Matthias P Lutolf

List of Publications by Year
in descending order

77	14,651	36303 51	74163 75
papers	citations	h-index	g-index

81	81	81	18273
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Designing materials to direct stem-cell fate. Nature, 2009, 462, 433-441.	27.8	1,276
2	Designer matrices for intestinal stem cell and organoid culture. Nature, 2016, 539, 560-564.	27.8	1,027
3	NAD ⁺ repletion improves mitochondrial and stem cell function and enhances life span in mice. Science, 2016, 352, 1436-1443.	12.6	907
4	Repair of bone defects using synthetic mimetics of collagenous extracellular matrices. Nature Biotechnology, 2003, 21, 513-518.	17.5	797
5	Progress and potential in organoid research. Nature Reviews Genetics, 2018, 19, 671-687.	16.3	693
6	Bioengineered 3D platform to explore cellâ€“ECM interactions and drug resistance of epithelial ovarian cancer cells. Biomaterials, 2010, 31, 8494-8506.	11.4	533
7	Cellâ€demanded release of VEGF from synthetic, biointeractive cellâ€ingrowth matrices for vascularized tissue growth. FASEB Journal, 2003, 17, 2260-2262.	0.5	501
8	Engineering organoids. Nature Reviews Materials, 2021, 6, 402-420.	48.7	497
9	Metabolic control of adult neural stem cell activity by Fasn-dependent lipogenesis. Nature, 2013, 493, 226-230.	27.8	448
10	Homeostatic mini-intestines through scaffold-guided organoid morphogenesis. Nature, 2020, 585, 574-578.	27.8	408
11	Heparin-binding domain of fibrin(ogen) binds growth factors and promotes tissue repair when incorporated within a synthetic matrix. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 4563-4568.	7.1	401
12	Artificial niche microarrays for probing single stem cell fate in high throughput. Nature Methods, 2011, 8, 949-955.	19.0	376
13	Protein delivery from materials formed by self-selective conjugate addition reactions. Journal of Controlled Release, 2001, 76, 11-25.	9.9	328
14	Biopolymeric delivery matrices for angiogenic growth factors. Cardiovascular Pathology, 2003, 12, 295-310.	1.6	321
15	The hope and the hype of organoid research. Development (Cambridge), 2017, 144, 938-941.	2.5	303
16	Three-dimensional extracellular matrix-directed cardioprogenitor differentiation: Systematic modulation of a synthetic cell-responsive PEG-hydrogel. Biomaterials, 2008, 29, 2757-2766.	11.4	294
17	In situ cell manipulation through enzymatic hydrogel photopatterning. Nature Materials, 2013, 12, 1072-1078.	27.5	282
18	The effect of matrix characteristics on fibroblast proliferation in 3D gels. Biomaterials, 2010, 31, 8454-8464.	11.4	271

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19	Biomolecular Hydrogels Formed and Degraded via Site-Specific Enzymatic Reactions. Biomacromolecules, 2007, 8, 3000-3007.	5.4	264
20	Microdrop Printing of Hydrogel Bioinks into 3D Tissueâ€Like Geometries. Advanced Materials, 2012, 24, 391-396.	21.0	231
21	High-throughput automated organoid culture via stem-cell aggregation in microcavity arrays. Nature Biomedical Engineering, 2020, 4, 863-874.	22.5	231
22	Engineering Stem Cell Self-organization to Build Better Organoids. Cell Stem Cell, 2019, 24, 860-876.	11.1	228
23	Spotlight on hydrogels. Nature Materials, 2009, 8, 451-453.	27.5	211
24	Enzymatic formation of modular cell-instructive fibrin analogs for tissue engineering. Biomaterials, 2007, 28, 3856-3866.	11.4	203
25	Bovine Primary Chondrocyte Culture in Synthetic Matrix Metalloproteinase-Sensitive Poly(ethylene) Tj ETQq1 1 0.784314 rgBT /Overl	4.6	192
26	Neural tube morphogenesis in synthetic 3D microenvironments. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E6831-E6839.	7.1	186
27	Drug discovery through stem cell-based organoid models. Advanced Drug Delivery Reviews, 2014, 69-70, 19-28.	13.7	172
28	Perturbation of single hematopoietic stem cell fates in artificial niches. Integrative Biology (United) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	1.3	170
29	Capturing Cardiogenesis in Gastruloids. Cell Stem Cell, 2021, 28, 230-240.e6.	11.1	167
30	Biomimetic hydrogels for controlled biomolecule delivery to augment bone regeneration. Advanced Drug Delivery Reviews, 2012, 64, 1078-1089.	13.7	166
31	Next-generation cancer organoids. Nature Materials, 2022, 21, 143-159.	27.5	163
32	In Situ Patterning of Microfluidic Networks in 3D Cellâ€Laden Hydrogels. Advanced Materials, 2016, 28, 7450-7456.	21.0	145
33	The NAD-Booster Nicotinamide Riboside Potently Stimulates Hematopoiesis through Increased Mitochondrial Clearance. Cell Stem Cell, 2019, 24, 405-418.e7.	11.1	143
34	Predicting stem cell fate changes by differential cell cycle progression patterns. Development (Cambridge), 2013, 140, 459-470.	2.5	128
35	Integration column: microwell arrays for mammalian cell culture. Integrative Biology (United) Tj ETQq1 1 0.784314 rgBT /Overlock 10 T	1.3	125
36	Engineered signaling centers for the spatially controlled patterning of human pluripotent stem cells. Nature Methods, 2019, 16, 640-648.	19.0	120

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37	Bioengineering approaches to guide stem cell-based organogenesis. Development (Cambridge), 2014, 141, 1794-1804.	2.5	116
38	Mechano-modulatory synthetic niches for liver organoid derivation. Nature Communications, 2020, 11, 3416.	12.8	112
39	Synthetic dynamic hydrogels promote degradation-independent in vitro organogenesis. Nature Materials, 2022, 21, 479-487.	27.5	102
40	Synthesis and characterization of well-defined hydrogel matrices and their application to intestinal stem cell and organoid culture. Nature Protocols, 2017, 12, 2263-2274.	12.0	98
41	3D Inkjet Printing of Complex, Cell-Laden Hydrogel Structures. Scientific Reports, 2018, 8, 17099.	3.3	96
42	The heparin binding domain of von Willebrand factor binds to growth factors and promotes angiogenesis in wound healing. Blood, 2019, 133, 2559-2569.	1.4	81
43	Biomaterials meet microfluidics: building the next generation of artificial niches. Current Opinion in Biotechnology, 2011, 22, 690-697.	6.6	75
44	Enhancing the Reliability and Throughput of Neurosphere Culture on Hydrogel Microwell Arrays. Stem Cells, 2008, 26, 2586-2594.	3.2	73
45	Stem cell niche engineering through droplet microfluidics. Current Opinion in Biotechnology, 2015, 35, 86-93.	6.6	73
46	Integration column: Artificial ECM: expanding the cell biology toolbox in 3D. Integrative Biology (United Kingdom), 2009, 1, 235.	1.3	70
47	Tailoring hydrogel degradation and drug release via neighboring amino acid controlled esterhydrolysis. Soft Matter, 2009, 5, 440-446.	2.7	66
48	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.	21.0	58
49	Micropatterning of Hydrogels by Soft Embossing. Langmuir, 2009, 25, 8774-8779.	3.5	55
50	High-throughput approaches for the analysis of extrinsic regulators of stem cell fate. Current Opinion in Cell Biology, 2012, 24, 236-244.	5.4	54
51	A high-capacity cell macroencapsulation system supporting the long-term survival of genetically engineered allogeneic cells. Biomaterials, 2014, 35, 779-791.	11.4	54
52	Microscale patterning of hydrogel stiffness through light-triggered uncaging of thiols. Biomaterials Science, 2014, 2, 1640-1651.	5.4	42
53	Synthetic 3D PEG-Anisogel Tailored with Fibronectin Fragments Induce Aligned Nerve Extension. Biomacromolecules, 2019, 20, 4075-4087.	5.4	38
54	A Versatile Approach to Engineering Biomoleculeâ€Presenting Cellular Microenvironments. Advanced Healthcare Materials, 2013, 2, 292-296.	7.6	37

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55	Cell specific ingrowth hydrogels. Biomaterials, 2013, 34, 6797-6803.	11.4	36
56	Antiangiogenic immunotherapy suppresses desmoplastic and chemoresistant intestinal tumors in mice. Journal of Clinical Investigation, 2020, 130, 1199-1216.	8.2	35
57	Single-cell analyses identify bioengineered niches for enhanced maintenance of hematopoietic stem cells. Nature Communications, 2017, 8, 221.	12.8	34
58	Multiscale microenvironmental perturbation of pluripotent stem cell fate and self-organization. Scientific Reports, 2017, 7, 44711.	3.3	33
59	Deterministic scRNA-seq captures variation in intestinal crypt and organoid composition. Nature Methods, 2022, 19, 323-330.	19.0	33
60	Robust Phase Unwrapping via Deep Image Prior for Quantitative Phase Imaging. IEEE Transactions on Image Processing, 2021, 30, 7025-7037.	9.8	30
61	High-throughput clonal analysis of neural stem cells in microarrayed artificial niches. Integrative Biology (United Kingdom), 2012, 4, 391.	1.3	29
62	Lowâ€Defect Thiolâ€Michael Addition Hydrogels as Matrigel Substitutes for Epithelial Organoid Derivation. Advanced Functional Materials, 2020, 30, 2000761.	14.9	28
63	Biomimetic PEG hydrogels crosslinked with minimal plasminâ€sensitive triâ€amino acid peptides. Journal of Biomedical Materials Research - Part A, 2010, 93A, 870-877.	4.0	27
64	Bioengineering inÂvitro models of embryonic development. Stem Cell Reports, 2021, 16, 1104-1116.	4.8	26
65	Patterning of cell-instructive hydrogels by hydrodynamic flow focusing. Lab on A Chip, 2013, 13, 2099.	6.0	23
66	Live mammalian cell arrays. Nature Methods, 2013, 10, 550-552.	19.0	20
67	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.	6.2	12
68	Microarrayed human bone marrow organoids for modeling blood stem cell dynamics. APL Bioengineering, 2022, 6, .	6.2	12
69	Hydrogel Microwell Arrays Allow the Assessment of Protease-Associated Enhancement of Cancer Cell Aggregation and Survival. Microarrays (Basel, Switzerland), 2013, 2, 208-227.	1.4	11
70	A Single Metabolite which Modulates Lipid Metabolism Alters Hematopoietic Stem/Progenitor Cell Behavior and Promotes Lymphoid Reconstitution. Stem Cell Reports, 2020, 15, 566-576.	4.8	10
71	Extracellular matrix bioengineering and systems biology approaches in liver disease. Systems and Synthetic Biology, 2011, 5, 11-20.	1.0	8
72	A generic strategy for pharmacological caging of growth factors for tissue engineering. Chemical Communications, 2013, 49, 5927.	4.1	8

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73	High-throughput stem cell-based phenotypic screening through microniches. Biomaterials Science, 2019, 7, 3471-3479.	5.4	8
74	Artificial niche microarrays for identifying extrinsic cell-fate determinants. Methods in Cell Biology, 2018, 148, 51-69.	1.1	6
75	Employing Microfluidic Devices to Induce Concentration Gradients. , 2017, , 429-442.		4
76	Mammary epithelial morphogenesis in 3D combinatorial microenvironments. Scientific Reports, 2020, 10, 21635.	3.3	4
77	Synthetic Biomaterials as Cell-Responsive Artificial Extracellular Matrices. , 2008, , 255-278.		0