

Triantafyllos Stylianopoulos

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117
papers

11,600
citations

47
h-index

107
g-index

127
ext. papers

13,688
ext. citations

7
avg, IF

7.02
L-index

#	Paper	IF	Citations
117	Delivering nanomedicine to solid tumors. <i>Nature Reviews Clinical Oncology</i> , 2010 , 7, 653-64	19.4	2279
116	Multistage nanoparticle delivery system for deep penetration into tumor tissue. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011 , 108, 2426-31	11.5	808
115	Normalization of tumour blood vessels improves the delivery of nanomedicines in a size-dependent manner. <i>Nature Nanotechnology</i> , 2012 , 7, 383-8	28.7	766
114	Angiotensin inhibition enhances drug delivery and potentiates chemotherapy by decompressing tumour blood vessels. <i>Nature Communications</i> , 2013 , 4, 2516	17.4	556
113	Three-dimensional microscopy of the tumor microenvironment in vivo using optical frequency domain imaging. <i>Nature Medicine</i> , 2009 , 15, 1219-23	50.5	544
112	The role of mechanical forces in tumor growth and therapy. <i>Annual Review of Biomedical Engineering</i> , 2014 , 16, 321-46	12	527
111	Causes, consequences, and remedies for growth-induced solid stress in murine and human tumors. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012 , 109, 15101-8	11.5	512
110	Delivery of molecular and nanoscale medicine to tumors: transport barriers and strategies. <i>Annual Review of Chemical and Biomolecular Engineering</i> , 2011 , 2, 281-98	8.9	407
109	Combining two strategies to improve perfusion and drug delivery in solid tumors. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, 18632-7	11.5	280
108	Diffusion of particles in the extracellular matrix: the effect of repulsive electrostatic interactions. <i>Biophysical Journal</i> , 2010 , 99, 1342-9	2.9	273
107	Coevolution of solid stress and interstitial fluid pressure in tumors during progression: implications for vascular collapse. <i>Cancer Research</i> , 2013 , 73, 3833-41	10.1	263
106	Reengineering the Physical Microenvironment of Tumors to Improve Drug Delivery and Efficacy: From Mathematical Modeling to Bench to Bedside. <i>Trends in Cancer</i> , 2018 , 4, 292-319	12.5	229
105	Improving cancer immunotherapy using nanomedicines: progress, opportunities and challenges. <i>Nature Reviews Clinical Oncology</i> , 2020 , 17, 251-266	19.4	196
104	Design considerations for nanotherapeutics in oncology. <i>Nanomedicine: Nanotechnology, Biology, and Medicine</i> , 2015 , 11, 1893-907	6	173
103	Cell Adhesion and Matrix Stiffness: Coordinating Cancer Cell Invasion and Metastasis. <i>Frontiers in Oncology</i> , 2018 , 8, 145	5.3	152
102	Diffusion anisotropy in collagen gels and tumors: the effect of fiber network orientation. <i>Biophysical Journal</i> , 2010 , 99, 3119-28	2.9	142
101	Volume-averaging theory for the study of the mechanics of collagen networks. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2007 , 196, 2981-2990	5.7	142

100	Scaling rules for diffusive drug delivery in tumor and normal tissues. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011 , 108, 1799-803	11.5	126
99	Role of TGF β in regulation of the tumor microenvironment and drug delivery (review). <i>International Journal of Oncology</i> , 2015 , 46, 933-43	4.4	125
98	Image-based multiscale modeling predicts tissue-level and network-level fiber reorganization in stretched cell-compacted collagen gels. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009 , 106, 17675-80	11.5	122
97	Computational predictions of the tensile properties of electrospun fibre meshes: effect of fibre diameter and fibre orientation. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2008 , 1, 326-35	4.1	112
96	Compression of pancreatic tumor blood vessels by hyaluronan is caused by solid stress and not interstitial fluid pressure. <i>Cancer Cell</i> , 2014 , 26, 14-5	24.3	111
95	Defining the Role of Solid Stress and Matrix Stiffness in Cancer Cell Proliferation and Metastasis. <i>Frontiers in Oncology</i> , 2018 , 8, 55	5.3	108
94	Losartan treatment enhances chemotherapy efficacy and reduces ascites in ovarian cancer models by normalizing the tumor stroma. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 2210-2219	11.5	99
93	Pirfenidone normalizes the tumor microenvironment to improve chemotherapy. <i>Oncotarget</i> , 2017 , 8, 24506-24517	3.3	98
92	Role of vascular normalization in benefit from metronomic chemotherapy. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017 , 114, 1994-1999	11.5	97
91	Cationic nanoparticles have superior transvascular flux into solid tumors: insights from a mathematical model. <i>Annals of Biomedical Engineering</i> , 2013 , 41, 68-77	4.7	87
90	Multiscale, structure-based modeling for the elastic mechanical behavior of arterial walls. <i>Journal of Biomechanical Engineering</i> , 2007 , 129, 611-8	2.1	87
89	Combining microenvironment normalization strategies to improve cancer immunotherapy. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020 , 117, 3728-3737	11.5	86
88	Remodeling Components of the Tumor Microenvironment to Enhance Cancer Therapy. <i>Frontiers in Oncology</i> , 2015 , 5, 214	5.3	81
87	The Solid Mechanics of Cancer and Strategies for Improved Therapy. <i>Journal of Biomechanical Engineering</i> , 2017 , 139,	2.1	75
86	Permeability calculations in three-dimensional isotropic and oriented fiber networks. <i>Physics of Fluids</i> , 2008 , 20, 123601	4.4	68
85	Benefits of vascular normalization are dose and time dependent--letter. <i>Cancer Research</i> , 2013 , 73, 7144-16.1	16.1	67
84	Role of constitutive behavior and tumor-host mechanical interactions in the state of stress and growth of solid tumors. <i>PLoS ONE</i> , 2014 , 9, e104717	3.7	67
83	Tranilast-induced stress alleviation in solid tumors improves the efficacy of chemo- and nanotherapeutics in a size-independent manner. <i>Scientific Reports</i> , 2017 , 7, 46140	4.9	63

82	Mathematical modeling of herpes simplex virus distribution in solid tumors: implications for cancer gene therapy. <i>Clinical Cancer Research</i> , 2009 , 15, 2352-60	12.9	63
81	Hyaluronan-Derived Swelling of Solid Tumors, the Contribution of Collagen and Cancer Cells, and Implications for Cancer Therapy. <i>Neoplasia</i> , 2016 , 18, 732-741	6.4	61
80	AFM assessing of nanomechanical fingerprints for cancer early diagnosis and classification: from single cell to tissue level. <i>Nanoscale</i> , 2018 , 10, 20930-20945	7.7	61
79	Dexamethasone Increases Cisplatin-Loaded Nanocarrier Delivery and Efficacy in Metastatic Breast Cancer by Normalizing the Tumor Microenvironment. <i>ACS Nano</i> , 2019 , 13, 6396-6408	16.7	55
78	Stress-mediated progression of solid tumors: effect of mechanical stress on tissue oxygenation, cancer cell proliferation, and drug delivery. <i>Biomechanics and Modeling in Mechanobiology</i> , 2015 , 14, 1391-402	3.8	55
77	TGF- β inhibition combined with cytotoxic nanomedicine normalizes triple negative breast cancer microenvironment towards anti-tumor immunity. <i>Theranostics</i> , 2020 , 10, 1910-1922	12.1	52
76	Reengineering the Tumor Vasculature: Improving Drug Delivery and Efficacy. <i>Trends in Cancer</i> , 2018 , 4, 258-259	12.5	49
75	Towards Optimal Design of Cancer Nanomedicines: Multi-stage Nanoparticles for the Treatment of Solid Tumors. <i>Annals of Biomedical Engineering</i> , 2015 , 43, 2291-300	4.7	49
74	Uniaxial and biaxial mechanical behavior of human amnion. <i>Journal of Materials Research</i> , 2005 , 20, 2902-2909	2.9	49
73	Solid Stress Facilitates Fibroblasts Activation to Promote Pancreatic Cancer Cell Migration. <i>Annals of Biomedical Engineering</i> , 2018 , 46, 657-669	4.7	47
72	Sonic-hedgehog pathway inhibition normalizes desmoplastic tumor microenvironment to improve chemo- and nanotherapy. <i>Journal of Controlled Release</i> , 2017 , 261, 105-112	11.7	47
71	Experimental and computational analyses reveal dynamics of tumor vessel cooption and optimal treatment strategies. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 2662-2671	11.5	46
70	Amphiphilic Polymer Conetworks Based on End-Linked Core-First Star Block Copolymers: Structure Formation with Long-Range Order. <i>ACS Macro Letters</i> , 2015 , 4, 1163-1168	6.6	43
69	Image-based biomechanics of collagen-based tissue equivalents. <i>IEEE Engineering in Medicine and Biology Magazine</i> , 2009 , 28, 10-8		38
68	Multistage nanoparticles for improved delivery into tumor tissue. <i>Methods in Enzymology</i> , 2012 , 508, 109-30	1.7	37
67	Transforming growth factor- β modulates pancreatic cancer associated fibroblasts cell shape, stiffness and invasion. <i>Biochimica Et Biophysica Acta - General Subjects</i> , 2018 , 1862, 1537-1546	4	36
66	Comparing machine learning algorithms for predicting ICU admission and mortality in COVID-19. <i>Npj Digital Medicine</i> , 2021 , 4, 87	15.7	34
65	Solid tumors are poroelastic solids with a chemo-mechanical feedback on growth. <i>Journal of Elasticity</i> , 2017 , 129, 107-124	1.5	32

64	A Validated Multiscale In-Silico Model for Mechano-sensitive Tumour Angiogenesis and Growth. <i>PLoS Computational Biology</i> , 2017 , 13, e1005259	5	32
63	Solid stress-induced migration is mediated by GDF15 through Akt pathway activation in pancreatic cancer cells. <i>Scientific Reports</i> , 2019 , 9, 978	4.9	31
62	Double-networks based on pH-responsive, amphiphilic core-first star first polymer conetworks prepared by sequential RAFT polymerization. <i>Polymer Chemistry</i> , 2017 , 8, 245-259	4.9	28
61	Identification of Ras suppressor-1 (RSU-1) as a potential breast cancer metastasis biomarker using a three-dimensional in vitro approach. <i>Oncotarget</i> , 2017 , 8, 27364-27379	3.3	28
60	The Role of Tumor Microenvironment in Cancer Metastasis: Molecular Mechanisms and Therapeutic Opportunities. <i>Cancers</i> , 2021 , 13,	6.6	27
59	Biphasic modeling of brain tumor biomechanics and response to radiation treatment. <i>Journal of Biomechanics</i> , 2016 , 49, 1524-1531	2.9	26
58	Evolution of osmotic pressure in solid tumors. <i>Journal of Biomechanics</i> , 2014 , 47, 3441-7	2.9	23
57	Tensile mechanical properties and hydraulic permeabilities of electrospun cellulose acetate fiber meshes. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2012 , 100, 2222-30	3.5	23
56	Accumulation of mechanical forces in tumors is related to hyaluronan content and tissue stiffness. <i>PLoS ONE</i> , 2018 , 13, e0193801	3.7	23
55	Towards patient-specific modeling of brain tumor growth and formation of secondary nodes guided by DTI-MRI. <i>NeuroImage: Clinical</i> , 2018 , 20, 664-673	5.3	21
54	Ras suppressor-1 (RSU-1) promotes cell invasion in aggressive glioma cells and inhibits it in non-aggressive cells through STAT6 phospho-regulation. <i>Scientific Reports</i> , 2019 , 9, 7782	4.9	19
53	NAA40 contributes to colorectal cancer growth by controlling PRMT5 expression. <i>Cell Death and Disease</i> , 2019 , 10, 236	9.8	19
52	Targeting Inflammation to Improve Tumor Drug Delivery. <i>Trends in Cancer</i> , 2017 , 3, 621-630	12.5	19
51	Activin A Signaling Regulates IL13R α Expression to Promote Breast Cancer Metastasis. <i>Frontiers in Oncology</i> , 2019 , 9, 32	5.3	18
50	Vasodilator-Stimulated Phosphoprotein (VASP) depletion from breast cancer MDA-MB-231 cells inhibits tumor spheroid invasion through downregulation of Migfilin, Eatenin and urokinase-plasminogen activator (uPA). <i>Experimental Cell Research</i> , 2017 , 352, 281-292	4.2	17
49	Atomic Force Microscopy Probing of Cancer Cells and Tumor Microenvironment Components. <i>BioNanoScience</i> , 2016 , 6, 33-46	3.4	17
48	Microstructure-Based, Multiscale Modeling for the Mechanical Behavior of Hydrated Fiber Networks. <i>Multiscale Modeling and Simulation</i> , 2008 , 7, 22-43	1.8	16
47	Normalizing the Microenvironment Overcomes Vessel Compression and Resistance to Nano-immunotherapy in Breast Cancer Lung Metastasis. <i>Advanced Science</i> , 2021 , 8, 2001917	13.6	16

46	Mechanical Compression Regulates Brain Cancer Cell Migration Through MEK1/Erk1 Pathway Activation and GDF15 Expression. <i>Frontiers in Oncology</i> , 2019 , 9, 992	5.3	15
45	Remodeling of extracellular matrix due to solid stress accumulation during tumor growth. <i>Connective Tissue Research</i> , 2015 , 56, 345-54	3.3	14
44	Inhibition of Breast Cancer Cell Invasion by Ras Suppressor-1 (RSU-1) Silencing Is Reversed by Growth Differentiation Factor-15 (GDF-15). <i>International Journal of Molecular Sciences</i> , 2019 , 20,	6.3	14
43	In silico dynamics of COVID-19 phenotypes for optimizing clinical management. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021 , 118,	11.5	14
42	Collagen content and extracellular matrix cause cytoskeletal remodelling in pancreatic fibroblasts. <i>Journal of the Royal Society Interface</i> , 2019 , 16, 20190226	4.1	13
41	Multiscale modelling of solid tumour growth: the effect of collagen micromechanics. <i>Biomechanics and Modeling in Mechanobiology</i> , 2016 , 15, 1079-90	3.8	13
40	Alignment of electrospun polymer fibers using a concave collector. <i>RSC Advances</i> , 2015 , 5, 104400-104407	4.7	12
39	Multiscale computation for bioartificial soft tissues with complex geometries. <i>Engineering With Computers</i> , 2009 , 25, 87-95	4.5	12
38	Double-networks based on interconnected amphiphilic triblock star first polymer conetworks prepared by RAFT polymerization. <i>Journal of Polymer Science Part A</i> , 2018 , 56, 2161-2174	2.5	12
37	In-silico dynamic analysis of cytotoxic drug administration to solid tumours: Effect of binding affinity and vessel permeability. <i>PLoS Computational Biology</i> , 2018 , 14, e1006460	5	10
36	Stress alleviation strategy in cancer treatment: Insights from a mathematical model. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 2018 , 98, 2295-2306	1	9
35	A structural, kinetic model of soft tissue thermomechanics. <i>Biophysical Journal</i> , 2008 , 94, 717-25	2.9	9
34	Ras Suppressor-1 (RSU-1) in Cancer Cell Metastasis: Friend or Foe?. <i>Critical Reviews in Oncogenesis</i> , 2017 , 22, 249-253	1.3	9
33	Evaluation of novel, cationic electrospun microfibrinous membranes as adsorbents in bacteria removal. <i>RSC Advances</i> , 2015 , 5, 67617-67629	3.7	8
32	ILK silencing inhibits migration and invasion of more invasive glioblastoma cells by downregulating ROCK1 and Fascin-1. <i>Molecular and Cellular Biochemistry</i> , 2020 , 471, 143-153	4.2	8
31	Multiscale biphasic modelling of peritumoural collagen microstructure: The effect of tumour growth on permeability and fluid flow. <i>PLoS ONE</i> , 2017 , 12, e0184511	3.7	8
30	Multiprocess dynamic modeling of tumor evolution with bayesian tumor-specific predictions. <i>Annals of Biomedical Engineering</i> , 2014 , 42, 1095-111	4.7	8
29	Mechanical properties of structurally-defined magnetoactive polymer (co)networks. <i>RSC Advances</i> , 2015 , 5, 20011-20019	3.7	7

28	A discussion regarding the approximation of cylindrical and spherical shaped samples as half spaces in AFM nanoindentation experiments. <i>Materials Research Express</i> , 2018 , 5, 085402	1.7	7
27	Coordinated Expression of Ras Suppressor 1 (RSU-1) and Growth Differentiation Factor 15 (GDF15) Affects Glioma Cell Invasion. <i>Cancers</i> , 2019 , 11,	6.6	7
26	Depletion of Ras Suppressor-1 (RSU-1) promotes cell invasion of breast cancer cells through a compensatory upregulation of a truncated isoform. <i>Scientific Reports</i> , 2019 , 9, 10050	4.9	7
25	Exploring the Nano-Surface of Collagenous and Other Fibrotic Tissues with AFM. <i>Methods in Molecular Biology</i> , 2017 , 1627, 453-489	1.4	7
24	Mechanical stress signaling in pancreatic cancer cells triggers p38 MAPK- and JNK-dependent cytoskeleton remodeling and promotes cell migration via Rac1/Cdc42/Myosin II. <i>Molecular Cancer Research</i> , 2021 ,	6.6	6
23	Structurally-defined semi-interpenetrating amphiphilic polymer networks with tunable and predictable mechanical response. <i>RSC Advances</i> , 2016 , 6, 43278-43283	3.7	6
22	On the Impact of Chemo-Mechanically Induced Phenotypic Transitions in Gliomas. <i>Cancers</i> , 2019 , 11,	6.6	5
21	Engineered magnetoactive collagen hydrogels with tunable and predictable mechanical response. <i>Materials Science and Engineering C</i> , 2020 , 114, 111089	8.3	5
20	Intelligent drug delivery systems for the treatment of solid tumors. <i>European Journal of Nanomedicine</i> , 2016 , 8,		5
19	Atomic force microscopy nano-characterization of 3D collagen gels with tunable stiffness. <i>MethodsX</i> , 2018 , 5, 503-513	1.9	5
18	Experimental measurements and mathematical modeling towards quantification of brain swelling stress. <i>Journal of Biomechanics</i> , 2017 , 56, 42-47	2.9	4
17	Biomechanical modelling of spinal tumour anisotropic growth. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2020 , 476, 20190364	2.4	4
16	Silencing of Growth Differentiation Factor-15 Promotes Breast Cancer Cell Invasion by Down-regulating Focal Adhesion Genes. <i>Anticancer Research</i> , 2020 , 40, 1375-1385	2.3	3
15	Amalgamated fiber/hydrogel composites based on semi-interpenetrating polymer networks and electrospun nanocomposite fibrous mats. <i>European Polymer Journal</i> , 2020 , 140, 110041	5.2	3
14	Vascular Bursts Act as a Versatile Tumor Vessel Permeation Route for Blood-Borne Particles and Cells. <i>Small</i> , 2021 , 17, e2103751	11	3
13	Normalizing tumor microenvironment with nanomedicine and metronomic therapy to improve immunotherapy.. <i>Journal of Controlled Release</i> , 2022 ,	11.7	3
12	Ras Suppressor-1 (RSU1) in Cancer Cell Metastasis: A Tale of a Tumor Suppressor. <i>International Journal of Molecular Sciences</i> , 2020 , 21,	6.3	2
11	Inducing Biomechanical Heterogeneity in Brain Tumor Modeling by MR Elastography: Effects on Tumor Growth, Vascular Density and Delivery of Therapeutics.. <i>Cancers</i> , 2022 , 14,	6.6	2

10	In silico dynamics of COVID-19 phenotypes for optimizing clinical management 2020 ,		2
9	Endothelin Inhibition Potentiates Cancer Immunotherapy Revealing Mechanical Biomarkers Predictive of Response. <i>Advanced Therapeutics</i> , 2021 , 4, 2000289	4.9	2
8	Decompressive craniectomy of post-traumatic brain injury: an in silico modelling approach for intracranial hypertension management. <i>Scientific Reports</i> , 2020 , 10, 18673	4.9	1
7	Tuning the Mechanical Properties of BIEE-Crosslinked Semi-Interpenetrating, Double-Hydrophilic Hydrogels. <i>Macromolecular Materials and Engineering</i> , 2018 , 303, 1700643	3.9	1
6	Design rules for cancer nanomedicines 2012 ,		1
5	Strategies to minimize heterogeneity and optimize clinical trials in Acute Respiratory Distress Syndrome (ARDS): Insights from mathematical modelling.. <i>EBioMedicine</i> , 2022 , 75, 103809	8.8	1
4	Uniaxial and Biaxial Mechanical Behavior of Human Amnion. <i>Materials Research Society Symposia Proceedings</i> , 2004 , 844, 1		0
3	Vascular Normalization to Improve Treatment of COVID-19: Lessons from Treatment of Cancer. <i>Clinical Cancer Research</i> , 2021 , 27, 2706-2711	12.9	0
2	Reply to Ciccolini et al.: Using mathematical modeling to predict response to antiangiogenic therapy in cancer patients. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, E3454	11.5	
1	Mechanical Stress Regulates Tissue Oxygenation, Cancer Cell Proliferation and Drug Delivery During Progression of Solid Tumors. <i>IFMBE Proceedings</i> , 2016 , 620-623	0.2	