

Martin Ehrbar

List of Publications by Year in descending order

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118
papers

6,643
citations

71102

41
h-index

64796

79
g-index

129
all docs

129
docs citations

129
times ranked

9029
citing authors

#	ARTICLE	IF	CITATIONS
1	Cell-Demanded release of VEGF from synthetic, biointeractive cell-growth matrices for vascularized tissue growth. <i>FASEB Journal</i> , 2003, 17, 2260-2262.	0.5	501
2	Cell-Demanded Liberation of VEGF121 From Fibrin Implants Induces Local and Controlled Blood Vessel Growth. <i>Circulation Research</i> , 2004, 94, 1124-1132.	4.5	355
3	Elucidating the Role of Matrix Stiffness in 3D Cell Migration and Remodeling. <i>Biophysical Journal</i> , 2011, 100, 284-293.	0.5	291
4	In situ cell manipulation through enzymatic hydrogel photopatterning. <i>Nature Materials</i> , 2013, 12, 1072-1078.	27.5	282
5	The effect of matrix characteristics on fibroblast proliferation in 3D gels. <i>Biomaterials</i> , 2010, 31, 8454-8464.	11.4	271
6	Biomolecular Hydrogels Formed and Degraded via Site-Specific Enzymatic Reactions. <i>Biomacromolecules</i> , 2007, 8, 3000-3007.	5.4	264
7	Drug-sensing hydrogels for the inducible release of biopharmaceuticals. <i>Nature Materials</i> , 2008, 7, 800-804.	27.5	207
8	Enzymatic formation of modular cell-instructive fibrin analogs for tissue engineering. <i>Biomaterials</i> , 2007, 28, 3856-3866.	11.4	203
9	Recombinant Protein-co-PEG Networks as Cell-Adhesive and Proteolytically Degradable Hydrogel Matrixes. Part II: Biofunctional Characteristics. <i>Biomacromolecules</i> , 2006, 7, 3019-3029.	5.4	176
10	Biomimetic hydrogels for controlled biomolecule delivery to augment bone regeneration. <i>Advanced Drug Delivery Reviews</i> , 2012, 64, 1078-1089.	13.7	166
11	Endothelial cell proliferation and progenitor maturation by fibrin-bound VEGF variants with differential susceptibilities to local cellular activity. <i>Journal of Controlled Release</i> , 2005, 101, 93-109.	9.9	163
12	A red/far-red light-responsive bi-stable toggle switch to control gene expression in mammalian cells. <i>Nucleic Acids Research</i> , 2013, 41, e77-e77.	14.5	161
13	The NAD-Booster Nicotinamide Riboside Potently Stimulates Hematopoiesis through Increased Mitochondrial Clearance. <i>Cell Stem Cell</i> , 2019, 24, 405-418.e7.	11.1	143
14	Long-lasting fibrin matrices ensure stable and functional angiogenesis by highly tunable, sustained delivery of recombinant VEGF ₁₆₄ . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 6952-6957.	7.1	136
15	The role of actively released fibrin-conjugated VEGF for VEGF receptor 2 gene activation and the enhancement of angiogenesis. <i>Biomaterials</i> , 2008, 29, 1720-1729.	11.4	130
16	Hyperphysiological compression of articular cartilage induces an osteoarthritic phenotype in a cartilage-on-a-chip model. <i>Nature Biomedical Engineering</i> , 2019, 3, 545-557.	22.5	126
17	Enzyme responsive GAG-based natural-synthetic hybrid hydrogel for tunable growth factor delivery and stem cell differentiation. <i>Biomaterials</i> , 2016, 87, 104-117.	11.4	121
18	In vivo and in vitro evaluation of flexible, cottonwool-like nanocomposites as bone substitute material for complex defects. <i>Acta Biomaterialia</i> , 2009, 5, 1775-1784.	8.3	115

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19	Bone morphogenetic protein α 2 enhances bone formation when delivered by a synthetic matrix containing hydroxyapatite/tricalciumphosphate. <i>Clinical Oral Implants Research</i> , 2008, 19, 188-195.	4.5	99
20	Advanced modular self-inactivating lentiviral expression vectors for multigene interventions in mammalian cells and in vivo transduction. <i>Nucleic Acids Research</i> , 2002, 30, 113e-113.	14.5	91
21	One-Step Microfluidic Fabrication of Polyelectrolyte Microcapsules in Aqueous Conditions for Protein Release. <i>Angewandte Chemie - International Edition</i> , 2016, 55, 13470-13474.	13.8	90
22	Magnetic nanocomposite hydrogels and static magnetic field stimulate the osteoblastic and vasculogenic profile of adipose-derived cells. <i>Biomaterials</i> , 2019, 223, 119468.	11.4	90
23	Precision Assembly of Complex Cellular Microenvironments using Holographic Optical Tweezers. <i>Scientific Reports</i> , 2015, 5, 8577.	3.3	88
24	pH-controlled recovery of placenta-derived mesenchymal stem cell sheets. <i>Biomaterials</i> , 2011, 32, 4376-4384.	11.4	87
25	Structural decoding of netrin-4 reveals a regulatory function towards mature basement membranes. <i>Nature Communications</i> , 2016, 7, 13515.	12.8	74
26	A Versatile Biosynthetic Hydrogel Platform for Engineering of Tissue Analogues. <i>Advanced Healthcare Materials</i> , 2019, 8, e1900979.	7.6	69
27	Mussel-mimetic tissue adhesive for fetal membrane repair: An ex vivo evaluation. <i>Acta Biomaterialia</i> , 2012, 8, 4365-4370.	8.3	64
28	Engineered fibrin matrices for functional display of cell membrane-bound growth factor-like activities: Study of angiogenic signaling by ephrin-B2. <i>Biomaterials</i> , 2004, 25, 3245-3257.	11.4	58
29	N-Methyl Pyrrolidone as a Potent Bone Morphogenetic Protein Enhancer for Bone Tissue Regeneration. <i>Tissue Engineering - Part A</i> , 2009, 15, 2955-2963.	3.1	55
30	Deformation mechanisms of human amnion: Quantitative studies based on second harmonic generation microscopy. <i>Journal of Biomechanics</i> , 2015, 48, 1606-1613.	2.1	53
31	Spatially confined induction of endochondral ossification by functionalized hydrogels for ectopic engineering of osteochondral tissues. <i>Biomaterials</i> , 2018, 171, 219-229.	11.4	53
32	Mussel-mimetic tissue adhesive for fetal membrane repair: a standardized ex vivo evaluation using elastomeric membranes. <i>Prenatal Diagnosis</i> , 2011, 31, 654-660.	2.3	52
33	Dual Role of Mesenchymal Stem Cells Allows for Microvascularized Bone Tissue-Like Environments in PEG Hydrogels. <i>Advanced Healthcare Materials</i> , 2016, 5, 489-498.	7.6	51
34	PEG/HA Hybrid Hydrogels for Biologically and Mechanically Tailorable Bone Marrow Organoids. <i>Advanced Functional Materials</i> , 2020, 30, 1910282.	14.9	48
35	Engineering 3D cell instructive microenvironments by rational assembly of artificial extracellular matrices and cell patterning. <i>Integrative Biology (United Kingdom)</i> , 2011, 3, 1102.	1.3	47
36	Conditional human VEGF-mediated vascularization in chicken embryos using a novel temperature-inducible gene regulation (TIGR) system. <i>Nucleic Acids Research</i> , 2003, 31, 69e-69.	14.5	46

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37	Mussel mimetic tissue adhesive for fetal membrane repair: initial in vivo investigation in rabbits. <i>European Journal of Obstetrics, Gynecology and Reproductive Biology</i> , 2013, 171, 240-245.	1.1	46
38	Smart Hydrogels for the Augmentation of Bone Regeneration by Endogenous Mesenchymal Progenitor Cell Recruitment. <i>Advanced Science</i> , 2020, 7, 1903395.	11.2	46
39	Enhanced osteoblastic activity and bone regeneration using surface-modified porous bioactive glass scaffolds. <i>Journal of Biomedical Materials Research - Part A</i> , 2010, 94A, 1023-1033.	4.0	45
40	Multiaxial mechanical behavior of human fetal membranes and its relationship to microstructure. <i>Biomechanics and Modeling in Mechanobiology</i> , 2013, 12, 747-762.	2.8	45
41	Second harmonic generation microscopy of fetal membranes under deformation: Normal and altered morphology. <i>Placenta</i> , 2013, 34, 1020-1026.	1.5	45
42	Single cell-laden protease-sensitive microniche for long-term culture in 3D. <i>Lab on A Chip</i> , 2017, 17, 727-737.	6.0	43
43	Notch-inducing hydrogels reveal a perivascular switch of mesenchymal stem cell fate. <i>EMBO Reports</i> , 2018, 19, .	4.5	43
44	Ribosomal Protein L13a as a Reference Gene for Human Bone Marrow-Derived Mesenchymal Stromal Cells During Expansion, Adipo-, Chondro-, and Osteogenesis. <i>Tissue Engineering - Part C: Methods</i> , 2012, 18, 761-771.	2.1	42
45	Inspired by Nature: Hydrogels as Versatile Tools for Vascular Engineering. <i>Advances in Wound Care</i> , 2018, 7, 232-246.	5.1	41
46	Effects of Protein and Gene Transfer of the Angiopoietin-1 Fibrinogen-like Receptor-binding Domain on Endothelial and Vessel Organization. <i>Journal of Biological Chemistry</i> , 2005, 280, 22445-22453.	3.4	40
47	Protein adsorption steers blood contact activation on engineered cobalt chromium alloy oxide layers. <i>Acta Biomaterialia</i> , 2015, 24, 343-351.	8.3	39
48	Heterophilic interactions between cell adhesion molecule L1 and $\alpha 3$ -integrin induce HUVEC process extension in vitro and angiogenesis in vivo. <i>Angiogenesis</i> , 2004, 7, 213-223.	7.2	38
49	Characterization of Epicardial-Derived Cardiac Interstitial Cells: Differentiation and Mobilization of Heart Fibroblast Progenitors. <i>PLoS ONE</i> , 2013, 8, e53694.	2.5	38
50	Decrease in VEGF Expression Induces Intussusceptive Vascular Pruning. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , 2011, 31, 2836-2844.	2.4	37
51	A Versatile Approach to Engineering Biomolecules Presenting Cellular Microenvironments. <i>Advanced Healthcare Materials</i> , 2013, 2, 292-296.	7.6	37
52	Mesenchymal stromal cell activation by breast cancer secretomes in bioengineered 3D microenvironments. <i>Life Science Alliance</i> , 2019, 2, e201900304.	2.8	37
53	Biological and Physicochemical Characterization of a Serum-and Xeno-Free Chemically Defined Cryopreservation Procedure for Adult Human Progenitor Cells. <i>Cell Transplantation</i> , 2011, 20, 1241-1257.	2.5	36
54	Mechanical loading of mouse caudal vertebrae increases trabecular and cortical bone mass-dependence on dose and genotype. <i>Biomechanics and Modeling in Mechanobiology</i> , 2010, 9, 737-747.	2.8	35

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55	A Gene Therapy Technology-Based Biomaterial for the Trigger-Inducible Release of Biopharmaceuticals in Mice. <i>Advanced Functional Materials</i> , 2010, 20, 2534-2538.	14.9	35
56	Locally controlling mesenchymal stem cell morphogenesis by 3D PDGF-BB gradients towards the establishment of an in vitro perivascular niche. <i>Integrative Biology (United Kingdom)</i> , 2015, 7, 101-111.	1.3	35
57	Modular Poly(ethylene glycol) Matrices for the Controlled 3D-Localized Osteogenic Differentiation of Mesenchymal Stem Cells. <i>Advanced Healthcare Materials</i> , 2015, 4, 550-558.	7.6	34
58	Mechanical and Microstructural Investigation of the Cyclic Behavior of Human Amnion. <i>Journal of Biomechanical Engineering</i> , 2015, 137, 061010.	1.3	33
59	One-Step Microfluidic Fabrication of Polyelectrolyte Microcapsules in Aqueous Conditions for Protein Release. <i>Angewandte Chemie</i> , 2016, 128, 13668-13672.	2.0	33
60	Extracellular Matrix Production by Mesenchymal Stromal Cells in Hydrogels Facilitates Cell Spreading and Is Inhibited by FGF-2. <i>Advanced Healthcare Materials</i> , 2020, 9, 1901669.	7.6	31
61	cAMP enhances BMP2-signaling through PKA and MKP1-dependent mechanisms. <i>Biochemical and Biophysical Research Communications</i> , 2009, 381, 247-252.	2.1	30
62	Expanded skeletal stem and progenitor cells promote and participate in induced bone regeneration at subcritical BMP-2 dose. <i>Biomaterials</i> , 2019, 217, 119278.	11.4	29
63	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.	4.0	27
64	Longitudinal in vivo evaluation of bone regeneration by combined measurement of multi-pinhole SPECT and micro-CT for tissue engineering. <i>Scientific Reports</i> , 2015, 5, 10238.	3.3	26
65	Pharmacologically Triggered Hydrogel for Scheduling Hepatitis B Vaccine Administration. <i>Scientific Reports</i> , 2013, 3, 2610.	3.3	25
66	Delivery of BMP-2 by two clinically available apatite materials: <i>In vitro</i> and <i>in vivo</i> comparison. <i>Journal of Biomedical Materials Research - Part A</i> , 2015, 103, 628-638.	4.0	25
67	Effect of oxide layer modification of CoCr stent alloys on blood activation and endothelial behavior. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2015, 103, 629-640.	3.4	23
68	A comparative investigation of mussel-mimetic sealants for fetal membrane repair. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2016, 58, 57-64.	3.1	23
69	Inhibition of Angiogenesis by Antioxidant Micelles. <i>Advanced Healthcare Materials</i> , 2015, 4, 569-575.	7.6	22
70	Rational design and in vitro characterization of novel dental implant and abutment surfaces for balancing clinical and biological needs. <i>Clinical Implant Dentistry and Related Research</i> , 2019, 21, 15-24.	3.7	22
71	Remote-Controlled Hydrogel Depots for Time-Scheduled Vaccination. <i>Advanced Functional Materials</i> , 2013, 23, 5355-5362.	14.9	21
72	A Novel Bioreactor System for the Assessment of Endothelialization on Deformable Surfaces. <i>Scientific Reports</i> , 2016, 6, 38861.	3.3	21

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73	Label-Free Quantification Proteomics for the Identification of Mesenchymal Stromal Cell Matrisome Inside 3D Poly(Ethylene Glycol) Hydrogels. <i>Advanced Healthcare Materials</i> , 2018, 7, e1800534.	7.6	21
74	Elevated Fibronectin Levels in Profibrotic CD14+ Monocytes and CD14+ Macrophages in Systemic Sclerosis. <i>Frontiers in Immunology</i> , 2021, 12, 642891.	4.8	20
75	Enzyme Mediated Site-Specific Surface Modification. <i>Langmuir</i> , 2010, 26, 11127-11134.	3.5	19
76	Cell-Mediated Proteolytic Release of Growth Factors from Poly(Ethylene Glycol) Matrices. <i>Macromolecular Bioscience</i> , 2016, 16, 1703-1713.	4.1	19
77	Minimally Invasive Surgical Device for Precise Application of Bioadhesives to Prevent iPPROM. <i>Fetal Diagnosis and Therapy</i> , 2019, 45, 102-110.	1.4	19
78	Contractions, a risk for premature rupture of fetal membranes: A new protocol with cyclic biaxial tension. <i>Medical Engineering and Physics</i> , 2013, 35, 846-851.	1.7	18
79	On the defect tolerance of fetal membranes. <i>Interface Focus</i> , 2019, 9, 20190010.	3.0	18
80	Proteolytic Processing Regulates Placental Growth Factor Activities. <i>Journal of Biological Chemistry</i> , 2013, 288, 17976-17989.	3.4	16
81	Electrochemical Control of the Enzymatic Polymerization of PEG Hydrogels: Formation of Spatially Controlled Biological Microenvironments. <i>Advanced Healthcare Materials</i> , 2014, 3, 508-514.	7.6	16
82	Density gradients at hydrogel interfaces for enhanced cell penetration. <i>Biomaterials Science</i> , 2015, 3, 586-591.	5.4	16
83	Increased maturation of iPSC-derived neurons in a hydrogel-based 3D culture. <i>Journal of Neuroscience Methods</i> , 2021, 360, 109254.	2.5	16
84	Synthesis and Characterization of PEG-Based Drug-Responsive Biohybrid Hydrogels. <i>Macromolecular Rapid Communications</i> , 2012, 33, 1280-1285.	3.9	14
85	Long-term biostability and bioactivity of α -fibrin linked-VEGF121 in vitro and in vivo. <i>Biomaterials Science</i> , 2014, 2, 581.	5.4	13
86	Soft Hydrogels Featuring In-Depth Surface Density Gradients for the Simple Establishment of 3D Tissue Models for Screening Applications. <i>SLAS Discovery</i> , 2017, 22, 635-644.	2.7	13
87	Reduced thrombogenicity of surface-treated Nitinol implants steered by altered protein adsorption. <i>Acta Biomaterialia</i> , 2022, 137, 331-345.	8.3	13
88	Pharmacologically tunable polyethylene-glycol-based cell growth substrate. <i>Acta Biomaterialia</i> , 2013, 9, 8272-8278.	8.3	12
89	Microarrayed human bone marrow organoids for modeling blood stem cell dynamics. <i>APL Bioengineering</i> , 2022, 6, .	6.2	12
90	Artificial extracellular matrices for bone tissue engineering. <i>Bone</i> , 2008, 42, S72.	2.9	11

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91	Effect of Different rhBMP-2 and TG-VEGF Ratios on the Formation of Heterotopic Bone and Neovessels. <i>BioMed Research International</i> , 2014, 2014, 1-7.	1.9	11
92	Engineered cell instructive matrices for fetal membrane healing. <i>Acta Biomaterialia</i> , 2015, 15, 1-10.	8.3	11
93	Quantitative in vitro comparison of the thrombogenicity of commercial dental implants. <i>Clinical Implant Dentistry and Related Research</i> , 2019, 21, 8-14.	3.7	11
94	Automatic registration of 2D histological sections to 3D microCT volumes: Trabecular bone. <i>Bone</i> , 2017, 105, 173-183.	2.9	9
95	Effects of $\hat{1}\frac{1}{4}$ CT radiation on tissue engineered bone-like constructs. <i>Biomedizinische Technik</i> , 2010, 55, 245-250.	0.8	8
96	A generic strategy for pharmacological caging of growth factors for tissue engineering. <i>Chemical Communications</i> , 2013, 49, 5927.	4.1	8
97	Flowable Polyethylene Glycol Hydrogels Support the in Vitro Survival and Proliferation of Dermal Progenitor Cells in a Mechanically Dependent Manner. <i>ACS Biomaterials Science and Engineering</i> , 2019, 5, 950-958.	5.2	6
98	Pharmacologically Controlled Protein Switch for ON-OFF Regulation of Growth Factor Activity. <i>Scientific Reports</i> , 2013, 3, 2716.	3.3	5
99	Comprehensive quantitative characterization of the human term amnion proteome. <i>Matrix Biology Plus</i> , 2021, 12, 100084.	3.5	5
100	Ultra-hydrophilic stent platforms promote early vascular healing and minimise late tissue response: a potential alternative to second-generation drug-eluting stents. <i>EuroIntervention</i> , 2017, 12, 2148-2156.	3.2	5
101	Biomaterial-based treatments for the prevention of preterm birth after iatrogenic rupture of the fetal membranes. <i>Biomaterials Science</i> , 2022, 10, 3695-3715.	5.4	5
102	Minimally Invasive Precise Application of Bioadhesives to Prevent IPPROM on a Pregnant Sheep Model. <i>Fetal Diagnosis and Therapy</i> , 2021, 48, 785-793.	1.4	4
103	Heterotopic Bone Formation Around Vessels: Pilot Study of a New Animal Model. <i>BioResearch Open Access</i> , 2013, 2, 266-272.	2.6	2
104	Editorial: Nanosized Drug Delivery Systems: Colloids and Gels for Site Specific Targeting. <i>Frontiers in Bioengineering and Biotechnology</i> , 2020, 8, 803.	4.1	2
105	Angiogenesis and Vascularity for Tissue Engineering Applications. , 0, , .		1
106	Cell-Demanded Release of Growth Factors. , 2011, , 463-473.		1
107	Macromol. Rapid Commun. 15/2012. <i>Macromolecular Rapid Communications</i> , 2012, 33, 1320-1320.	3.9	0
108	Catechol-Bearing Polymeric Nanoparticles for Antioxidant Therapy. <i>Materials Research Society Symposia Proceedings</i> , 2015, 1797, 1.	0.1	0

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109	CRT-704 Ultra-Hydrophilic Stents Promote Early Healing and Minimize Late Tissue Response: A Potential Alternative to Second-Generation Drug Eluting Stents. JACC: Cardiovascular Interventions, 2015, 8, S44-S45.	2.9	0
110	Antioxidants: Inhibition of Angiogenesis by Antioxidant Micelles (Adv. Healthcare Mater. 4/2015). Advanced Healthcare Materials, 2015, 4, 480-480.	7.6	0
111	Therapeutic Angiogenesis in Regenerative Medicine. Reference Series in Biomedical Engineering, 2021, , 79-100.	0.1	0
112	Biomimetic materials for injectable tissue engineering: studies of acute, lasting and unexpected angiogenesis response. FASEB Journal, 2006, 20, A20.	0.5	0
113	Biomolecular hybrid hydrogels to promote dermal progenitor transplantation and skin regeneration. Frontiers in Bioengineering and Biotechnology, 0, 4, .	4.1	0
114	Protease sensing PEG hydrogels. Frontiers in Bioengineering and Biotechnology, 0, 4, .	4.1	0
115	The NAD ⁺ Salvage Pathway Potently Stimulates Hematopoiesis through Increased Mitochondrial Clearance and Asymmetric Division. Blood, 2018, 132, 641-641.	1.4	0
116	Therapeutic Angiogenesis in Regenerative Medicine. , 2020, , 1-22.		0
117	Therapeutic Angiogenesis in Regenerative Medicine. , 2020, , 1-22.		0
118	In Vitro and Ectopic In Vivo Studies toward the Utilization of Rapidly Isolated Human Nasal Chondrocytes for Single-Stage Arthroscopic Cartilage Regeneration Therapy. International Journal of Molecular Sciences, 2022, 23, 6900.	4.1	0