Peter W Zandstra

List of Publications by Year
in descending order

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132 papers	14,909 citations	22099 59 h-index	19136 118 g-index
146 all docs	146 docs citations	146 times ranked	19963 citing authors

#	Article	IF	Citations
1	Growth Factors, Matrices, and Forces Combine and Control Stem Cells. Science, 2009, 324, 1673-1677.	6.0	2,351
2	A 17-gene stemness score for rapid determination of risk in acute leukaemia. Nature, 2016, 540, 433-437.	13.7	617
3	TAZ controls Smad nucleocytoplasmic shuttling and regulates human embryonic stem-cell self-renewal. Nature Cell Biology, 2008, 10, 837-848.	4.6	576
4	Pyrimidoindole derivatives are agonists of human hematopoietic stem cell self-renewal. Science, 2014, 345, 1509-1512.	6.0	470
5	Control of Human Embryonic Stem Cell Colony and Aggregate Size Heterogeneity Influences Differentiation Trajectories. Stem Cells, 2008, 26, 2300-2310.	1.4	419
6	Reproducible, Ultra High-Throughput Formation of Multicellular Organization from Single Cell Suspension-Derived Human Embryonic Stem Cell Aggregates. PLoS ONE, 2008, 3, e1565.	1.1	367
7	Niche-mediated control of human embryonic stem cell self-renewal and differentiation. EMBO Journal, 2007, 26, 4744-4755.	3.5	365
8	A Mass Spectrometric-Derived Cell Surface Protein Atlas. PLoS ONE, 2015, 10, e0121314.	1.1	356
9	A Microfabricated Platform to Measure and Manipulate the Mechanics of Engineered Cardiac Microtissues. Tissue Engineering - Part A, 2012, 18, 910-919.	1.6	355
10	An Alternative Splicing Switch Regulates Embryonic Stem Cell Pluripotency and Reprogramming. Cell, 2011, 147, 132-146.	13.5	325
11	Efficiency of embryoid body formation and hematopoietic development from embryonic stem cells in different culture systems. Biotechnology and Bioengineering, 2002, 78, 442-453.	1.7	321
12	The Systematic Production of Cells for Cell Therapies. Cell Stem Cell, 2008, 3, 369-381.	5.2	286
13	Controlled, Scalable Embryonic Stem Cell Differentiation Culture. Stem Cells, 2004, 22, 275-282.	1.4	272
14	Scalable Production of Embryonic Stem Cell-Derived Cardiomyocytes. Tissue Engineering, 2003, 9, 767-778.	4.9	271
15	A Myc enhancer cluster regulates normal and leukaemic haematopoietic stem cell hierarchies. Nature, 2018, 553, 515-520.	13.7	256
16	Design and formulation of functional pluripotent stem cell-derived cardiac microtissues. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E4698-707.	3.3	252
17	Rapid Expansion of Human Hematopoietic Stem Cells by Automated Control of Inhibitory Feedback Signaling. Cell Stem Cell, 2012, 10, 218-229.	5.2	224
18	Shear-Controlled Single-Step Mouse Embryonic Stem Cell Expansion and Embryoid Body-Based Differentiation. Stem Cells, 2005, 23, 1333-1342.	1.4	217

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19	miR-126 Regulates Distinct Self-Renewal Outcomes in Normal and Malignant Hematopoietic Stem Cells. Cancer Cell, 2016, 29, 214-228.	7.7	216
20	Quality cell therapy manufacturing by design. Nature Biotechnology, 2016, 34, 393-400.	9.4	214
21	Generation of human embryonic stem cellâ€derived mesoderm and cardiac cells using sizeâ€specified aggregates in an oxygenâ€controlled bioreactor. Biotechnology and Bioengineering, 2009, 102, 493-507.	1.7	211
22	Human Embryonic Stem Cell-Derived Cardiomyocytes Regenerate the Infarcted Pig Heart but Induce Ventricular Tachyarrhythmias. Stem Cell Reports, 2019, 12, 967-981.	2.3	207
23	Functional immobilization of signaling proteins enables control of stem cell fate. Nature Methods, 2008, 5, 645-650.	9.0	190
24	Genome-wide characterization of the routes to pluripotency. Nature, 2014, 516, 198-206.	13.7	187
25	High-throughput combinatorial cell co-culture using microfluidics. Integrative Biology (United) Tj ETQq1 1 0.784314 rgBT /Overlock 10 T	0.6	183
26	High-throughput generation of hydrogel microbeads with varying elasticity for cell encapsulation. Biomaterials, 2011, 32, 1477-1483.	5.7	183
27	Convenience versus Biological Significance: Are PMA-Differentiated THP-1 Cells a Reliable Substitute for Blood-Derived Macrophages When Studying in Vitro Polarization?. Frontiers in Pharmacology, 2018, 9, 71.	1.6	180
28	Signaling Networks among Stem Cell Precursors, Transit-Amplifying Progenitors, and their Niche in Developing Hair Follicles. Cell Reports, 2016, 14, 3001-3018.	2.9	160
29	Enabling stem cell therapies through synthetic stem cellâ€“niche engineering. Journal of Clinical Investigation, 2010, 120, 60-70.	3.9	157
30	Incorporation of biomaterials in multicellular aggregates modulates pluripotent stem cell differentiation. Biomaterials, 2011, 32, 48-56.	5.7	154
31	Development of a perfusion fed bioreactor for embryonic stem cell-derived cardiomyocyte generation: Oxygen-mediated enhancement of cardiomyocyte output. Biotechnology and Bioengineering, 2005, 90, 452-461.	1.7	146
32	Hematopoietic stem cell transplantation using single UM171-expanded cord blood: a single-arm, phase 1â€“2 safety and feasibility study. Lancet Haematology,the, 2020, 7, e134-e145.	2.2	138
33	A stepwise model of Reaction-Diffusion and Positional-Information governs self-organized human peri-gastrulation-like patterning. Development (Cambridge), 2017, 144, 4298-4312.	1.2	124
34	Dynamic interaction networks in a hierarchically organized tissue. Molecular Systems Biology, 2010, 6, 417.	3.2	122
35	Stem Cell Bioengineering. Annual Review of Biomedical Engineering, 2001, 3, 275-305.	5.7	121
36	PERT: A Method for Expression Deconvolution of Human Blood Samples from Varied Microenvironmental and Developmental Conditions. PLoS Computational Biology, 2012, 8, e1002838.	1.5	111

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37	Cellâ€"cell interaction networks regulate blood stem and progenitor cell fate. Molecular Systems Biology, 2009, 5, 293.	3.2	105
38	Multivariate proteomic analysis of murine embryonic stem cell self-renewal versus differentiation signaling. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 2900-2905.	3.3	103
39	LIF signaling in stem cells and development. Development (Cambridge), 2015, 142, 2230-2236.	1.2	103
40	Expansion of Hematopoietic Progenitor Cell Populations in Stirred Suspension Bioreactors of Normal Human Bone Marrow Cells. Nature Biotechnology, 1994, 12, 909-914.	9.4	102
41	Progenitor T-cell differentiation from hematopoietic stem cells using Delta-like-4 and VCAM-1. Nature Methods, 2017, 14, 531-538.	9.0	102
42	A ligand-receptor signaling threshold model of stem cell differentiation control: a biologically conserved mechanism applicable to hematopoiesis. Blood, 2000, 96, 1215-1222.	0.6	99
43	Prediction and Testing of Novel Transcriptional Networks Regulating Embryonic Stem Cell Self-Renewal and Commitment. Cell Stem Cell, 2007, 1, 71-86.	5.2	98
44	Derivation, expansion and differentiation of induced pluripotent stem cells in continuous suspension cultures. Nature Methods, 2012, 9, 509-516.	9.0	98
45	Engineering a humanized bone organ model in mice to study bone metastases. Nature Protocols, 2017, 12, 639-663.	5.5	91
46	Ligand/Receptor Signaling Threshold (LIST) Model Accounts for gp130-Mediated Embryonic Stem Cell Self-Renewal Responses to LIF and HIL-6. Stem Cells, 2002, 20, 119-138.	1.4	85
47	Interrogating functional integration between injected pluripotent stem cell-derived cells and surrogate cardiac tissue. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 3329-3334.	3.3	83
48	Geometric Control of Cardiomyogenic Induction in Human Pluripotent Stem Cells. Tissue Engineering - Part A, 2011, 17, 1901-1909.	1.6	79
49	CD24 tracks divergent pluripotent states in mouse and human cells. Nature Communications, 2015, 6, 7329.	5.8	76
50	Stem cell bioengineering: building from stem cell biology. Nature Reviews Genetics, 2018, 19, 595-614.	7.7	76
51	Cell competition during reprogramming gives rise to dominant clones. Science, 2019, 364, .	6.0	76
52	Sustained In Vitro Expansion of Bone Progenitors Is Cell Density Dependent. Stem Cells, 2004, 22, 39-50.	1.4	75
53	Seeding Bioreactor-Produced Embryonic Stem Cell-Derived Cardiomyocytes on Different Porous, Degradable, Polyurethane Scaffolds Reveals the Effect of Scaffold Architecture on Cell Morphology. Tissue Engineering - Part A, 2008, 14, 369-378.	1.6	69
54	The microwell-mesh: A novel device and protocol for the high throughput manufacturing of cartilage microtissues. Biomaterials, 2015, 62, 1-12.	5.7	69

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55	A 96-well culture platform enables longitudinal analyses of engineered human skeletal muscle microtissue strength. Scientific Reports, 2020, 10, 6918.	1.6	68
56	The use of vascular endothelial growth factor functionalized agarose to guide pluripotent stem cell aggregates toward blood progenitor cells. Biomaterials, 2010, 31, 8262-8270.	5.7	65
57	LIFâ€mediated control of embryonic stem cell selfâ€renewal emerges due to an autoregulatory loop. FASEB Journal, 2007, 21, 2020-2032.	0.2	63
58	Predictive microfluidic control of regulatory ligand trajectories in individual pluripotent cells. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 3264-3269.	3.3	63
59	Manipulation of Signaling Thresholds in â€œEngineered Stem Cell Nichesâ€ Identifies Design Criteria for Pluripotent Stem Cell Screens. PLoS ONE, 2009, 4, e6438.	1.1	63
60	Dynamic changes in cellular and microenvironmental composition can be controlled to elicit in vitro human hematopoietic stem cell expansion. Experimental Hematology, 2005, 33, 1229-1239.	0.2	59
61	High-throughput fingerprinting of human pluripotent stem cell fate responses and lineage bias. Nature Methods, 2013, 10, 1225-1231.	9.0	59
62	Spatial Organization of Embryonic Stem Cell Responsiveness to Autocrine Gp130 Ligands Reveals an Autoregulatory Stem Cell Niche. Stem Cells, 2006, 24, 2538-2548.	1.4	58
63	Intercellular network structure and regulatory motifs in the human hematopoietic system. Molecular Systems Biology, 2014, 10, 741.	3.2	57
64	Sensitivity Analysis of Intracellular Signaling Pathway Kinetics Predicts Targets for Stem Cell Fate Control. PLoS Computational Biology, 2007, 3, e130.	1.5	55
65	Rational bioprocess design for human pluripotent stem cell expansion and endoderm differentiation based on cellular dynamics. Biotechnology and Bioengineering, 2012, 109, 853-866.	1.7	51
66	Clinically Relevant Expansion of Hematopoietic Stem Cells with Conserved Function in a Single-Use, Closed-System Bioprocess. Biology of Blood and Marrow Transplantation, 2006, 12, 1020-1030.	2.0	50
67	Immobilization of growth factors on solid supports for the modulation of stem cell fate. Nature Protocols, 2010, 5, 1042-1050.	5.5	50
68	Modeling signalingâ€dependent pluripotency with Boolean logic to predict cell fate transitions. Molecular Systems Biology, 2018, 14, e7952.	3.2	49
69	Towards predictive models of stem cell fate. Cytotechnology, 2003, 41, 75-92.	0.7	48
70	Supplementation-dependent differences in the rates of embryonic stem cell self-renewal, differentiation, and apoptosis. Biotechnology and Bioengineering, 2003, 84, 505-517.	1.7	45
71	Quantitative screening of embryonic stem cell differentiation: Endoderm formation as a model. Biotechnology and Bioengineering, 2004, 88, 287-298.	1.7	43
72	Systematic engineering of 3D pluripotent stem cell niches to guide blood development. Biomaterials, 2012, 33, 1271-1280.	5.7	42

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73	High density continuous production of murine pluripotent cells in an acoustic perfused bioreactor at different oxygen concentrations. Biotechnology and Bioengineering, 2013, 110, 648-655.	1.7	40
74	Proneurogenic Ligands Defined by Modeling Developing Cortex Growth Factor Communication Networks. Neuron, 2016, 91, 988-1004.	3.8	39
75	Identifying Extrinsic versus Intrinsic Drivers of Variation in Cell Behavior in Human iPSC Lines from Healthy Donors. Cell Reports, 2019, 26, 2078-2087.e3.	2.9	36
76	Understanding cellular networks to improve hematopoietic stem cell expansion cultures. Current Opinion in Biotechnology, 2006, 17, 538-547.	3.3	34
77	High-throughput micropatterning platform reveals Nodal-dependent bisection of peri-gastrulationâ€“associated versus preneurulation-associated fate patterning. PLoS Biology, 2019, 17, e3000081.	2.6	34
78	Advances in hematopoietic stem cell culture. Current Opinion in Biotechnology, 1998, 9, 146-151.	3.3	33
79	Soluble Flt-1 Regulates Flk-1 Activation to Control Hematopoietic and Endothelial Development in an Oxygen-Responsive Manner. Stem Cells, 2008, 26, 2832-2842.	1.4	33
80	Achieving Efficient Manufacturing and Quality Assurance through Synthetic Cell Therapy Design. Cell Stem Cell, 2017, 20, 13-17.	5.2	33
81	FZD4 Marks Lateral Plate Mesoderm and Signals with NORRIN to Increase Cardiomyocyte Induction from Pluripotent Stem Cell-Derived Cardiac Progenitors. Stem Cell Reports, 2018, 10, 87-100.	2.3	32
82	Functional arrays of human pluripotent stem cell-derived cardiac microtissues. Scientific Reports, 2020, 10, 6919.	1.6	32
83	Tissue engineering 2.0: guiding self-organization during pluripotent stem cell differentiation. Current Opinion in Biotechnology, 2012, 23, 810-819.	3.3	31
84	Distinguishing autocrine and paracrine signals in hematopoietic stem cell culture using a biofunctional microcavity platform. Scientific Reports, 2016, 6, 31951.	1.6	29
85	Modulating cell state to enhance suspension expansion of human pluripotent stem cells. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 6369-6374.	3.3	29
86	Scalable Production of Embryonic Stem Cell-Derived Cells. , 2005, 290, 353-364.		28
87	Transforming the Promise of Pluripotent Stem Cell-Derived Cardiomyocytes to a Therapy: Challenges and Solutions for Clinical Trials. Canadian Journal of Cardiology, 2014, 30, 1335-1349.	0.8	27
88	Synthetic gene circuits and cellular decision-making in human pluripotent stem cells. Current Opinion in Systems Biology, 2017, 5, 93-103.	1.3	25
89	Analysis of the temporal and concentration-dependent effects of BMP-4, VEGF, and TPO on development of embryonic stem cellâ€“derived mesoderm and blood progenitors in a defined, serum-free media. Experimental Hematology, 2008, 36, 1186-1198.	0.2	24
90	Blood stem cell fate regulation by Delta-1â€“mediated rewiring of IL-6 paracrine signaling. Blood, 2014, 123, 650-658.	0.6	23

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91	Enhanced human hematopoietic stem and progenitor cell engraftment by blocking donor T cellâ€"mediated TNFÎ± signaling. Science Translational Medicine, 2017, 9, .	5.8	23
92	Engineered heart tissue enables study of residual undifferentiated embryonic stem cell activity in a cardiac environment. Biotechnology and Bioengineering, 2011, 108, 704-719.	1.7	22
93	Chemically controlled aggregation of pluripotent stem cells. Biotechnology and Bioengineering, 2018, 115, 2061-2066.	1.7	22
94	Engineering the haemogenic niche mitigates endogenous inhibitory signals and controls pluripotent stem cell-derived blood emergence. Nature Communications, 2017, 8, 15380.	5.8	21
95	Engineering cell fitness: lessons for regenerative medicine. Current Opinion in Biotechnology, 2017, 47, 7-15.	3.3	19
96	Fluorescence activated cell sorting reveals heterogeneous and cell non-autonomous osteoprogenitor differentiation in fetal rat calvaria cell populations. Journal of Cellular Biochemistry, 2003, 90, 109-120.	1.2	18
97	Blood stem cell products: Toward sustainable benchmarks for clinical translation. BioEssays, 2013, 35, 201-210.	1.2	18
98	Local BMP-SMAD1 Signaling Increases LIF Receptor-Dependent STAT3 Responsiveness and Primed-to-Naive Mouse Pluripotent Stem Cell Conversion Frequency. Stem Cell Reports, 2014, 3, 156-168.	2.3	18
99	Signal processing underlying extrinsic control of stem cell fate. Current Opinion in Hematology, 2004, 11, 95-101.	1.2	17
100	Clonal evolution of stem and differentiated cells can be predicted by integrating cell-intrinsic and -extrinsic parameters. Biotechnology and Applied Biochemistry, 2005, 42, 119.	1.4	16
101	Phenotypic Analysis of Human Embryonic Stem Cells. , 2007, Chapter 1, Unit 1B.3.		16
102	Microdroplet-based one-step RT-PCR for ultrahigh throughput single-cell multiplex gene expression analysis and rare cell detection. Scientific Reports, 2021, 11, 6777.	1.6	15
103	Synthetic Peptide Arrays for Pathway-Level Protein Monitoring by Liquid Chromatography-Tandem Mass Spectrometry. Molecular and Cellular Proteomics, 2010, 9, 2460-2473.	2.5	14
104	Integrative network analysis of signaling in human CD34⁺ hematopoietic progenitor cells by global phosphoproteomic profiling using TiO₂ enrichment combined with 2D LCâ€MS/MS and pathway mapping. Proteomics, 2013, 13, 1325-1333.	1.3	14
105	Steric Hindrance Assay for Secreted Factors in Stem Cell Culture. ACS Sensors, 2017, 2, 495-500.	4.0	14
106	The AC133+CD38â^', but not the rhodamine-low, phenotype tracks LTC-IC and SRC function in human cord blood ex vivo expansion cultures. Blood, 2010, 115, 257-260.	0.6	13
107	Realâ€time monitoring and control of soluble signaling factors enables enhanced progenitor cell outputs from human cord blood stem cell cultures. Biotechnology and Bioengineering, 2014, 111, 1258-1264.	1.7	13
108	IQCELL: A platform for predicting the effect of gene perturbations on developmental trajectories using single-cell RNA-seq data. PLoS Computational Biology, 2022, 18, e1009907.	1.5	13

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109	Microenvironment-mediated reversion of epiblast stem cells by reactivation of repressed JAKâ€“STAT signaling. Integrative Biology (United Kingdom), 2012, 4, 1367.	0.6	12
110	Two-dimensional arrays of cell-laden polymer hydrogel modules. Biomicrofluidics, 2016, 10, 014110.	1.2	12
111	An automated system for delivery of an unstable transcription factor to hematopoietic stem cell cultures. Biotechnology and Bioengineering, 2009, 103, 402-412.	1.7	11
112	Proportional-Integral-Derivative (PID) Control of Secreted Factors for Blood Stem Cell Culture. PLoS ONE, 2015, 10, e0137392.	1.1	11
113	Context-explorer: Analysis of spatially organized protein expression in high-throughput screens. PLoS Computational Biology, 2019, 15, e1006384.	1.5	11
114	Engineering cardiac healing using embryonic stem cell-derived cardiac cell seeded constructs. Frontiers in Bioscience - Landmark, 2007, 12, 3694.	3.0	10
115	Multi-objective optimization reveals time- and dose-dependent inflammatory cytokine-mediated regulation of human stem cell derived T-cell development. Npj Regenerative Medicine, 2022, 7, 11.	2.5	10
116	Two-Color Image Analysis Discriminates between Mineralized and Unmineralized Bone Nodules In Vitro. BioTechniques, 2003, 34, 1188-1198.	0.8	9
117	Environmental Requirements of Hematopoietic Progenitor Cells in Ex Vivo Expansion Systems. , 1999, , 245-272.		8
118	A Global Assessment of Stem Cell Engineering. Tissue Engineering - Part A, 2014, 20, 2575-2589.	1.6	7
119	Endogenous suppression of WNT signalling in human embryonic stem cells leads to low differentiation propensity towards definitive endoderm. Scientific Reports, 2021, 11, 6137.	1.6	6
120	Process evolution in cell and gene therapy from discovery to commercialization. Canadian Journal of Chemical Engineering, 2021, 99, 2517-2524.	0.9	6
121	Enhanced Human Hematopoietic Stem Cell Self-Renewal Enabled by Controlling Feedback Signaling From Lineage Committed Cells. Blood, 2011, 118, 1274-1274.	0.6	5
122	Human pluripotent stem cell process parameter optimization in a small scale suspension bioreactor. BMC Proceedings, 2015, 9, O10.	1.8	3
123	Chasing blood. Nature, 2015, 518, 488-490.	13.7	3
124	Mechanics-guided developmental fate patterning. Nature Materials, 2018, 17, 571-572.	13.3	3
125	Single UM171 Expanded Cord Blood Permits Transplantation of Better HLA Matched Cords with Excellent Gvhd Relapse Free Survival. Blood, 2018, 132, 4658-4658.	0.6	3
126	Systematic Approach to the Development of Stem Cell Expansion Cultures. , 2004, , 663-676.		2

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127	Pairing cells to enhance fusion. Nature Methods, 2009, 6, 123-124.	9.0	2
128	Culture Conditions for Generating Human Bone Marrow Stromal Cells Influence Cell Immunophenotype and In Vivo Biodistribution in Immune Deficient Mice.. Blood, 2004, 104, 2334-2334.	0.6	1
129	Computational Modeling and Stem Cell Engineering. Science Policy Reports, 2014, , 65-97.	0.1	0
130	Bringing Blood Stem Cell Phenotype, Genotype, and Function Closer Together. Cell Stem Cell, 2015, 16, 574-575.	5.2	0
131	Enhancement of Soluble Transcription Factor (TAT-HOXB4 and TAT-NUP98HOXA10HD) - Mediated Human Hematopoietic Stem Cell Self-Renewal by Minimizing Inhibitory Endogenous Signalling.. Blood, 2009, 114, 1493-1493.	0.6	0
132	Engineering the Pluripotent Stem Cell Niche for Directed Mesoderm Differentiation. , 2012, , 1-26.		0