Seok Chung

List of Publications by Year
in descending order

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122	7,471	66343	58581
papers	citations	42 h-index	82 g-index

125	125	125	9463
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Microfluidic assay for simultaneous culture of multiple cell types on surfaces or within hydrogels. Nature Protocols, 2012, 7, 1247-1259.	12.0	518
2	Cell migration into scaffolds under co-culture conditions in a microfluidic platform. Lab on A Chip, 2009, 9, 269-275.	6.0	456
3	A microfluidic 3D inÂvitro model for specificity of breast cancer metastasis to bone. Biomaterials, 2014, 35, 2454-2461.	11.4	440
4	PDMS-based micro PCR chip with Parylene coating. Journal of Micromechanics and Microengineering, 2003, 13, 768-774.	2.6	356
5	Design, fabrication and implementation of a novel multi-parameter control microfluidic platform for three-dimensional cell culture and real-time imaging. Lab on A Chip, 2008, 8, 1468.	6.0	312
6	Co-Culture of Tumor Spheroids and Fibroblasts in a Collagen Matrix-Incorporated Microfluidic Chip Mimics Reciprocal Activation in Solid Tumor Microenvironment. PLoS ONE, 2016, 11, e0159013.	2.5	205
7	In Vitro Model of Tumor Cell Extravasation. PLoS ONE, 2013, 8, e56910.	2.5	201
8	Applications of micromixing technology. Analyst, The, 2010, 135, 460.	3.5	192
9	Transportâ€mediated angiogenesis in 3D epithelial coculture. FASEB Journal, 2009, 23, 2155-2164.	0.5	179
10	Bloodâ€“Brain Barrier Dysfunction in a 3D In Vitro Model of Alzheimer's Disease. Advanced Science, 2019, 6, 1900962.	11.2	168
11	A high-throughput microfluidic assay to study neurite response to growth factor gradients. Lab on A Chip, 2011, 11, 497-507.	6.0	145
12	In vitro 3D collective sprouting angiogenesis under orchestrated ANG-1 and VEGF gradients. Lab on A Chip, 2011, 11, 2175.	6.0	142
13	Microfluidic Platforms for Studies of Angiogenesis, Cell Migration, and Cellâ€“Cell Interactions. Annals of Biomedical Engineering, 2010, 38, 1164-1177.	2.5	140
14	Generation of core-shell microcapsules with three-dimensional focusing device for efficient formation of cell spheroid. Lab on A Chip, 2011, 11, 246-252.	6.0	140
15	Poly(dimethylsiloxane)-Based Protein Preconcentration Using a Nanogap Generated by Junction Gap Breakdown. Analytical Chemistry, 2007, 79, 6868-6873.	6.5	138
16	Microfluidic co-culture of pancreatic tumor spheroids with stellate cells as a novel 3D model for investigation ofÂstroma-mediated cell motility and drug resistance. Journal of Experimental and Clinical Cancer Research, 2018, 37, 4.	8.6	129
17	Rapid three-dimensional passive rotation micromixer using the breakup process. Journal of Micromechanics and Microengineering, 2004, 14, 6-14.	2.6	127
18	Nonâ€Lithographic Wrinkle Nanochannels for Protein Preconcentration. Advanced Materials, 2008, 20, 3011-3016.	21.0	125

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19	Collagen-based brain microvasculature model in vitro using three-dimensional printed template. Biomicrofluidics, 2015, 9, 024115.	2.4	123
20	Microfluidic Approaches to Bacterial Biofilm Formation. Molecules, 2012, 17, 9818-9834.	3.8	122
21	A quantitative microfluidic angiogenesis screen for studying anti-angiogenic therapeutic drugs. Lab on A Chip, 2015, 15, 301-310.	6.0	116
22	Cancer-derived exosomes trigger endothelial to mesenchymal transition followed by the induction of cancer-associated fibroblasts. Acta Biomaterialia, 2018, 76, 146-153.	8.3	116
23	Sprouting Angiogenesis under a Chemical Gradient Regulated by Interactions with an Endothelial Monolayer in a Microfluidic Platform. Analytical Chemistry, 2011, 83, 8454-8459.	6.5	102
24	In vivoâ€“mimicking microfluidic perfusion culture of pancreatic islet spheroids. Science Advances, 2019, 5, eaax4520.	10.3	101
25	In-plane single-crystal-silicon microneedles for minimally invasive microfluid systems. Sensors and Actuators A: Physical, 2004, 114, 276-284.	4.1	97
26	Surfaceâ€Treatmentâ€Induced Threeâ€Dimensional Capillary Morphogenesis in a Microfluidic Platform. Advanced Materials, 2009, 21, 4863-4867.	21.0	85
27	Hot embossing for fabrication of a microfluidic 3D cell culture platform. Biomedical Microdevices, 2011, 13, 325-333.	2.8	83
28	Differentiation of Embryonic Stem Cells into Cardiomyocytes in a Compliant Microfluidic System. Annals of Biomedical Engineering, 2011, 39, 1840-1847.	2.5	77
29	Microfluidic synthesis of a cell adhesive Janus polyurethane microfiber. Lab on A Chip, 2009, 9, 2596.	6.0	75
30	Macrophagesâ€Triggered Sequential Remodeling of Endotheliumâ€Interstitial Matrix to Form Preâ€Metastatic Niche in Microfluidic Tumor Microenvironment. Advanced Science, 2019, 6, 1900195.	11.2	74
31	Simple and Highly Sensitive Molecular Diagnosis of Zika Virus by Lateral Flow Assays. Analytical Chemistry, 2016, 88, 12272-12278.	6.5	73
32	Transcriptional regulatory networks of tumor-associated macrophages that drive malignancy in mesenchymal glioblastoma. Genome Biology, 2020, 21, 216.	8.8	73
33	Recapitulation of inÂvivo-like paracrine signals of human mesenchymal stem cells for functional neuronal differentiation of human neural stem cells in a 3D microfluidic system. Biomaterials, 2015, 63, 177-188.	11.4	67
34	An aptamer-antibody complex (oligobody) as a novel delivery platform for targeted cancer therapies. Journal of Controlled Release, 2016, 229, 1-9.	9.9	66
35	Balance of interstitial flow magnitude and vascular endothelial growth factor concentration modulates three-dimensional microvascular network formation. APL Bioengineering, 2019, 3, 036102.	6.2	63
36	Hydrodynamic effects on bacterial biofilm development in a microfluidic environment. Lab on A Chip, 2013, 13, 1846.	6.0	60

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37	Reconstituting Vascular Microenvironment of Neural Stem Cell Niche in Threeâ€Dimensional Extracellular Matrix. Advanced Healthcare Materials, 2014, 3, 1457-1464.	7.6	58
38	Largeâ€Scale, Ultrapliable, and Freeâ€Standing Nanomembranes. Advanced Materials, 2013, 25, 2167-2173.	21.0	53
39	Effect of the pore size in a 3D bioprinted gelatin scaffold on fibroblast proliferation. Journal of Industrial and Engineering Chemistry, 2018, 67, 388-395.	5.8	50
40	Microfluidic assay of endothelial cell migration in 3D interpenetrating polymer semi-network HA-Collagen hydrogel. Biomedical Microdevices, 2011, 13, 717-723.	2.8	46
41	Temperature-dependent threshold shear stress of red blood cell aggregation. Journal of Biomechanics, 2010, 43, 546-550.	2.1	45
42	Intrinsic FGF2 and FGF5 promotes angiogenesis of human aortic endothelial cells in 3D microfluidic angiogenesis system. Scientific Reports, 2016, 6, 28832.	3.3	45
43	Biomechanical Regulation of Endothelium-dependent Events Critical for Adaptive Remodeling. Journal of Biological Chemistry, 2009, 284, 8412-8420.	3.4	44
44	A microfluidic array for quantitative analysis of human neural stem cell self-renewal and differentiation in three-dimensional hypoxic microenvironment. Biomaterials, 2013, 34, 6607-6614.	11.4	44
45	Battery operated preconcentration-assisted lateral flow assay. Lab on A Chip, 2017, 17, 2451-2458.	6.0	43
46	A low resistance microfluidic system for the creation of stable concentration gradients in a defined 3D microenvironment. Biomedical Microdevices, 2010, 12, 1027-1041.	2.8	40
47	Construction of Continuous Capillary Networks Stabilized by Pericyte-like Perivascular Cells. Tissue Engineering - Part A, 2019, 25, 499-510.	3.1	40
48	Convective exosome-tracing microfluidics for analysis of cell-non-autonomous neurogenesis. Biomaterials, 2017, 112, 82-94.	11.4	39
49	Viscoelastic lithography for fabricating self-organizing soft micro-honeycomb structures with ultra-high aspect ratios. Nature Communications, 2016, 7, 11269.	12.8	38
50	Generation of uniform liver spheroids from human pluripotent stem cells for imaging-based drug toxicity analysis. Biomaterials, 2021, 269, 120529.	11.4	38
51	Inhibition of tumor progression and M2 microglial polarization by extracellular vesicle-mediated microRNA-124 in a 3D microfluidic glioblastoma microenvironment. Theranostics, 2021, 11, 9687-9704.	10.0	38
52	Serial dilution microchip for cytotoxicity test. Journal of Micromechanics and Microengineering, 2004, 14, 1165-1170.	2.6	36
53	Graphene-oxide quenching-based molecular beacon imaging of exosome-mediated transfer of neurogenic miR-193a on microfluidic platform. Biosensors and Bioelectronics, 2019, 126, 647-656.	10.1	35
54	Retinal Pigment Epithelial Cell Behavior is Modulated by Alterations in Focal Cellâ€“Substrate Contacts. , 2004, 45, 4210.		33

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55	On-chip erythrocyte deformability test under optical pressure. Lab on A Chip, 2007, 7, 516.	6.0	33
56	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.	2.2	33
57	Extracellular Matrix Heterogeneity Regulates Threeâ€Dimensional Morphologies of Breast Adenocarcinoma Cell Invasion. Advanced Healthcare Materials, 2013, 2, 790-794.	7.6	33
58	Clonorchis sinensis excretory-secretory products increase malignant characteristics of cholangiocarcinoma cells in three-dimensional co-culture with biliary ductal plates. PLoS Pathogens, 2019, 15, e1007818.	4.7	32
59	Nanointersticeâ€Driven Microflow. Small, 2009, 5, 609-613.	10.0	30
60	Concentration gradients in microfluidic 3D matrix cell culture systems. International Journal of Micro-nano Scale Transport, 2010, 1, 27-36.	0.2	30
61	In vitro nasal mucosa gland-like structure formation on a chip. Lab on A Chip, 2017, 17, 1578-1584.	6.0	30
62	Constructive remodeling of a synthetic endothelial extracellular matrix. Scientific Reports, 2016, 5, 18290.	3.3	28
63	Remote Manipulation of Slidable Nanoâ€Ligand Switch Regulates the Adhesion and Regenerative Polarization of Macrophages. Advanced Functional Materials, 2020, 30, 2001446.	14.9	27
64	Microfabricated fluorescence-activated cell sorter through hydrodynamic flow manipulation. Microsystem Technologies, 2006, 12, 746-753.	2.0	26
65	Origami-paper-based device for microvesicle/exosome preconcentration and isolation. Lab on A Chip, 2019, 19, 3917-3921.	6.0	25
66	Study on chemotaxis and chemokinesis of bone marrow-derived mesenchymal stem cells in hydrogel-based 3D microfluidic devices. Biomaterials Research, 2016, 20, 25.	6.9	24
67	Enhanced oxygen permeability in membrane-bottomed concave microwells for the formation of pancreatic islet spheroids. Acta Biomaterialia, 2018, 65, 185-196.	8.3	24
68	Differential heart rate variability and physiological responses associated with accumulated short- and long-term stress in rodents. Physiology and Behavior, 2017, 171, 21-31.	2.1	23
69	Effect of cross-linking on the dimensional stability and biocompatibility of a tailored 3D-bioprinted gelatin scaffold. International Journal of Biological Macromolecules, 2019, 135, 659-667.	7.5	23
70	Development of endovascular microtools. Journal of Micromechanics and Microengineering, 2002, 12, 824-831.	2.6	22
71	Development of MEMS-based Cerebrospinal Fluid Shunt System. Biomedical Microdevices, 2003, 5, 311-321.	2.8	22
72	In vitro angiogenesis assay for the study of cell-encapsulation therapy. Lab on A Chip, 2012, 12, 2942.	6.0	21

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73	Spheroid Formation of Hepatocarcinoma Cells in Microwells: Experiments and Monte Carlo Simulations. PLoS ONE, 2016, 11, e0161915.	2.5	21
74	Phenotypic Heterogeneity and Plasticity of Cancer Cell Migration in a Pancreatic Tumor Three-Dimensional Culture Model. Cancers, 2020, 12, 1305.	3.7	21
75	Clonorchis sinensis Infestation Promotes Three-Dimensional Aggregation and Invasion of Cholangiocarcinoma Cells. PLoS ONE, 2014, 9, e110705.	2.5	19
76	Hydrogel-incorporating unit in a well: 3D cell culture for high-throughput analysis. Lab on A Chip, 2018, 18, 2604-2613.	6.0	19
77	Expansion channel for microchip flow cytometers. Lab on A Chip, 2006, 6, 1381.	6.0	18
78	Repurposing Penfluridol in Combination with Temozolomide for the Treatment of Glioblastoma. Cancers, 2019, 11, 1310.	3.7	18
79	Smooth muscle progenitor cells from peripheral blood promote the neovascularization of endothelial colony-forming cells. Biochemical and Biophysical Research Communications, 2014, 449, 405-411.	2.1	17
80	Isolation of extracellular vesicles from small volumes of plasma using a microfluidic aqueous two-phase system. Lab on A Chip, 2020, 20, 3552-3559.	6.0	17
81	A highâ€throughput biomimetic boneâ€onâ€aâ€chip platform with artificial intelligenceâ€assisted image analysis for osteoporosis drug testing. Bioengineering and Translational Medicine, 2023, 8, .	7.1	17
82	Implantable microfluidic device for the formation of three-dimensional vasculature by human endothelial progenitor cells. Biotechnology and Bioprocess Engineering, 2014, 19, 379-385.	2.6	16
83	Ethanol-dispersed and antibody-conjugated polymer nanofibers for the selective capture and 3-dimensional culture of EpCAM-positive cells. Nanomedicine: Nanotechnology, Biology, and Medicine, 2017, 13, 1617-1625.	3.3	16
84	Isolation of spheroid-forming single cells from gastric cancer cell lines: enrichment of cancer stem-like cells. BioTechniques, 2018, 65, 197-203.	1.8	16
85	Modulation of Nogo receptor 1 expression orchestrates myelin-associated infiltration of glioblastoma. Brain, 2021, 144, 636-654.	7.6	16
86	Active sealing for soft polymer microchips: method and practical applications. Journal of Micromechanics and Microengineering, 2006, 16, 708-714.	2.6	15
87	Ion concentration polarization for pre-concentration of biological samples without pH change. Analyst, The, 2016, 141, 6510-6514.	3.5	15
88	On-Chip Lipid Extraction Using Superabsorbent Polymers for Mass Spectrometry. Analytical Chemistry, 2017, 89, 13365-13373.	6.5	15
89	Microfluidic immunoassay for point-of-care testing using simple fluid vent control. Sensors and Actuators B: Chemical, 2020, 316, 128094.	7.8	15
90	Mutation-specific non-canonical pathway of PTEN as a distinct therapeutic target for glioblastoma. Cell Death and Disease, 2021, 12, 374.	6.3	15

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91	Asymmetric nozzle structure for particles converging into a highly confined region. Current Applied Physics, 2006, 6, 992-995.	2.4	14
92	The Stabilization Effect of Mesenchymal Stem Cells on the Formation of Microvascular Networks in a Microfluidic Device. Journal of Biomechanical Science and Engineering, 2013, 8, 114-128.	0.3	14
93	A three-dimensional in vitro model of the peripheral nervous system. NPG Asia Materials, 2021, 13, .	7.9	14
94	Microfluidic platforms for the study of cancer metastasis. Biomedical Engineering Letters, 2012, 2, 72-77.	4.1	13
95	Effects of peak anomalies with the hydrophilic or hydrophobic properties of reservoirs during serial injection on a capillary electrophoresis microchip. Journal of Chromatography A, 2003, 1013, 111-122.	3.7	12
96	Drug screening by uniform patient derived colorectal cancer hydro-organoids. Biomaterials, 2021, 276, 121004.	11.4	12
97	Recapitulated Crosstalk between Cerebral Metastatic Lung Cancer Cells and Brain Perivascular Tumor Microenvironment in a Microfluidic Coâ€Culture Chip. Advanced Science, 2022, 9, .	11.2	12
98	Graded 6-OHDA-induced dopamine depletion in the nigrostriatal pathway evokes progressive pathological neuronal activities in the subthalamic nucleus of a hemi-parkinsonian mouse. Behavioural Brain Research, 2018, 344, 42-47.	2.2	11
99	A rapid quantitative on-site coronavirus disease 19 serological test. Biosensors and Bioelectronics, 2021, 191, 113406.	10.1	10
100	Microfluidic one-directional interstitial flow generation from cancer to cancer associated fibroblast. Acta Biomaterialia, 2022, 144, 258-265.	8.3	10
101	Microfluidic in-reservoir pre-concentration using a buffer drain technique. Lab on A Chip, 2014, 14, 2778-2782.	6.0	9
102	Generation of digitized microfluidic filling flow by vent control. Biosensors and Bioelectronics, 2017, 92, 465-471.	10.1	9
103	Functional integration of serial dilution and capillary electrophoresis on a PDMS microchip. Biotechnology and Bioprocess Engineering, 2003, 8, 233-239.	2.6	8
104	Identification of different gene expressions between diffuse- and intestinal-type spheroid-forming gastric cancer cells. Gastric Cancer, 2019, 22, 967-979.	5.3	8
105	Self-organization of hepatocyte morphogenesis depending on the size of collagen microbeads relative to hepatocytes. Biofabrication, 2019, 11, 035007.	7.1	7
106	Highly efficient and scalable biomarker preconcentrator based on nanoelectrokinetics. Biosensors and Bioelectronics, 2021, 176, 112904.	10.1	7
107	Nanointerstice-driven microflow patterns in physical interrupts. Microfluidics and Nanofluidics, 2015, 18, 1433-1438.	2.2	6
108	Endothelial-neurosphere crosstalk in microwell arrays regulates self-renewal and differentiation of human neural stem cells. Journal of Industrial and Engineering Chemistry, 2019, 74, 148-157.	5.8	6

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109	Nano-Interstice Driven Powerless Blood Plasma Extraction in a Membrane Filter Integrated Microfluidic Device. Sensors, 2021, 21, 1366.	3.8	6
110	Timescale analysis for estimating upper limit perfusion rate in a microfluidic perfusion cell culture platform. Microfluidics and Nanofluidics, 2015, 19, 777-786.	2.2	5
111	Gamma irradiation exposure for collapsed cell junctions and reduced angiogenesis of 3-D in vitro blood vessels. Scientific Reports, 2021, 11, 18230.	3.3	5
112	Single-step UV diffraction lithography to define a hydrophobic SU-8 interconnected hoodoo structure. Microsystem Technologies, 2013, 19, 1025-1032.	2.0	4
113	Angiogenic Type I Collagen Extracellular Matrix Integrated with Recombinant Bacteriophages Displaying Vascular Endothelial Growth Factors. Advanced Healthcare Materials, 2016, 5, 205-212.	7.6	4
114	Wire Electrodes Embedded in Artificial Conduit for Long-term Monitoring of the Peripheral Nerve Signal. Micromachines, 2019, 10, 184.	2.9	4
115	Microfluidic Reconstitution of Tumor Microenvironment for Nanomedical Applications. Advanced Healthcare Materials, 2021, 10, 2002122.	7.6	4
116	Transcriptomic profiling of three-dimensional cholangiocyte spheroids long term exposed to repetitive Clonorchis sinensis excretory-secretory products. Parasites and Vectors, 2021, 14, 213.	2.5	4
117	SRPSâ€“deep-learning-based photometric stereo using superresolution images. Journal of Computational Design and Engineering, 2021, 8, 995-1012.	3.1	3
118	Pre-Metastatic Niches: Macrophages-Triggered Sequential Remodeling of Endothelium-Interstitial Matrix to Form Pre-Metastatic Niche in Microfluidic Tumor Microenvironment (Adv. Sci. 11/2019). Advanced Science, 2019, 6, 1970068.	11.2	2
119	Simulation and Experimental Study of Ion Concentration Polarization Induced Electroconvective Vortex and Particle Movement. Micromachines, 2021, 12, 903.	2.9	2
120	Hydrogels: Extracellular Matrix Heterogeneity Regulates Threeâ€Dimensional Morphologies of Breast Adenocarcinoma Cell Invasion (Adv. Healthcare Mater. 6/2013). Advanced Healthcare Materials, 2013, 2, 920-920.	7.6	1
121	Mycobacterial cord factor enhances migration of neutrophilâ€like HLâ€60 cells by prolonging AKT phosphorylation. Microbiology and Immunology, 2017, 61, 523-530.	1.4	1
122	Ultra-thin microchannel-type electrophoresis chip for TIRFM-based single-DNA observation in the femtomole concentration. Current Applied Physics, 2006, 6, e137-e140.	2.4	0