a strategy to affect the tumor microenvironment in breast cancer patients at high risk of relapse and in triple negative preclinical models of breast cancer: Updated results of a phase II study of tetrathiomolybdate (TM) in breast cancer (BC) patients (pts) at high risk for recurrence. , 2016, , .		0
100	Obesityâ€associated extracellular matrix remodeling promotes a tumorâ€associated macrophage phenotype in tumorâ€free breast adipose tissue. FASEB Journal, 2018, 32, 280.5.	0.2	0
101	Abstract 4506: Loss of SIRT1 alters the secretome of breast cancer cells by impairing lysosomal integrity. , 2018, , .		0