Christine E Schmidt

List of Publications by Year
in descending order

139 papers	13,632 citations	31976 53 h-index	22166 113 g-index
144 all docs	144 docs citations	144 times ranked	14294 citing authors

#	Article	IF	Citations
1	Conducting polymers in biomedical engineering. Progress in Polymer Science, 2007, 32, 876-921.	24.7	1,383
2	Neural Tissue Engineering: Strategies for Repair and Regeneration. Annual Review of Biomedical Engineering, 2003, 5, 293-347.	12.3	1,098
3	Photocrosslinked hyaluronic acid hydrogels: Natural, biodegradable tissue engineering scaffolds. Biotechnology and Bioengineering, 2003, 82, 578-589.	3.3	721
4	Acellular vascular tissues: natural biomaterials for tissue repair and tissue engineering. Biomaterials, 2000, 21, 2215-2231.	11.4	682
5	Polypyrrole-coated electrospun PLGA nanofibers for neural tissue applications. Biomaterials, 2009, 30, 4325-4335.	11.4	659
6	The effects of hyaluronic acid hydrogels with tunable mechanical properties on neural progenitor cell differentiation. Biomaterials, 2010, 31, 3930-3940.	11.4	427
7	Characterization of protein release from photocrosslinkable hyaluronic acid-polyethylene glycol hydrogel tissue engineering scaffolds. Biomaterials, 2005, 26, 125-135.	11.4	393
8	Biomaterials functionalization using a novel peptide that selectively binds to a conducting polymer. Nature Materials, 2005, 4, 496-502.	27.5	387
9	Synthesis and characterization of polypyrrole-hyaluronic acid composite biomaterials for tissue engineering applications. , 2000, 50, 574-584.		336
10	Optimized Acellular Nerve Graft Is Immunologically Tolerated and Supports Regeneration. Tissue Engineering, 2004, 10, 1641-1651.	4.6	325
11	Nerve growth factor-immobilized polypyrrole: Bioactive electrically conducting polymer for enhanced neurite extension. Journal of Biomedical Materials Research - Part A, 2007, 81A, 135-149.	4.0	263
12	Engineering an Improved Acellular Nerve Graft via Optimized Chemical Processing. Tissue Engineering, 2004, 10, 1346-1358.	4.6	253
13	Concentration-dependent Effect of Sodium Hypochlorite on Stem Cells of Apical Papilla Survival and Differentiation. Journal of Endodontics, 2014, 40, 51-55.	3.1	248
14	Biomimetic conducting polymer-based tissue scaffolds. Current Opinion in Biotechnology, 2013, 24, 847-854.	6.6	230
15	A Highly Selective Low-Background Fluorescent Imaging Agent for Nitric Oxide. Journal of the American Chemical Society, 2010, 132, 13114-13116.	13.7	222
16	Carboxylic Acid-Functionalized Conductive Polypyrrole as a Bioactive Platform for Cell Adhesion. Biomacromolecules, 2006, 7, 1692-1695.	5.4	216
17	Micropatterned Polypyrrole: A Combination of Electrical and Topographical Characteristics for the Stimulation of Cells. Advanced Functional Materials, 2007, 17, 1645-1653.	14.9	185
18	Biocompatibility implications of polypyrrole synthesis techniques. Biomedical Materials (Bristol), 2008, 3, 034124.	3.3	180

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19	Photopatterned collagenâ€“hyaluronic acid interpenetrating polymer network hydrogels. Acta Biomaterialia, 2009, 5, 2385-2397.	8.3	177
20	High molecular weight hyaluronic acid limits astrocyte activation and scar formation after spinal cord injury. Journal of Neural Engineering, 2011, 8, 046033.	3.5	174
21	Cell-Laden Hydrogel Constructs of Hyaluronic Acid, Collagen, and Laminin for Neural Tissue Engineering. Tissue Engineering - Part A, 2010, 16, 1703-1716.	3.1	173
22	Immobilized nerve growth factor and microtopography have distinct effects on polarization versus axon elongation in hippocampal cells in culture. Biomaterials, 2007, 28, 271-284.	11.4	170
23	Nanostructured scaffolds for neural applications. Nanomedicine, 2008, 3, 183-199.	3.3	140
24	Conductive interpenetrating networks of polypyrrole and polycaprolactone encourage electrophysiological development of cardiac cells. Acta Biomaterialia, 2015, 28, 109-120.	8.3	130
25	Advances in natural biomaterials for nerve tissue repair. Neuroscience Letters, 2012, 519, 103-114.	2.1	127
26	ENGINEERING STRATEGIES FOR PERIPHERAL NERVE REPAIR. Orthopedic Clinics of North America, 2000, 31, 485-497.	1.2	118
27	Variation of cadmium sulfide nanoparticle size and photoluminescence intensity with altered aqueous synthesis conditions. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2005, 254, 147-157.	4.7	118
28	Engineering Strategies For Peripheral Nerve Repair. Clinics in Plastic Surgery, 1999, 26, 617-628.	1.5	117
29	Highâ€Resolution Patterning of Hydrogels in Three Dimensions using Directâ€Write Photofabrication for Cell Guidance. Advanced Functional Materials, 2009, 19, 3543-3551.	14.9	112
30	Solid freeform fabrication of designer scaffolds of hyaluronic acid for nerve tissue engineering. Biomedical Microdevices, 2011, 13, 983-993.	2.8	112
31	Carboxy-Endcapped Conductive Polypyrrole:Â Biomimetic Conducting Polymer for Cell Scaffolds and Electrodes. Langmuir, 2006, 22, 9816-9819.	3.5	111
32	The fundamental role of subcellular topography in peripheral nerve repair therapies. Biomaterials, 2012, 33, 4264-4276.	11.4	109
33	Tunable methacrylated hyaluronic acidâ€based hydrogels as scaffolds for soft tissue engineering applications. Journal of Biomedical Materials Research - Part A, 2020, 108, 279-291.	4.0	97
34	Neuroactive conducting scaffolds: nerve growth factor conjugation on active ester-functionalized polypyrrole. Journal of the Royal Society Interface, 2009, 6, 801-810.	3.4	95
35	Fibronectinâ€“hyaluronic acid composite hydrogels for three-dimensional endothelial cell culture. Acta Biomaterialia, 2011, 7, 2401-2409.	8.3	94
36	Polarization of hippocampal neurons with competitive surface stimuli: contact guidance cues are preferred over chemical ligands. Journal of the Royal Society Interface, 2007, 4, 223-233.	3.4	90

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37	Novel Degradable Co-polymers of Polypyrrole Support Cell Proliferation and Enhance Neurite Out-Growth with Electrical Stimulation. Journal of Biomaterials Science, Polymer Edition, 2010, 21, 1265-1282.	3.5	89
38	Electrical Stimuli in the Central Nervous System Microenvironment. Annual Review of Biomedical Engineering, 2014, 16, 397-430.	12.3	86
39	Toward a Biocompatible and Biodegradable Copolymer Incorporating Electroactive Oligothiophene Units. Macromolecules, 2009, 42, 502-511.	4.8	81
40	Effects of collagen 1, fibronectin, laminin and hyaluronic acid concentration in multi-component gels on neurite extension. Journal of Biomaterials Science, Polymer Edition, 2007, 18, 983-997.	3.5	79
41	Decellularized peripheral nerve supports Schwann cell transplants and axon growth following spinal cord injury. Biomaterials, 2018, 177, 176-185.	11.4	78
42	Advanced biomaterials for repairing the nervous system: what can hydrogels do for the brain?. Materials Today, 2014, 17, 332-340.	14.2	77
43	Recent advances in nanotherapeutic strategies for spinal cord injury repair. Advanced Drug Delivery Reviews, 2019, 148, 38-59.	13.7	74
44	A chemically polymerized electrically conducting composite of polypyrrole nanoparticles and polyurethane for tissue engineering. Journal of Biomedical Materials Research - Part A, 2011, 98A, 509-516.	4.0	72
45	Photopatterned anisotropic swelling of dual-crosslinked hyaluronic acid hydrogels. Acta Biomaterialia, 2009, 5, 14-22.	8.3	68
46	Biodegradable electroactive polymers for electrochemically-triggered drug delivery. Journal of Materials Chemistry B, 2014, 2, 6809-6822.	5.8	68
47	Fabrication of three-dimensional scaffolds for heterogeneous tissue engineering. Biomedical Microdevices, 2010, 12, 721-725.	2.8	67
48	Schwann cell response on polypyrrole substrates upon electrical stimulation. Acta Biomaterialia, 2014, 10, 2423-2433.	8.3	62
49	Biodegradable hydrogels composed of oxime crosslinked poly(ethylene glycol), hyaluronic acid and collagen: a tunable platform for soft tissue engineering. Journal of Biomaterials Science, Polymer Edition, 2015, 26, 143-161.	3.5	61
50	Decellularized tissues as platforms for in vitro modeling of healthy and diseased tissues. Acta Biomaterialia, 2020, 111, 1-19.	8.3	60
51	Challenges in quantum dot-neuron active interfacing. Talanta, 2005, 67, 462-471.	5.5	59
52	Biomimetic hydrogels direct spinal progenitor cell differentiation and promote functional recovery after spinal cord injury. Journal of Neural Engineering, 2018, 15, 025004.	3.5	58
53	Hippocampal neurons respond uniquely to topographies of various sizes and shapes. Biofabrication, 2010, 2, 035005.	7.1	57
54	Multiphoton Lithography of Unconstrained Threeâ€Dimensional Protein Microstructures. Advanced Functional Materials, 2013, 23, 333-339.	14.9	55

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55	Electric field stimulation through a biodegradable polypyrroleâ€<i>co</i>â€polycaprolactone substrate enhances neural cell growth. Journal of Biomedical Materials Research - Part A, 2014, 102, 2554-2564.	4.0	54
56	Tissueâ€Engineered Peripheral Nerve Interfaces. Advanced Functional Materials, 2018, 28, 1701713.	14.9	53
57	Electroactive Tissue Scaffolds with Aligned Pores as Instructive Platforms for Biomimetic Tissue Engineering. Bioengineering, 2015, 2, 15-34.	3.5	51
58	Electrical Stimulation of Human Mesenchymal Stem Cells on Conductive Nanofibers Enhances their Differentiation toward Osteogenic Outcomes. Macromolecular Rapid Communications, 2015, 36, 1884-1890.	3.9	50
59	Advances in exÂvivo models and lab-on-a-chip devices for neural tissue engineering. Biomaterials, 2019, 198, 146-166.	11.4	49
60	Injectable hydrogels of optimized acellular nerve for injection in the injured spinal cord. Biomedical Materials (Bristol), 2018, 13, 034110.	3.3	48
61	Instructive Conductive 3D Silk Foamâ€Based Bone Tissue Scaffolds Enable Electrical Stimulation of Stem Cells for Enhanced Osteogenic Differentiation. Macromolecular Bioscience, 2015, 15, 1490-1496.	4.1	46
62	Drugâ€binding hydrogels of hyaluronic acid functionalized with Î²â€cyclodextrin. Journal of Biomedical Materials Research - Part A, 2008, 87A, 1044-1052.	4.0	45
63	Recent advances in strategies for peripheral nerve tissue engineering. Current Opinion in Biomedical Engineering, 2017, 4, 134-142.	3.4	45
64	Vascular graft endothelialization: Comparative analysis of canine and human endothelial cell migration on natural biomaterials. Journal of Biomedical Materials Research Part B, 2001, 56, 545-555.	3.1	43
65	Electric field stimulation through a substrate influences Schwann cell and extracellular matrix structure. Journal of Neural Engineering, 2013, 10, 046011.	3.5	43
66	Pyrroleâ€“hyaluronic acid conjugates for decreasing cell binding to metals and conducting polymers. Acta Biomaterialia, 2010, 6, 4396-4404.	8.3	42
67	Functional characterization of optimized acellular peripheral nerve graft in a rat sciatic nerve injury model. Neurological Research, 2011, 33, 600-608.	1.3	39
68	Surface modification of the conducting polymer, polypyrrole, via affinity peptide. Journal of Biomedical Materials Research - Part A, 2013, 101A, 1464-1471.	4.0	39
69	Electrical stimulation of human mesenchymal stem cells on biomineralized conducting polymers enhances their differentiation towards osteogenic outcomes. Journal of Materials Chemistry B, 2015, 3, 8059-8064.	5.8	38
70	Development of an apoptosis-assisted decellularization method for maximal preservation of nerve tissue structure. Acta Biomaterialia, 2018, 77, 116-126.	8.3	38
71	A combined molecular dynamics and experimental study of doped polypyrrole. Polymer, 2010, 51, 4985-4993.	3.8	36
72	Selective axonal growth of embryonic hippocampal neurons according to topographic features of various sizes and shapes. International Journal of Nanomedicine, 2010, 6, 45.	6.7	36

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73	Neuronal growth promoting sesquiterpeneâ€"neolignans; syntheses and biological studies. Organic and Biomolecular Chemistry, 2012, 10, 383-393.	2.8	36
74	Creation of an injectable in situ gelling native extracellular matrix for nucleus pulposus tissue engineering. Spine Journal, 2017, 17, 435-444.	1.3	36
75	Sacrificial Crystal Templated Hyaluronic Acid Hydrogels As Biomimetic 3D Tissue Scaffolds for Nerve Tissue Regeneration. ACS Biomaterials Science and Engineering, 2017, 3, 1451-1459.	5.2	36
76	Benchâ€toâ€Bedside Lessons Learned: Commercialization of an Acellular Nerve Graft. Advanced Healthcare Materials, 2020, 9, e2000174.	7.6	36
77	Novel Sodium Deoxycholate-Based Chemical Decellularization Method for Peripheral Nerve. Tissue Engineering - Part C: Methods, 2020, 26, 23-36.	2.1	34
78	Polysaccharide-based films for the prevention of unwanted postoperative adhesions at biological interfaces. Acta Biomaterialia, 2020, 106, 92-101.	8.3	34
79	Enhanced polarization of embryonic hippocampal neurons on micron scale electrospun fibers. Journal of Biomedical Materials Research - Part A, 2010, 92A, 1398-1406.	4.0	32
80	Magnetic particle templating of hydrogels: engineering naturally derived hydrogel scaffolds with 3D aligned microarchitecture for nerve repair. Journal of Neural Engineering, 2020, 17, 016057.	3.5	32
81	Simple benchtop patterning of hydrogel grids for living cell microarrays. Lab on A Chip, 2010, 10, 379-383.	6.0	31
82	Peptide-directed assembly of functional supramolecular polymers for biomedical applications: electroactive molecular tongue-twisters (oligoalanineâ€"oligoanilineâ€"oligoalanine) for electrochemically enhanced drug delivery. Journal of Materials Chemistry B, 2015, 3, 5005-5009.	5.8	31
83	Amineâ€functionalized polypyrrole: Inherently cell adhesive conducting polymer. Journal of Biomedical Materials Research - Part A, 2015, 103, 2126-2132.	4.0	31
84	Towards the translation of electroconductive organic materials for regeneration of neural tissues. Acta Biomaterialia, 2022, 139, 22-42.	8.3	31
85	Crystal templating dendritic pore networks and fibrillar microstructure into hydrogels. Acta Biomaterialia, 2010, 6, 2415-2421.	8.3	30
86	The Open Source GAITOR Suite for Rodent Gait Analysis. Scientific Reports, 2018, 8, 9797.	3.3	30
87	Assessing Forelimb Function after Unilateral Cervical Spinal Cord Injury: Novel Forelimb Tasks Predict Lesion Severity and Recovery. Journal of Neurotrauma, 2012, 29, 488-498.	3.4	29
88	Gelsolin overexpression enhances neurite outgrowth in PC12 cells. FEBS Letters, 2001, 508, 282-286.	2.8	28
89	Three-Dimensional Bioprinted Hyaluronic Acid Hydrogel Test Beds for Assessing Neural Cell Responses to Competitive Growth Stimuli. ACS Biomaterials Science and Engineering, 2020, 6, 6819-6830.	5.2	28
90	Into the groove: instructive silk-polypyrrole films with topographical guidance cues direct DRG neurite outgrowth. Journal of Biomaterials Science, Polymer Edition, 2015, 26, 1327-1342.	3.5	27

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91	Localized and sustained release of brain-derived neurotrophic factor from injectable hydrogel/microparticle composites fosters spinal learning after spinal cord injury. Journal of Materials Chemistry B, 2016, 4, 7560-7571.	5.8	27
92	3D Printing with Nucleic Acid Adhesives. ACS Biomaterials Science and Engineering, 2015, 1, 19-26.	5.2	23
93	Neuron-targeted electrical modulation. Science, 2020, 367, 1303-1304.	12.6	23
94	Preservation of capillary-beds in rat lung tissue using optimized chemical decellularization. Journal of Materials Chemistry B, 2013, 1, 4801.	5.8	22
95	Progress toward finding the perfect match: hydrogels for treatment of central nervous system injury. Materials Today Advances, 2020, 6, 100039.	5.2	22
96	Preparation and evaluation of microfluidic magnetic alginate microparticles for magnetically templated hydrogels. Journal of Colloid and Interface Science, 2020, 561, 647-658.	9.4	20
97	Development of a magnetically aligned regenerative tissue-engineered electronic nerve interface for peripheral nerve applications. Biomaterials, 2021, 279, 121212.	11.4	20
98	Hippocampal and cortical neuronal growth mediated by the small molecule natural product clovanemagnolol. Bioorganic and Medicinal Chemistry Letters, 2011, 21, 4808-4812.	2.2	19
99	Surface modification of neural electrodes with a pyrrole-hyaluronic acid conjugate to attenuate reactive astrogliosis in vivo. RSC Advances, 2015, 5, 39228-39231.	3.6	19
100	Functionalizing micro-3D-printed protein hydrogels for cell adhesion and patterning. Journal of Materials Chemistry B, 2016, 4, 1818-1826.	5.8	18
101	Wirelessly triggered bioactive molecule delivery from degradable electroactive polymer films. Polymer International, 2021, 70, 467-474.	3.1	17
102	Quantum dots for electrical stimulation of neural cells. , 2005, , .		16
103	Multiphoton microfabrication of conducting polymer-based biomaterials. Journal of Materials Chemistry B, 2015, 3, 5001-5004.	5.8	16
104	Oligonucleotide-functionalized hydrogels for sustained release of small molecule (aptamer) therapeutics. Acta Biomaterialia, 2020, 102, 315-325.	8.3	16
105	Engineering an Improved Acellular Nerve Graft via Optimized Chemical Processing. Tissue Engineering, 2004, 10, 1346-1358.	4.6	15
106	Rodent Models and Behavioral Outcomes of Cervical Spinal Cord Injury. Journal of Spine, 2013, Suppl 4, .	0.2	14
107	Lymphaticâ€toâ€blood vessel transition in adult microvascular networks: A discovery made possible by a topâ€down approach to biomimetic model development. Microcirculation, 2020, 27, e12595.	1.8	13
108	Microtopographical patterns promote different responses in fibroblasts and Schwann cells: A possible feature for neural implants. Journal of Biomedical Materials Research - Part A, 2021, 109, 64-76.	4.0	13

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109	Development of novel apoptosis-assisted lung tissue decellularization methods. Biomaterials Science, 2021, 9, 3485-3498.	5.4	13
110	Unique electrochemically synthesized polypyrrole:poly(lactic-co-glycolic acid) blends for biomedical applications. Journal of Materials Chemistry, 2010, 20, 8865.	6.7	12
111	Conducting polymer-based multilayer films for instructive biomaterial coatings. Future Science OA, 2015, 1, FSO79.	1.9	12
112	Affinity immobilization of a genetically engineered bifunctional hybrid protein. Enzyme and Microbial Technology, 1990, 12, 337-342.	3.2	11
113	Aptamer Antagonists of Myelin-Derived Inhibitors Promote Axon Growth. PLoS ONE, 2010, 5, e9726.	2.5	11
114	Optimization of Molecularly Imprinted Polymers of Serotonin for Biomaterial Applications. Journal of Biomaterials Science, Polymer Edition, 2011, 22, 343-362.	3.5	11
115	Processing-size correlations in the preparation of magnetic alginate microspheres through emulsification and ionic crosslinking. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2017, 529, 119-127.	4.7	11
116	Sacrificial crystal templating of hyaluronic acid-based hydrogels. European Polymer Journal, 2017, 87, 487-496.	5.4	11
117	Integration of flexible polyimide arrays into soft extracellular matrix-based hydrogel materials for a tissue-engineered electronic nerve interface (TEENI). Journal of Neuroscience Methods, 2020, 341, 108762.	2.5	11
118	Computational Model Provides Insight into the Distinct Responses of Neurons to Chemical and Topographical Cues. Annals of Biomedical Engineering, 2009, 37, 363-374.	2.5	10
119	Mechanical properties of Î±â€tricalcium phosphateâ€based bone cements incorporating regenerative biomaterials for filling bone defects exposed to low mechanical loads. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2016, 104, 149-157.	3.4	10
120	Decellularized peripheral nerve as an injectable delivery vehicle for neural applications. Journal of Biomedical Materials Research - Part A, 2022, 110, 595-611.	4.0	10
121	Nano-opto-mechanical characterization of neuron membrane mechanics under cellular growth and differentiation. Biomedical Microdevices, 2008, 10, 611-622.	2.8	9
122	Ultrasound-guided photoacoustic imaging-directed re-endothelialization of acellular vasculature leads to improved vascular performance. Acta Biomaterialia, 2016, 32, 35-45.	8.3	9
123	Microphysiological system for studying contractile differences in young, active, and old, sedentary adult derived skeletal muscle cells. Aging Cell, 2022, 21, .	6.7	9
124	Surface modification of polypyrrole via affinity peptide: quantification and mechanism. Journal of Materials Chemistry B, 2013, 1, 1060.	5.8	7
125	Assessing Forelimb Function after Unilateral Cervical SCI using Novel Tasks: Limb Step-alternation, Postural Instability and Pasta Handling. Journal of Visualized Experiments, 2013, , e50955.	0.3	6
126	Supracolloidal Assemblies as Sacrificial Templates for Porous Silk-Based Biomaterials. International Journal of Molecular Sciences, 2015, 16, 20511-20522.	4.1	6

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127	Extracellular Matrix Disparities in an Nkx2-5 Mutant Mouse Model of Congenital Heart Disease. Frontiers in Cardiovascular Medicine, 2020, 7, 93.	2.4	6
128	Effects of Varied Stimulation Parameters on Adipose-Derived Stem Cell Response to Low-Level Electrical Fields. Annals of Biomedical Engineering, 2021, 49, 3401-3411.	2.5	6
129	Chondroitinase ABC/galectin-3 fusion proteins with hyaluronan-based hydrogels stabilize enzyme and provide targeted enzyme activity for neural applications. Journal of Neural Engineering, 2021, 18, 046090.	3.5	4
130	Genetic Modification ofÎ±Gal Expression in Xenogeneic Endothelial Cells Yields a Complex Immunological Response. Tissue Engineering, 2001, 7, 743-756.	4.6	3
131	Design of a Novel Electrically Conducting Biocompatible Polymer with Degradable Linkages for Biomedical Applications. Materials Research Society Symposia Proceedings, 2006, 950, 1.	0.1	2
132	Assembly of sodium soap fibers and fibrillar particles triggered by dissolution of sodium chloride crystals. Soft Matter, 2010, 6, 3289.	2.7	2
133	Sensing Nerve Activity with Scalable and Robust Nerve Interfaces. , 2019, , .		2
134	Optimization of Quantum Dot â€" Nerve Cell Interfaces. Materials Research Society Symposia Proceedings, 2003, 789, 318.	0.1	1
135	Fibrillar films obtained from sodium soap fibers and polyelectrolyte multilayers. Journal of Biomedical Materials Research - Part A, 2011, 98A, 287-295.	4.0	1
136	Neural Interfaces: Tissueâ€Engineered Peripheral Nerve Interfaces (Adv. Funct. Mater. 12/2018). Advanced Functional Materials, 2018, 28, 1870076.	14.9	1
137	The 2015 Young Innovators of Cellular and Molecular Bioengineering. Cellular and Molecular Bioengineering, 2015, 8, 305-306.	2.1	0
138	Macromol. Rapid Commun. 21/2015. Macromolecular Rapid Communications, 2015, 36, 1936-1936.	3.9	0
139	Stromal Vascular Fraction Vasculogenesis, Vessel Incorporation, and Integration with Intact Angiogenic Microvascular Networks in an Ex Vivo Cultured Tissue Model. FASEB Journal, 2019, 33, 517.5.	0.5	0