Gordana Vunjak-Novakovic

List of Publications by Citations

389 papers	35,288 citations	110 h-index	180 g-index
435 ext. papers	38,997 ext. citations	8.3 avg, IF	7.32 L-index

#	Paper	IF	Citations
389	Stem cell-based tissue engineering with silk biomaterials. *Biomaterials*, **2006**, 27, 6064-82	15.6	785
388	Biodegradable polymer scaffolds for tissue engineering. *Nature Biotechnology*, **1994**, 12, 689-93	44.5	770
387	Functional assembly of engineered myocardium by electrical stimulation of cardiac myocytes cultured on scaffolds. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 18129-34	11.5	732
386	The inflammatory responses to silk films in vitro and in vivo. *Biomaterials*, **2005**, 26, 147-55	15.6	636
385	Advanced maturation of human cardiac tissue grown from pluripotent stem cells. *Nature*, **2018**, 556, 239-243	50.4	601
384	Bioreactor cultivation conditions modulate the composition and mechanical properties of tissue-engineered cartilage. *Journal of Orthopaedic Research*, **1999**, 17, 130-8	3.8	599
383	Hyaluronic acid hydrogel for controlled self-renewal and differentiation of human embryonic stem cells. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 11298-303	11.5	556
382	The role of macrophage phenotype in vascularization of tissue engineering scaffolds. *Biomaterials*, **2014**, 35, 4477-88	15.6	532
381	Cell differentiation by mechanical stress. *FASEB Journal*, **2002**, 16, 270-2	0.9	506
380	Engineering complex tissues. *Tissue Engineering*, **2006**, 12, 3307-39		459
379	Tissue engineering by self-assembly and bio-printing of living cells. *Biofabrication*, **2010**, 2, 022001	10.5	434
378	Bone tissue engineering using human mesenchymal stem cells: effects of scaffold material and medium flow. *Annals of Biomedical Engineering*, **2004**, 32, 112-22	4.7	421
377	Dynamic cell seeding of polymer scaffolds for cartilage tissue engineering. *Biotechnology Progress*, **1998**, 14, 193-202	2.8	420
376	Cardiac tissue engineering: cell seeding, cultivation parameters, and tissue construct characterization. *Biotechnology and Bioengineering*, **1999**, 64, 580-9	4.9	418
375	Sequential delivery of immunomodulatory cytokines to facilitate the M1-to-M2 transition of macrophages and enhance vascularization of bone scaffolds. *Biomaterials*, **2015**, 37, 194-207	15.6	416
374	Efficient generation of lung and airway epithelial cells from human pluripotent stem cells. *Nature Biotechnology*, **2014**, 32, 84-91	44.5	392
373	Electrical stimulation systems for cardiac tissue engineering. *Nature Protocols*, **2009**, 4, 155-73	18.8	386

372	Chondrogenesis in a cell-polymer-bioreactor system. *Experimental Cell Research*, **1998**, 240, 58-65	4.2	383
371	Challenges in cardiac tissue engineering. *Tissue Engineering - Part B: Reviews*, **2010**, 16, 169-87	7.9	372
370	Silk implants for the healing of critical size bone defects. *Bone*, **2005**, 37, 688-98	4.7	371
369	Engineered microenvironments for controlled stem cell differentiation. *Tissue Engineering - Part A*, **2009**, 15, 205-19	3.9	370
368	Growth factor gradients via microsphere delivery in biopolymer scaffolds for osteochondral tissue engineering. *Journal of Controlled Release*, **2009**, 134, 81-90	11.7	351
367	Organs-on-a-Chip: A Fast Track for Engineered Human Tissues in Drug Development. *Cell Stem Cell*, **2018**, 22, 310-324	18	337
366	Tissue engineering of cartilage in space. *Proceedings of the National Academy of Sciences of the United States of America*, **1997**, 94, 13885-90	11.5	336
365	Engineering anatomically shaped human bone grafts. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 3299-304	11.5	324
364	Oxygen gradients correlate with cell density and cell viability in engineered cardiac tissue. *Biotechnology and Bioengineering*, **2006**, 93, 332-43	4.9	310
363	Tissue engineering by self-assembly of cells printed into topologically defined structures. *Tissue Engineering - Part A*, **2008**, 14, 413-21	3.9	295
362	Silk fibroin as an organic polymer for controlled drug delivery. *Journal of Controlled Release*, **2006**, 111, 219-27	11.7	293
361	Engineering bone-like tissue in vitro using human bone marrow stem cells and silk scaffolds. *Journal of Biomedical Materials Research Part B*, **2004**, 71, 25-34		277
360	Tissue engineering of ligaments. *Annual Review of Biomedical Engineering*, **2004**, 6, 131-56	12	276
359	Perfusion improves tissue architecture of engineered cardiac muscle. *Tissue Engineering*, **2002**, 8, 175-88		274
358	Control of in vitro tissue-engineered bone-like structures using human mesenchymal stem cells and porous silk scaffolds. *Biomaterials*, **2007**, 28, 1152-62	15.6	270
357	Tissue-engineered composites for the repair of large osteochondral defects. *Arthritis and Rheumatism*, **2002**, 46, 2524-34		265
356	Engineering cartilage-like tissue using human mesenchymal stem cells and silk protein scaffolds. *Biotechnology and Bioengineering*, **2004**, 88, 379-91	4.9	262
355	Biomimetic approach to cardiac tissue engineering: oxygen carriers and channeled scaffolds. *Tissue Engineering*, **2006**, 12, 2077-91		261

354	Medium perfusion enables engineering of compact and contractile cardiac tissue. *American Journal of Physiology - Heart and Circulatory Physiology*, **2004**, 286, H507-16	5.2	260
353	Influence of macroporous protein scaffolds on bone tissue engineering from bone marrow stem cells. *Biomaterials*, **2005**, 26, 4442-52	15.6	260
352	Electrically conductive chitosan/carbon scaffolds for cardiac tissue engineering. *Biomacromolecules*, **2014**, 15, 635-43	6.9	248
351	Bioactive hydrogel scaffolds for controllable vascular differentiation of human embryonic stem cells. *Biomaterials*, **2007**, 28, 2706-17	15.6	248
350	A Platform for Generation of Chamber-Specific Cardiac Tissues and Disease Modeling. *Cell*, **2019**, 176, 913-927.e18	56.2	239
349	High-density seeding of myocyte cells for cardiac tissue engineering. *Biotechnology and Bioengineering*, **2003**, 82, 403-14	4.9	237
348	Tissue engineered bone grafts: biological requirements, tissue culture and clinical relevance. *Current Stem Cell Research and Therapy*, **2008**, 3, 254-64	3.6	234
347	Tissue engineering and developmental biology: going biomimetic. *Tissue Engineering*, **2006**, 12, 3265-83		233
346	Silk fibroin microtubes for blood vessel engineering. *Biomaterials*, **2007**, 28, 5271-9	15.6	226
345	Advanced tools for tissue engineering: scaffolds, bioreactors, and signaling. *Tissue Engineering*, **2006**, 12, 3285-305		223
344	Cardiac tissue engineering using perfusion bioreactor systems. *Nature Protocols*, **2008**, 3, 719-38	18.8	222
343	Composite scaffold provides a cell delivery platform for cardiovascular repair. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 7974-9	11.5	218
342	Mammalian chondrocytes expanded in the presence of fibroblast growth factor 2 maintain the ability to differentiate and regenerate three-dimensional cartilaginous tissue. *Experimental Cell Research*, **1999**, 253, 681-8	4.2	218
341	Nucleation and growth of mineralized bone matrix on silk-hydroxyapatite composite scaffolds. *Biomaterials*, **2011**, 32, 2812-20	15.6	211
340	Culture of organized cell communities. *Advanced Drug Delivery Reviews*, **1998**, 33, 15-30	18.5	204
339	Vascular progenitor cells isolated from human embryonic stem cells give rise to endothelial and smooth muscle like cells and form vascular networks in vivo. *Circulation Research*, **2007**, 101, 286-94	15.7	204
338	Electrical stimulation of human embryonic stem cells: cardiac differentiation and the generation of reactive oxygen species. *Experimental Cell Research*, **2009**, 315, 3611-9	4.2	203
337	Mathematical model of oxygen distribution in engineered cardiac tissue with parallel channel array perfused with culture medium containing oxygen carriers. *American Journal of Physiology - Heart and Circulatory Physiology*, **2005**, 288, H1278-89	5.2	199

336	Mechanical stimulation promotes osteogenic differentiation of human bone marrow stromal cells on 3-D partially demineralized bone scaffolds in vitro. *Calcified Tissue International*, **2004**, 74, 458-68	3.9	198
335	Integration of engineered cartilage. *Journal of Orthopaedic Research*, **2001**, 19, 1089-97	3.8	196
334	The effect of actin disrupting agents on contact guidance of human embryonic stem cells. *Biomaterials*, **2007**, 28, 4068-77	15.6	190
333	Silk based biomaterials to heal critical sized femur defects. *Bone*, **2006**, 39, 922-31	4.7	190
332	Bioreactors mediate the effectiveness of tissue engineering scaffolds. *FASEB Journal*, **2002**, 16, 1691-4	0.9	189
331	Micro-bioreactor array for controlling cellular microenvironments. *Lab on A Chip*, **2007**, 7, 710-9	7.2	187
330	Effects of initial seeding density and fluid perfusion rate on formation of tissue-engineered bone. *Tissue Engineering - Part A*, **2008**, 14, 1809-20	3.9	186
329	Porous silk fibroin 3-D scaffolds for delivery of bone morphogenetic protein-2 in vitro and in vivo. *Journal of Biomedical Materials Research - Part A*, **2006**, 78, 324-34	5.4	185
328	Development of silk-based scaffolds for tissue engineering of bone from human adipose-derived stem cells. *Acta Biomaterialia*, **2012**, 8, 2483-92	10.8	184
327	Gas exchange is essential for bioreactor cultivation of tissue engineered cartilage. *Biotechnology and Bioengineering*, **1999**, 63, 197-205	4.9	184
326	Silk microfiber-reinforced silk hydrogel composites for functional cartilage tissue repair. *Acta Biomaterialia*, **2015**, 11, 27-36	10.8	176
325	Adipose tissue engineering for soft tissue regeneration. *Tissue Engineering - Part B: Reviews*, **2010**, 16, 413-26	7.9	176
324	Hypoxia and stem cell-based engineering of mesenchymal tissues. *Biotechnology Progress*, **2009**, 25, 32-42	2.8	175
323	Engineering bone tissue substitutes from human induced pluripotent stem cells. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 8680-5	11.5	174
322	Collagen in tissue-engineered cartilage: types, structure, and crosslinks. *Journal of Cellular Biochemistry*, **1998**, 71, 313-27	4.7	174
321	Advanced bioreactor with controlled application of multi-dimensional strain for tissue engineering. *Journal of Biomechanical Engineering*, **2002**, 124, 742-9	2.1	170
320	Differential effects of growth factors on tissue-engineered cartilage. *Tissue Engineering*, **2002**, 8, 73-84		170
319	Macrophages modulate the viability and growth of human mesenchymal stem cells. *Journal of Cellular Biochemistry*, **2013**, 114, 220-9	4.7	168

318	Decellularization of human and porcine lung tissues for pulmonary tissue engineering. *Annals of Thoracic Surgery*, **2013**, 96, 1046-55; discussion 1055-6	2.7	164
317	Micropatterned mammalian cells exhibit phenotype-specific left-right asymmetry. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 12295-300	11.5	160
316	Microfluidic patterning for fabrication of contractile cardiac organoids. *Biomedical Microdevices*, **2007**, 9, 149-57	3.7	159
315	Cartilage-like tissue engineering using silk scaffolds and mesenchymal stem cells. *Tissue Engineering*, **2006**, 12, 2729-38		159
314	Cardiac recovery via extended cell-free delivery of extracellular vesicles secreted by cardiomyocytes derived from induced pluripotent stem cells. *Nature Biomedical Engineering*, **2018**, 2, 293-303	19	157
313	Bone and cartilage tissue constructs grown using human bone marrow stromal cells, silk scaffolds and rotating bioreactors. *Biomaterials*, **2006**, 27, 6138-49	15.6	157
312	Osteogenesis by human mesenchymal stem cells cultured on silk biomaterials: comparison of adenovirus mediated gene transfer and protein delivery of BMP-2. *Biomaterials*, **2006**, 27, 4993-5002	15.6	157
311	Microgravity tissue engineering. *In Vitro Cellular and Developmental Biology - Animal*, **1997**, 33, 381-5	2.6	154
310	Bioengineering heart muscle: a paradigm for regenerative medicine. *Annual Review of Biomedical Engineering*, **2011**, 13, 245-67	12	150
309	Silk hydrogel for cartilage tissue engineering. *Journal of Biomedical Materials Research - Part B Applied Biomaterials*, **2010**, 95, 84-90	3.5	143
308	Pre-treatment of synthetic elastomeric scaffolds by cardiac fibroblasts improves engineered heart tissue. *Journal of Biomedical Materials Research - Part A*, **2008**, 86, 713-24	5.4	139
307	Bone grafts engineered from human adipose-derived stem cells in perfusion bioreactor culture. *Tissue Engineering - Part A*, **2010**, 16, 179-89	3.9	138
306	Effects of mixing intensity on tissue-engineered cartilage. *Biotechnology and Bioengineering*, **2001**, 72, 402-7	4.9	137
305	Hybrid gel composed of native heart matrix and collagen induces cardiac differentiation of human embryonic stem cells without supplemental growth factors. *Journal of Cardiovascular Translational Research*, **2011**, 4, 605-15	3.3	136
304	Bioreactors for plant engineering: an outlook for further research. *Biochemical Engineering Journal*, **2000**, 4, 89-99	4.2	132
303	Tissue-engineered autologous grafts for facial bone reconstruction. *Science Translational Medicine*, **2016**, 8, 343ra83	17.5	131
302	Growth factors for sequential cellular de- and re-differentiation in tissue engineering. *Biochemical and Biophysical Research Communications*, **2002**, 294, 149-54	3.4	130
301	Large, stratified, and mechanically functional human cartilage grown in vitro by mesenchymal condensation. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 6940-5	11.5	129

300	Method for quantitative analysis of glycosaminoglycan distribution in cultured natural and engineered cartilage. *Annals of Biomedical Engineering*, **1999**, 27, 656-62	4.7	128
299	Engineering bone tissue from human embryonic stem cells. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 8705-9	11.5	127
298	Tubular silk scaffolds for small diameter vascular grafts. *Organogenesis*, **2010**, 6, 217-24	1.7	125
297	Selective differentiation of mammalian bone marrow stromal cells cultured on three-dimensional polymer foams. *Journal of Biomedical Materials Research Part B*, **2001**, 55, 229-35		125
296	Percutaneous cell delivery into the heart using hydrogels polymerizing in situ. *Cell Transplantation*, **2009**, 18, 297-304	4	121
295	Air-Lift Bioreactors for Algal Growth on Flue Gas:Mathematical Modeling and Pilot-Plant Studies. *Industrial & Engineering Chemistry Research*, **2005**, 44, 6154-6163	3.9	121
294	Effects of oxygen on engineered cardiac muscle. *Biotechnology and Bioengineering*, **2002**, 78, 617-25	4.9	120
293	In vitro differentiation of chick embryo bone marrow stromal cells into cartilaginous and bone-like tissues. *Journal of Orthopaedic Research*, **1998**, 16, 181-9	3.8	119
292	Engineering custom-designed osteochondral tissue grafts. *Trends in Biotechnology*, **2008**, 26, 181-9	15.1	118
291	Frontiers in Tissue Engineering. *Clinical Orthopaedics and Related Research*, **1999**, 367, S46-S58	2.2	118
290	The Cellular and Physiological Basis for Lung Repair and Regeneration: Past, Present, and Future. *Cell Stem Cell*, **2020**, 26, 482-502	18	117
289	Effect of scaffold design on bone morphology in vitro. *Tissue Engineering*, **2006**, 12, 3417-29		117
288	Biomimetic platforms for human stem cell research. *Cell Stem Cell*, **2011**, 8, 252-61	18	115
287	Potential pathophysiological mechanisms in osteonecrosis of the jaw. *Annals of the New York Academy of Sciences*, **2011**, 1218, 62-79	6.5	115
286	Biomimetic approach to tissue engineering. *Seminars in Cell and Developmental Biology*, **2009**, 20, 665-73	7.5	114
285	Synovium-derived stem cell-based chondrogenesis. *Differentiation*, **2008**, 76, 1044-56	3.5	114
284	Optimizing the medium perfusion rate in bone tissue engineering bioreactors. *Biotechnology and Bioengineering*, **2011**, 108, 1159-70	4.9	113
283	Gel spinning of silk tubes for tissue engineering. *Biomaterials*, **2008**, 29, 4650-7	15.6	113

282	Mechanical properties and remodeling of hybrid cardiac constructs made from heart cells, fibrin, and biodegradable, elastomeric knitted fabric. *Tissue Engineering*, **2005**, 11, 1122-32		111
281	Nanofabrication and microfabrication of functional materials for tissue engineering. *Tissue Engineering*, **2007**, 13, 1867-77		110
280	Distilling complexity to advance cardiac tissue engineering. *Science Translational Medicine*, **2016**, 8, 342ps13	17.3	108
279	Human bone perivascular niche-on-a-chip for studying metastatic colonization. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, 1256-1261	11.5	107
278	A novel composite scaffold for cardiac tissue engineering. *In Vitro Cellular and Developmental Biology - Animal*, **2005**, 41, 188-96	2.6	106
277	IGF-I and mechanical environment interact to modulate engineered cartilage development. *Biochemical and Biophysical Research Communications*, **2001**, 286, 909-15	3.4	106
276	Optimization of electrical stimulation parameters for cardiac tissue engineering. *Journal of Tissue Engineering and Regenerative Medicine*, **2011**, 5, e115-25	4.4	105
275	Should we use cells, biomaterials, or tissue engineering for cartilage regeneration?. *Stem Cell Research and Therapy*, **2016**, 7, 56	8.3	105
274	Autonomous beating rate adaptation in human stem cell-derived cardiomyocytes. *Nature Communications*, **2016**, 7, 10312	17.4	104
273	Physiologic force-frequency response in engineered heart muscle by electromechanical stimulation. *Biomaterials*, **2015**, 60, 82-91	15.6	103
272	A photolithographic method to create cellular micropatterns. *Biomaterials*, **2006**, 27, 4755-64	15.6	103
271	Osteogenic differentiation of human bone marrow stromal cells on partially demineralized bone scaffolds in vitro. *Tissue Engineering*, **2004**, 10, 81-92		103
270	Tissue engineering: biomedical applications. *Tissue Engineering*, **1995**, 1, 151-61		103
269	Biomimetic perfusion and electrical stimulation applied in concert improved the assembly of engineered cardiac tissue. *Journal of Tissue Engineering and Regenerative Medicine*, **2012**, 6, e12-23	4.4	101
268	Ingrowth of human mesenchymal stem cells into porous silk particle reinforced silk composite scaffolds: An in vitro study. *Acta Biomaterialia*, **2011**, 7, 144-51	10.8	100
267	Porous silk scaffolds can be used for tissue engineering annulus fibrosus. *European Spine Journal*, **2007**, 16, 1848-57	2.7	100
266	Differential gene expression in human, murine, and cell line-derived macrophages upon polarization. *Experimental Cell Research*, **2016**, 347, 1-13	4.2	94
265	Micro-bioreactor arrays for controlling cellular environments: design principles for human embryonic stem cell applications. *Methods*, **2009**, 47, 81-9	4.6	92

264	Can We Engineer a Human Cardiac Patch for Therapy?. *Circulation Research*, **2018**, 123, 244-265	15.7	90
263	In vitro model of vascularized bone: synergizing vascular development and osteogenesis. *PLoS ONE*, **2011**, 6, e28352	3.7	90
262	Spatial regulation of human mesenchymal stem cell differentiation in engineered osteochondral constructs: effects of pre-differentiation, soluble factors and medium perfusion. *Osteoarthritis and Cartilage*, **2010**, 18, 714-23	6.2	88
261	Effects of electrical stimulation in C2C12 muscle constructs. *Journal of Tissue Engineering and Regenerative Medicine*, **2008**, 2, 279-87	4.4	88
260	The regulation of growth and metabolism of kidney stem cells with regional specificity using extracellular matrix derived from kidney. *Biomaterials*, **2013**, 34, 9830-41	15.6	87
259	Bone morphogenetic proteins-2, -12, and -13 modulate in vitro development of engineered cartilage. *Tissue Engineering*, **2002**, 8, 591-601		86
258	Controlled release of cytokines using silk-biomaterials for macrophage polarization. *Biomaterials*, **2015**, 73, 272-83	15.6	82
257	Micropatterned three-dimensional hydrogel system to study human endothelial-mesenchymal stem cell interactions. *Journal of Tissue Engineering and Regenerative Medicine*, **2010**, 4, 205-15	4.4	82
256	Cultivation in rotating bioreactors promotes maintenance of cardiac myocyte electrophysiology and molecular properties. *Tissue Engineering*, **2003**, 9, 1243-53		82
255	Surface-patterned electrode bioreactor for electrical stimulation. *Lab on A Chip*, **2010**, 10, 692-700	7.2	81
254	Biodegradable fibrous scaffolds with tunable properties formed from photo-cross-linkable poly(glycerol sebacate). *ACS Applied Materials & Interfaces*, **2009**, 1, 1878-86	9.5	81
253	Bone scaffold architecture modulates the development of mineralized bone matrix by human embryonic stem cells. *Biomaterials*, **2012**, 33, 8329-42	15.6	79
252	Microfluidic device generating stable concentration gradients for long term cell culture: application to Wnt3a regulation of □catenin signaling. *Lab on A Chip*, **2010**, 10, 3277-83	7.2	77
251	Gene transfer of a human insulin-like growth factor I cDNA enhances tissue engineering of cartilage. *Human Gene Therapy*, **2002**, 13, 1621-30	4.8	74
250	TISSUE ENGINEERING BIOREACTORS **2000**, 143-156		73
249	Time-dependent processes in stem cell-based tissue engineering of articular cartilage. *Stem Cell Reviews and Reports*, **2012**, 8, 863-81	6.4	72
248	Assembly of complex cell microenvironments using geometrically docked hydrogel shapes. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 4551-6	11.5	72
247	Electrical stimulation enhances cell migration and integrative repair in the meniscus. *Scientific Reports*, **2014**, 4, 3674	4.9	70

246	The effect of controlled expression of VEGF by transduced myoblasts in a cardiac patch on vascularization in a mouse model of myocardial infarction. *Biomaterials*, **2013**, 34, 393-401	15.6	65
245	Immune modulation as a therapeutic strategy in bone regeneration. *Journal of Experimental Orthopaedics*, **2015**, 2, 1	2.3	64
244	Tissue-engineered models of human tumors for cancer research. *Expert Opinion on Drug Discovery*, **2015**, 10, 257-68	6.2	63
243	Growth factor induced fibroblast differentiation from human bone marrow stromal cells in vitro. *Journal of Orthopaedic Research*, **2005**, 23, 164-74	3.8	63
242	Adjacent tissues (cartilage, bone) affect the functional integration of engineered calf cartilage in vitro. *Osteoarthritis and Cartilage*, **2005**, 13, 129-38	6.2	63
241	Geometric control of human stem cell morphology and differentiation. *Integrative Biology (United Kingdom)*, **2010**, 2, 346-53	3.7	62
240	Concise review: personalized human bone grafts for reconstructing head and face. *Stem Cells Translational Medicine*, **2012**, 1, 64-9	6.9	61
239	Engineering of functional cartilage tissue using stem cells from synovial lining: a preliminary study. *Clinical Orthopaedics and Related Research*, **2008**, 466, 1880-9	2.2	61
238	HeLiVa platform: integrated heart-liver-vascular systems for drug testing in human health and disease. *Stem Cell Research and Therapy*, **2013**, 4 Suppl 1, S8	8.3	60
237	Tissue Engineering and Regenerative Medicine 2015: A Year in Review. *Tissue Engineering - Part B: Reviews*, **2016**, 22, 101-13	7.9	59
236	Stem cell delivery in tissue-specific hydrogel enabled meniscal repair in an orthotopic rat model. *Biomaterials*, **2017**, 132, 59-71	15.6	57
235	Engineering of human cardiac muscle electromechanically matured to an adult-like phenotype. *Nature Protocols*, **2019**, 14, 2781-2817	18.8	57
234	Enhancing annulus fibrosus tissue formation in porous silk scaffolds. *Journal of Biomedical Materials Research - Part A*, **2010**, 92, 43-51	5.4	57
233	Bioengineered human tumor within a bone niche. *Biomaterials*, **2014**, 35, 5785-94	15.6	56
232	Translation from research to applications. *Tissue Engineering*, **2006**, 12, 3341-64		56
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230	Perfusion seeding of channeled elastomeric scaffolds with myocytes and endothelial cells for cardiac tissue engineering. *Biotechnology Progress*, **2010**, 26, 565-72	2.8	55
229	Size-based microfluidic enrichment of neonatal rat cardiac cell populations. *Biomedical Microdevices* , **2006**, 8, 231-7	3.7	54

228	Scaffold stiffness affects the contractile function of three-dimensional engineered cardiac constructs. *Biotechnology Progress*, **2010**, 26, 1382-90	2.8	53
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225	Geometry and force control of cell function. *Journal of Cellular Biochemistry*, **2009**, 108, 1047-58	4.7	51
224	Effects of chondrogenic and osteogenic regulatory factors on composite constructs grown using human mesenchymal stem cells, silk scaffolds and bioreactors. *Journal of the Royal Society Interface* , **2008**, 5, 929-39	4.1	51
223	Recapitulating the Size and Cargo of Tumor Exosomes in a Tissue-Engineered Model. *Theranostics*, **2016**, 6, 1119-30	12.1	50
222	Macrophages modulate engineered human tissues for enhanced vascularization and healing. *Annals of Biomedical Engineering*, **2015**, 43, 616-27	4.7	49
221	Functional vascularized lung grafts for lung bioengineering. *Science Advances*, **2017**, 3, e1700521	14.3	48
220	Optical mapping of impulse propagation in engineered cardiac tissue. *Tissue Engineering - Part A*, **2009**, 15, 851-60	3.9	47
219	Biomimetic Approaches for Bone Tissue Engineering. *Tissue Engineering - Part B: Reviews*, **2017**, 23, 480-493	7.9	46
218	The current status of iPS cells in cardiac research and their potential for tissue engineering and regenerative medicine. *Stem Cell Reviews and Reports*, **2014**, 10, 177-90	6.4	46
217	Bioengineering methods for myocardial regeneration. *Advanced Drug Delivery Reviews*, **2016**, 96, 195-202	18.5	45
216	In vitro mesenchymal trilineage differentiation and extracellular matrix production by adipose and bone marrow derived adult equine multipotent stromal cells on a collagen scaffold. *Stem Cell Reviews and Reports*, **2013**, 9, 858-72	6.4	45
215	Engineering cartilage and bone using human mesenchymal stem cells. *Journal of Orthopaedic Science*, **2007**, 12, 398-404	1.6	45
214	Heterogeneous engineered cartilage growth results from gradients of media-supplemented active TGF-β and is ameliorated by the alternative supplementation of latent TGF-β *Biomaterials*, **2016**, 77, 173-185	15.6	44
213	Tissue-engineered hypertrophic chondrocyte grafts enhanced long bone repair. *Biomaterials*, **2017**, 139, 202-212	15.6	43
212	Microfluidic bioreactor for dynamic regulation of early mesodermal commitment in human pluripotent stem cells. *Lab on A Chip*, **2013**, 13, 355-64	7.2	43
211	Bioreactor engineering of stem cell environments. *Biotechnology Advances*, **2013**, 31, 1020-31	17.8	43

210	Adipose tissue as a stem cell source for musculoskeletal regeneration. *Frontiers in Bioscience - Scholar*, **2011**, 3, 69-81	2.4	43
209	Non-invasive time-lapsed monitoring and quantification of engineered bone-like tissue. *Annals of Biomedical Engineering*, **2007**, 35, 1657-67	4.7	43
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205	Channelled scaffolds for engineering myocardium with mechanical stimulation. *Journal of Tissue Engineering and Regenerative Medicine*, **2012**, 6, 748-56	4.4	38
204	Bioactive scaffolds for engineering vascularized cardiac tissues. *Macromolecular Bioscience*, **2010**, 10, 1286-301	5.5	37
203	Vascular endothelial growth factor secretion by nonmyocytes modulates Connexin-43 levels in cardiac organoids. *Tissue Engineering - Part A*, **2012**, 18, 1771-83	3.9	35
202	Alternative direct stem cell derivatives defined by stem cell location and graded Wnt signalling. *Nature Cell Biology*, **2017**, 19, 433-444	23.4	34
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200	Insulin, ascorbate, and glucose have a much greater influence than transferrin and selenous acid on the in vitro growth of engineered cartilage in chondrogenic media. *Tissue Engineering - Part A*, **2013**, 19, 1941-8	3.9	34
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198	Practical aspects of cardiac tissue engineering with electrical stimulation. *Methods in Molecular Medicine*, **2007**, 140, 291-307		34
197	Spaceflight bioreactor studies of cells and tissues. *Advances in Space Biology and Medicine*, **2002**, 8, 177-95		34
196	The effect of devitalized trabecular bone on the formation of osteochondral tissue-engineered constructs. *Biomaterials*, **2008**, 29, 4292-9	15.6	33
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