

Matthias P Lutolf

List of Publications by Year in descending order

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Version: 2024-02-01

77
papers

14,651
citations

36203

51
h-index

74018

75
g-index

81
all docs

81
docs citations

81
times ranked

18273
citing authors

#	ARTICLE	IF	CITATIONS
1	Next-generation cancer organoids. Nature Materials, 2022, 21, 143-159.	13.3	163
2	Synthetic dynamic hydrogels promote degradation-independent in vitro organogenesis. Nature Materials, 2022, 21, 479-487.	13.3	102
3	Deterministic scRNA-seq captures variation in intestinal crypt and organoid composition. Nature Methods, 2022, 19, 323-330.	9.0	33
4	Microarrayed human bone marrow organoids for modeling blood stem cell dynamics. APL Bioengineering, 2022, 6, .	3.3	12
5	Capturing Cardiogenesis in Gastruloids. Cell Stem Cell, 2021, 28, 230-240.e6.	5.2	167
6	Engineering organoids. Nature Reviews Materials, 2021, 6, 402-420.	23.3	497
7	Bioengineering in vitro models of embryonic development. Stem Cell Reports, 2021, 16, 1104-1116.	2.3	26
8	Robust Phase Unwrapping via Deep Image Prior for Quantitative Phase Imaging. IEEE Transactions on Image Processing, 2021, 30, 7025-7037.	6.0	30
9	Mechano-modulatory synthetic niches for liver organoid derivation. Nature Communications, 2020, 11, 3416.	5.8	112
10	Homeostatic mini-intestines through scaffold-guided organoid morphogenesis. Nature, 2020, 585, 574-578.	13.7	408
11	Mammary epithelial morphogenesis in 3D combinatorial microenvironments. Scientific Reports, 2020, 10, 21635.	1.6	4
12	A Single Metabolite which Modulates Lipid Metabolism Alters Hematopoietic Stem/Progenitor Cell Behavior and Promotes Lymphoid Reconstitution. Stem Cell Reports, 2020, 15, 566-576.	2.3	10
13	Machine Learning of Hematopoietic Stem Cell Divisions from Paired Daughter Cell Expression Profiles Reveals Effects of Aging on Self-Renewal. Cell Systems, 2020, 11, 640-652.e5.	2.9	12
14	The Effect of Thiol Structure on Allyl Sulfide Photodegradable Hydrogels and their Application as a Degradable Scaffold for Organoid Passaging. Advanced Materials, 2020, 32, e1905366.	11.1	58
15	Low-Defect Thiol-Michael Addition Hydrogels as Matrigel Substitutes for Epithelial Organoid Derivation. Advanced Functional Materials, 2020, 30, 2000761.	7.8	28
16	High-throughput automated organoid culture via stem-cell aggregation in microcavity arrays. Nature Biomedical Engineering, 2020, 4, 863-874.	11.6	231
17	Antiangiogenic immunotherapy suppresses desmoplastic and chemoresistant intestinal tumors in mice. Journal of Clinical Investigation, 2020, 130, 1199-1216.	3.9	35
18	High-throughput stem cell-based phenotypic screening through microniches. Biomaterials Science, 2019, 7, 3471-3479.	2.6	8

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19	Synthetic 3D PEG-Anisogel Tailored with Fibronectin Fragments Induce Aligned Nerve Extension. <i>Biomacromolecules</i> , 2019, 20, 4075-4087.	2.6	38
20	Engineered signaling centers for the spatially controlled patterning of human pluripotent stem cells. <i>Nature Methods</i> , 2019, 16, 640-648.	9.0	120
21	Engineering Stem Cell Self-organization to Build Better Organoids. <i>Cell Stem Cell</i> , 2019, 24, 860-876.	5.2	228
22	The NAD-Booster Nicotinamide Riboside Potently Stimulates Hematopoiesis through Increased Mitochondrial Clearance. <i>Cell Stem Cell</i> , 2019, 24, 405-418.e7.	5.2	143
23	The heparin binding domain of von Willebrand factor binds to growth factors and promotes angiogenesis in wound healing. <i>Blood</i> , 2019, 133, 2559-2569.	0.6	81
24	3D Inkjet Printing of Complex, Cell-Laden Hydrogel Structures. <i>Scientific Reports</i> , 2018, 8, 17099.	1.6	96
25	Artificial niche microarrays for identifying extrinsic cell-fate determinants. <i>Methods in Cell Biology</i> , 2018, 148, 51-69.	0.5	6
26	Progress and potential in organoid research. <i>Nature Reviews Genetics</i> , 2018, 19, 671-687.	7.7	693
27	The hope and the hype of organoid research. <i>Development (Cambridge)</i> , 2017, 144, 938-941.	1.2	303
28	Multiscale microenvironmental perturbation of pluripotent stem cell fate and self-organization. <i>Scientific Reports</i> , 2017, 7, 44711.	1.6	33
29	Synthesis and characterization of well-defined hydrogel matrices and their application to intestinal stem cell and organoid culture. <i>Nature Protocols</i> , 2017, 12, 2263-2274.	5.5	98
30	Single-cell analyses identify bioengineered niches for enhanced maintenance of hematopoietic stem cells. <i>Nature Communications</i> , 2017, 8, 221.	5.8	34
31	Employing Microfluidic Devices to Induce Concentration Gradients. , 2017, , 429-442.		4
32	In Situ Patterning of Microfluidic Networks in 3D Cell-Laden Hydrogels. <i>Advanced Materials</i> , 2016, 28, 7450-7456.	11.1	145
33	NAD ⁺ repletion improves mitochondrial and stem cell function and enhances life span in mice. <i>Science</i> , 2016, 352, 1436-1443.	6.0	907
34	Designer matrices for intestinal stem cell and organoid culture. <i>Nature</i> , 2016, 539, 560-564.	13.7	1,027
35	Neural tube morphogenesis in synthetic 3D microenvironments. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, E6831-E6839.	3.3	186
36	Stem cell niche engineering through droplet microfluidics. <i>Current Opinion in Biotechnology</i> , 2015, 35, 86-93.	3.3	73

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37	A high-capacity cell macroencapsulation system supporting the long-term survival of genetically engineered allogeneic cells. <i>Biomaterials</i> , 2014, 35, 779-791.	5.7	54
38	Bioengineering approaches to guide stem cell-based organogenesis. <i>Development (Cambridge)</i> , 2014, 141, 1794-1804.	1.2	116
39	Drug discovery through stem cell-based organoid models. <i>Advanced Drug Delivery Reviews</i> , 2014, 69-70, 19-28.	6.6	172
40	Microscale patterning of hydrogel stiffness through light-triggered uncaging of thiols. <i>Biomaterials Science</i> , 2014, 2, 1640-1651.	2.6	42
41	A generic strategy for pharmacological caging of growth factors for tissue engineering. <i>Chemical Communications</i> , 2013, 49, 5927.	2.2	8
42	In situ cell manipulation through enzymatic hydrogel photopatterning. <i>Nature Materials</i> , 2013, 12, 1072-1078.	13.3	282
43	A Versatile Approach to Engineering Biomolecule- Presenting Cellular Microenvironments. <i>Advanced Healthcare Materials</i> , 2013, 2, 292-296.	3.9	37
44	Metabolic control of adult neural stem cell activity by Fasn-dependent lipogenesis. <i>Nature</i> , 2013, 493, 226-230.	13.7	448
45	Predicting stem cell fate changes by differential cell cycle progression patterns. <i>Development (Cambridge)</i> , 2013, 140, 459-470.	1.2	128
46	Cell specific ingrowth hydrogels. <i>Biomaterials</i> , 2013, 34, 6797-6803.	5.7	36
47	Live mammalian cell arrays. <i>Nature Methods</i> , 2013, 10, 550-552.	9.0	20
48	Patterning of cell-instructive hydrogels by hydrodynamic flow focusing. <i>Lab on A Chip</i> , 2013, 13, 2099.	3.1	23
49	Heparin-binding domain of fibrin(ogen) binds growth factors and promotes tissue repair when incorporated within a synthetic matrix. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 4563-4568.	3.3	401
50	Hydrogel Microwell Arrays Allow the Assessment of Protease-Associated Enhancement of Cancer Cell Aggregation and Survival. <i>Microarrays (Basel, Switzerland)</i> , 2013, 2, 208-227.	1.4	11
51	Biomimetic hydrogels for controlled biomolecule delivery to augment bone regeneration. <i>Advanced Drug Delivery Reviews</i> , 2012, 64, 1078-1089.	6.6	166
52	High-throughput clonal analysis of neural stem cells in microarrayed artificial niches. <i>Integrative Biology (United Kingdom)</i> , 2012, 4, 391.	0.6	29
53	High-throughput approaches for the analysis of extrinsic regulators of stem cell fate. <i>Current Opinion in Cell Biology</i> , 2012, 24, 236-244.	2.6	54
54	Microdrop Printing of Hydrogel Bioinks into 3D Tissue-Like Geometries. <i>Advanced Materials</i> , 2012, 24, 391-396.	11.1	231

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55	Biomaterials meet microfluidics: building the next generation of artificial niches. <i>Current Opinion in Biotechnology</i> , 2011, 22, 690-697.	3.3	75
56	Artificial niche microarrays for probing single stem cell fate in high throughput. <i>Nature Methods</i> , 2011, 8, 949-955.	9.0	376
57	Extracellular matrix bioengineering and systems biology approaches in liver disease. <i>Systems and Synthetic Biology</i> , 2011, 5, 11-20.	1.0	8
58	Biomimetic PEG hydrogels crosslinked with minimal plasmin-sensitive tri- amino acid peptides. <i>Journal of Biomedical Materials Research - Part A</i> , 2010, 93A, 870-877.	2.1	27
59	The effect of matrix characteristics on fibroblast proliferation in 3D gels. <i>Biomaterials</i> , 2010, 31, 8454-8464.	5.7	271
60	Bioengineered 3D platform to explore cell-ECM interactions and drug resistance of epithelial ovarian cancer cells. <i>Biomaterials</i> , 2010, 31, 8494-8506.	5.7	533
61	Integration column: Artificial ECM: expanding the cell biology toolbox in 3D. <i>Integrative Biology (United Kingdom)</i> , 2009, 1, 235.	0.6	70
62	Spotlight on hydrogels. <i>Nature Materials</i> , 2009, 8, 451-453.	13.3	211
63	Tailoring hydrogel degradation and drug release via neighboring amino acid controlled esterhydrolysis. <i>Soft Matter</i> , 2009, 5, 440-446.	1.2	66
64	Micropatterning of Hydrogels by Soft Embossing. <i>Langmuir</i> , 2009, 25, 8774-8779.	1.6	55
65	Integration column: microwell arrays for mammalian cell culture. <i>Integrative Biology (United Kingdom)</i> , 2009, 1, 235.	0.6	70
66	Perturbation of single hematopoietic stem cell fates in artificial niches. <i>Integrative Biology (United Kingdom)</i> , 2009, 1, 235.	0.6	70
67	Designing materials to direct stem-cell fate. <i>Nature</i> , 2009, 462, 433-441.	13.7	1,276
68	Three-dimensional extracellular matrix-directed cardioprogenitor differentiation: Systematic modulation of a synthetic cell-responsive PEG-hydrogel. <i>Biomaterials</i> , 2008, 29, 2757-2766.	5.7	294
69	Enhancing the Reliability and Throughput of Neurosphere Culture on Hydrogel Microwell Arrays. <i>Stem Cells</i> , 2008, 26, 2586-2594.	1.4	73
70	Synthetic Biomaterials as Cell-Responsive Artificial Extracellular Matrices. <i>Advanced Materials</i> , 2008, 20, 255-278.		0
71	Biomolecular Hydrogels Formed and Degraded via Site-Specific Enzymatic Reactions. <i>Biomacromolecules</i> , 2007, 8, 3000-3007.	2.6	264
72	Enzymatic formation of modular cell-instructive fibrin analogs for tissue engineering. <i>Biomaterials</i> , 2007, 28, 3856-3866.	5.7	203

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73	Bovine Primary Chondrocyte Culture in Synthetic Matrix Metalloproteinase-Sensitive Poly(ethylene) Tj ETQq1 1 0.784314 rgBT /Overlo	4.9	192
74	Repair of bone defects using synthetic mimetics of collagenous extracellular matrices. Nature Biotechnology, 2003, 21, 513-518.	9.4	797
75	Biopolymeric delivery matrices for angiogenic growth factors. Cardiovascular Pathology, 2003, 12, 295-310.	0.7	321
76	Cellâ€demanded release of VEGF from synthetic, biointeractive cellâ€growth matrices for vascularized tissue growth. FASEB Journal, 2003, 17, 2260-2262.	0.2	501
77	Protein delivery from materials formed by self-selective conjugate addition reactions. Journal of Controlled Release, 2001, 76, 11-25.	4.8	328