Peter Zandstra

List of Articles by Year in descending order

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138 peer-reviewed articles	12,743 peer-reviewed citations	30149 56 peer-reviewed h-index	288671 5.19 score
155 documents	16154 doc citations	27325 62 h-index	40482 citing authors

#	Article	IF	Citations
1	Sex-biased human thymic architecture guides T cell development through spatially defined niches. Developmental Cell, 2025, 60, 152-169.e8.	5.3	22
2	Rebuilding and rebooting immunity with stem cells. Cell Stem Cell, 2024, 31, 597-616.	11.6	10
3	T-Cell Differentiation from Hematopoietic Progenitor Cells Using 3D Thymic-like Hydrogels. GEN Biotechnology, 2024, 3, 136-151.	0.6	3
4	Tracking the gene expression programs and clonal relationships that underlie mast, myeloid, and T lineage specification from stem cells. Cell Systems, 2024, 15, 1245-1263.e10.	3.5	12
5	Virtual cells in a virtual microenvironment recapitulate early development-like patterns in human pluripotent stem cell colonies. Stem Cell Reports, 2023, 18, 377-393.	3.0	22
6	Engineering T Cell Development for the Next Generation of Stem Cell-Derived Immunotherapies. GEN Biotechnology, 2023, 2, 106-119.	0.6	15
7	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, .	4.2	25
8	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.	1.9	26
9	DLL4 and VCAM1 enhance the emergence of T cell–competent hematopoietic progenitors from human pluripotent stem cells. Science Advances, 2022, 8, .	8.1	47
10	Synthetic gene circuits for cell state detection and protein tuning in human pluripotent stem cells. Molecular Systems Biology, 2022, 18, .	3.6	17
11	Highly efficient reprogrammable mouse lines with integrated reporters to track the route to pluripotency. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	5.2	8
12	Microdroplet-based one-step RT-PCR for ultrahigh throughput single-cell multiplex gene expression analysis and rare cell detection. Scientific Reports, 2021, 11, .	2.7	30
13	Endogenous suppression of WNT signalling in human embryonic stem cells leads to low differentiation propensity towards definitive endoderm. Scientific Reports, 2021, 11, .	2.7	16
14	Process evolution in cell and gene therapy from discovery to commercialization. Canadian Journal of Chemical Engineering, 2021, 99, 2517-2524.	1.4	12
15	Hematopoietic stem cell transplantation using single UM171-expanded cord blood: a single-arm, phase 1–2 safety and feasibility study. Lancet Haematology,the, 2020, 7, e134-e145.	7.5	195
16	A 96-well culture platform enables longitudinal analyses of engineered human skeletal muscle microtissue strength. Scientific Reports, 2020, 10, .	2.7	110
17	Functional arrays of human pluripotent stem cell-derived cardiac microtissues. Scientific Reports, 2020, 10, .	2.7	43
18	Context-explorer: Analysis of spatially organized protein expression in high-throughput screens. PLoS Computational Biology, 2019, 15, e1006384.	1.9	11

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19	Human Embryonic Stem Cell-Derived Cardiomyocytes Regenerate the Infarcted Pig Heart but Induce Ventricular Tachyarrhythmias. Stem Cell Reports, 2019, 12, 967-981.	3.0	307
20	Cell competition during reprogramming gives rise to dominant clones. Science, 2019, 364, .	26.1	104
21	Identifying Extrinsic versus Intrinsic Drivers of Variation in Cell Behavior in Human iPSC Lines from Healthy Donors. Cell Reports, 2019, 26, 2078-2087.e3.	4.4	39
22	High-throughput micropatterning platform reveals Nodal-dependent bisection of peri-gastrulation–associated versus preneurulation-associated fate patterning. PLoS Biology, 2019, 17, e3000081.	3.1	42
23	Chemically controlled aggregation of pluripotent stem cells. Biotechnology and Bioengineering, 2018, 115, 2061-2066.	2.7	24
24	Modeling signaling-dependent pluripotency with Boolean logic to predict cell fate transitions. Molecular Systems Biology, 2018, 14, .	3.6	59
25	A Myc enhancer cluster regulates normal and leukaemic haematopoietic stem cell hierarchies. Nature, 2018, 553, 515-520.	30.6	327
26	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.	3.0	39
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, .	2.6	334
28	Stem cell bioengineering: building from stem cell biology. Nature Reviews Genetics, 2018, 19, 595-614.	30.1	97
29	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.	5.2	33
30	Progenitor T-cell differentiation from hematopoietic stem cells using Delta-like-4 and VCAM-1. Nature Methods, 2017, 14, 531-538.	13.1	133
31	Steric Hindrance Assay for Secreted Factors in Stem Cell Culture. ACS Sensors, 2017, 2, 495-500.	7.1	17
32	Engineering the haemogenic niche mitigates endogenous inhibitory signals and controls pluripotent stem cell-derived blood emergence. Nature Communications, 2017, 8, .	10.8	22
33	Engineering cell fitness: lessons for regenerative medicine. Current Opinion in Biotechnology, 2017, 47, 7-15.	4.7	27
34	A stepwise model of Reaction-Diffusion and Positional-Information governs self-organized human peri-gastrulation-like patterning. Development (Cambridge), 2017, , .	2.1	140
35	Synthetic gene circuits and cellular decision-making in human pluripotent stem cells. Current Opinion in Systems Biology, 2017, 5, 93-103.	1.2	30
36	Enhanced human hematopoietic stem and progenitor cell engraftment by blocking donor T cell–mediated TNFα signaling. Science Translational Medicine, 2017, 9, .	8.7	25

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37	Two-dimensional arrays of cell-laden polymer hydrogel modules. Biomicrofluidics, 2016, 10, .	1.6	14
38	A 17-gene stemness score for rapid determination of risk in acute leukaemia. Nature, 2016, 540, 433-437.	30.6	852
39	Proneurogenic Ligands Defined by Modeling Developing Cortex Growth Factor Communication Networks. Neuron, 2016, 91, 988-1004.	8.2	46
40	Distinguishing autocrine and paracrine signals in hematopoietic stem cell culture using a biofunctional microcavity platform. Scientific Reports, 2016, 6, .	2.7	37
41	Signaling Networks among Stem Cell Precursors, Transit-Amplifying Progenitors, and their Niche in Developing Hair Follicles. Cell Reports, 2016, 14, 3001-3018.	4.4	201
42	miR-126 Regulates Distinct Self-Renewal Outcomes in Normal and Malignant Hematopoietic Stem Cells. Cancer Cell, 2016, 29, 214-228.	28.4	249
43	Proportional-Integral-Derivative (PID) Control of Secreted Factors for Blood Stem Cell Culture. PLoS ONE, 2015, 10, e0137392.	1.5	15
44	The microwell-mesh: A novel device and protocol for the high throughput manufacturing of cartilage microtissues. Biomaterials, 2015, 62, 1-12.	9.5	78
45	PI3K Phosphorylation Is Linked to Improved Electrical Excitability in an In Vitro Engineered Heart Tissue Disease Model System. Tissue Engineering - Part A, 2015, 21, 2379-2389.	1.9	10
46	CD24 tracks divergent pluripotent states in mouse and human cells. Nature Communications, 2015, 6, .	10.8	88
47	LIF signaling in stem cells and development. Development (Cambridge), 2015, 142, 2230-2236.	2.1	124
48	A Mass Spectrometric-Derived Cell Surface Protein Atlas. PLoS ONE, 2015, 10, e0121314.	1.5	468
49	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.	1.4	28
50	Genome-wide characterization of the routes to pluripotency. Nature, 2014, 516, 198-206.	30.6	200
51	A Global Assessment of Stem Cell Engineering. Tissue Engineering - Part A, 2014, 20, 2575-2589.	1.9	8
52	Real-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.	2.7	15
53	Intercellular network structure and regulatory motifs in the human hematopoietic system. Molecular Systems Biology, 2014, 10, .	3.6	76
54	Blood stem cell fate regulation by Delta-1–mediated rewiring of IL-6 paracrine signaling. Blood, 2014, 123, 650-658.	3.6	23

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55	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.	3.0	25
56	High-throughput fingerprinting of human pluripotent stem cell fate responses and lineage bias. Nature Methods, 2013, 10, 1225-1231.	13.1	64
57	Blood stem cell products: Toward sustainable benchmarks for clinical translation. BioEssays, 2013, 35, 201-210.	1.7	18
58	High density continuous production of murine pluripotent cells in an acoustic perfused bioreactor at different oxygen concentrations. Biotechnology and Bioengineering, 2013, 110, 648-655.	2.7	40
59	Integrative network analysis of signaling in human CD34+ hematopoietic progenitor cells by global phosphoproteomic profiling using TiO2 enrichment combined with 2D LC-MS/MS and pathway mapping. Proteomics, 2013, 13, 1325-1333.	2.1	16
60	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, .	5.2	289
61	PERT: A Method for Expression Deconvolution of Human Blood Samples from Varied Microenvironmental and Developmental Conditions. PLoS Computational Biology, 2012, 8, e1002838.	1.9	119
62	Regulated Expression and Role of c-Myb in the Cardiovascular-Directed Differentiation of Mouse Embryonic Stem Cells. Circulation Research, 2012, 110, 253-264.	8.6	12
63	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.	5.2	64
64	A Microfabricated Platform to Measure and Manipulate the Mechanics of Engineered Cardiac Microtissues. Tissue Engineering - Part A, 2012, 18, 910-919.	1.9	406
65	Rapid Expansion of Human Hematopoietic Stem Cells by Automated Control of Inhibitory Feedback Signaling. Cell Stem Cell, 2012, 10, 218-229.	11.6	244
66	Derivation, expansion and differentiation of induced pluripotent stem cells in continuous suspension cultures. Nature Methods, 2012, 9, 509-516.	13.1	107
67	Tissue engineering 2.0: guiding self-organization during pluripotent stem cell differentiation. Current Opinion in Biotechnology, 2012, 23, 810-819.	4.7	32
68	Microenvironment-mediated reversion of epiblast stem cells by reactivation of repressed JAK–STAT signaling. Integrative Biology (United Kingdom), 2012, 4, 1367.	1.4	12
69	Systematic engineering of 3D pluripotent stem cell niches to guide blood development. Biomaterials, 2012, 33, 1271-1280.	9.5	46
70	Rational bioprocess design for human pluripotent stem cell expansion and endoderm differentiation based on cellular dynamics. Biotechnology and Bioengineering, 2012, 109, 853-866.	2.7	54
71	Engineered Heart Tissue Model of Diabetic Myocardium. Tissue Engineering - Part A, 2011, 17, 1869-1878.	1.9	29
72	High-throughput combinatorial cell co-culture using microfluidics. Integrative Biology (United Kingdom), 2011, 3, 653.	1.4	193

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73	An Alternative Splicing Switch Regulates Embryonic Stem Cell Pluripotency and Reprogramming. Cell, 2011, 147, 132-146.	23.4	375
74	Engineered heart tissue enables study of residual undifferentiated embryonic stem cell activity in a cardiac environment. Biotechnology and Bioengineering, 2011, 108, 704-719.	2.7	22
75	Creation of mouse embryonic stem cell-derived cardiac cell sheets. Biomaterials, 2011, 32, 7355-7362.	9.5	93
76	Incorporation of biomaterials in multicellular aggregates modulates pluripotent stem cell differentiation. Biomaterials, 2011, 32, 48-56.	9.5	164
77	High-throughput generation of hydrogel microbeads with varying elasticity for cell encapsulation. Biomaterials, 2011, 32, 1477-1483.	9.5	206
78	Geometric Control of Cardiomyogenic Induction in Human Pluripotent Stem Cells. Tissue Engineering - Part A, 2011, 17, 1901-1909.	1.9	81
79	Enhanced Human Hematopoietic Stem Cell Self-Renewal Enabled by Controlling Feedback Signaling From Lineage Committed Cells. Blood, 2011, 118, 1274-1274.	3.6	5
80	The use of vascular endothelial growth factor functionalized agarose to guide pluripotent stem cell aggregates toward blood progenitor cells. Biomaterials, 2010, 31, 8262-8270.	9.5	74
81	Enabling stem cell therapies through synthetic stem cell–niche engineering. Journal of Clinical Investigation, 2010, 120, 60-70.	6.6	166
82	Synthetic Peptide Arrays for Pathway-Level Protein Monitoring by Liquid Chromatography-Tandem Mass Spectrometry. Molecular and Cellular Proteomics, 2010, 9, 2460-2473.	3.2	15
83	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.	5.2	84
84	Dynamic interaction networks in a hierarchically organized tissue. Molecular Systems Biology, 2010, 6, .	3.6	134
85	Cell–cell interaction networks regulate blood stem and progenitor cell fate. Molecular Systems Biology, 2009, 5, .	3.6	114
86	Generation of human embryonic stem cell-derived mesoderm and cardiac cells using size-specified aggregates in an oxygen-controlled bioreactor. Biotechnology and Bioengineering, 2009, 102, 493-507.	2.7	216
87	An automated system for delivery of an unstable transcription factor to hematopoietic stem cell cultures. Biotechnology and Bioengineering, 2009, 103, 402-412.	2.7	11
88	Alternative Induced Pluripotent Stem Cell Characterization Criteria for In Vitro Applications. Cell Stem Cell, 2009, 4, 198-199.	11.6	64
89	Growth Factors, Matrices, and Forces Combine and Control Stem Cells. Science, 2009, 324, 1673-1677.	26.1	2,579
90	Manipulation of Signaling Thresholds in “Engineered Stem Cell Niches” Identifies Design Criteria for Pluripotent Stem Cell Screens. PLoS ONE, 2009, 4, e6438.	1.5	63

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91	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.	3.6	0
92	Control of Human Embryonic Stem Cell Colony and Aggregate Size Heterogeneity Influences Differentiation Trajectories. Stem Cells, 2008, 26, 2300-2310.	2.7	439
93	Soluble Flt-1 Regulates Flk-1 Activation to Control Hematopoietic and Endothelial Development in an Oxygen-Responsive Manner. Stem Cells, 2008, 26, 2832-2842.	2.7	33
94	Don't Look: Growing Clonal Versus Nonclonal Neural Stem Cell Colonies. Stem Cells, 2008, 26, 2938-2944.	2.7	150
95	TAZ controls Smad nucleocytoplasmic shuttling and regulates human embryonic stem-cell self-renewal. Nature Cell Biology, 2008, 10, 837-848.	12.6	633
96	Functional immobilization of signaling proteins enables control of stem cell fate. Nature Methods, 2008, 5, 645-650.	13.1	193
97	Analysis of the temporal and concentration-dependent effects of BMP-4, VEGF, and TPO on development of embryonic stem cell–derived mesoderm and blood progenitors in a defined, serum-free media. Experimental Hematology, 2008, 36, 1186-1198.	0.6	25
98	The Systematic Production of Cells for Cell Therapies. Cell Stem Cell, 2008, 3, 369-381.	11.6	301
99	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.	1.9	68
100	Reproducible, Ultra High-Throughput Formation of Multicellular Organization from Single Cell Suspension-Derived Human Embryonic Stem Cell Aggregates. PLoS ONE, 2008, 3, e1565.	1.5	384
101	LIF-mediated control of embryonic stem cell self-renewal emerges due to an autoregulatory loop. FASEB Journal, 2007, 21, 2020-2032.	2.3	63
102	Sensitivity Analysis of Intracellular Signaling Pathway Kinetics Predicts Targets for Stem Cell Fate Control. PLoS Computational Biology, 2007, 3, e130.	1.9	55
103	Prediction and Testing of Novel Transcriptional Networks Regulating Embryonic Stem Cell Self-Renewal and Commitment. Cell Stem Cell, 2007, 1, 71-86.	11.6	103
104	Niche-mediated control of human embryonic stem cell self-renewal and differentiation. EMBO Journal, 2007, 26, 4744-4755.	5.1	386
105	Phenotypic Analysis of Human Embryonic Stem Cells. Current Protocols in Stem Cell Biology, 2007, 2, .	1.5	18
106	Engineering cardiac healing using embryonic stem cell-derived cardiac cell seeded constructs. Frontiers in Bioscience - Landmark, 2007, 12, 3694.	5.8	10
107	Spatial Organization of Embryonic Stem Cell Responsiveness to Autocrine Gp130 Ligands Reveals an Autoregulatory Stem Cell Niche. Stem Cells, 2006, 24, 2538-2548.	2.7	58
108	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.	1.6	51

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109	Understanding cellular networks to improve hematopoietic stem cell expansion cultures. Current Opinion in Biotechnology, 2006, 17, 538-547.	4.7	34
110	Polyurethane films seeded with embryonic stem cell-derived cardiomyocytes for use in cardiac tissue engineering applications. Biomaterials, 2005, 26, 7377-7386.	9.5	174
111	Shear-Controlled Single-Step Mouse Embryonic Stem Cell Expansion and Embryoid Body-Based Differentiation. Stem Cells, 2005, 23, 1333-1342.	2.7	225
112	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.	0.6	60
113	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.	2.7	146
114	Culture development for human embryonic stem cell propagation: molecular aspects and challenges. Current Opinion in Biotechnology, 2005, 16, 568-576.	4.7	77
115	Clonal evolution of stem and differentiated cells can be predicted by integrating cell-intrinsic and -extrinsic parameters. Biotechnology and Applied Biochemistry, 2005, 42, 119.	1.9	16
116	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.	5.2	103
117	Sustained In Vitro Expansion of Bone Progenitors Is Cell Density Dependent. Stem Cells, 2004, 22, 39-50.	2.7	76
118	Controlled, Scalable Embryonic Stem Cell Differentiation Culture. Stem Cells, 2004, 22, 275-282.	2.7	285
119	Quantitative screening of embryonic stem cell differentiation: Endoderm formation as a model. Biotechnology and Bioengineering, 2004, 88, 287-298.	2.7	43
120	Signal processing underlying extrinsic control of stem cell fate. Current Opinion in Hematology, 2004, 11, 95-101.	1.4	17
121	Title is missing!. Cytotechnology, 2003, 41, 75-92.	1.3	50
122	Adult human bone marrow–derived mesenchymal progenitor cells are capable of adhesion-independent survival and expansion. Experimental Hematology, 2003, 31, 723-732.	0.6	121
123	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.	1.8	18
124	Supplementation-dependent differences in the rates of embryonic stem cell self-renewal, differentiation, and apoptosis. Biotechnology and Bioengineering, 2003, 84, 505-517.	2.7	49
125	Scalable Production of Embryonic Stem Cell-Derived Cardiomyocytes. Tissue Engineering, 2003, 9, 767-778.	4.8	272
126	Two-Color Image Analysis Discriminates between Mineralized and Unmineralized Bone Nodules In Vitro. BioTechniques, 2003, 34, 1188-1198.	2.7	10

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127	Efficiency of embryoid body formation and hematopoietic development from embryonic stem cells in different culture systems. Biotechnology and Bioengineering, 2002, 78, 442-453.	2.7	332
128	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.	2.7	89
129	Modeling Stem Cell Development by Retrospective Analysis of Gene Expression Profiles in Single Progenitor-Derived Colonies. Stem Cells, 2002, 20, 230-240.	2.7	40
130	Stem Cell Bioengineering. Annual Review of Biomedical Engineering, 2001, 3, 275-305.	6.0	124
131	Controlling Culture Dynamics for the Expansion of Hematopoietic Stem Cells. Journal of Hematotherapy and Stem Cell Research, 2001, 10, 481-492.	1.8	23
132	Advances in hematopoietic stem cell culture. Current Opinion in Biotechnology, 1998, 9, 146-151.	4.7	34
133	Ontogeny-associated changes in the cytokine responses of primitive human haemopoietic cells. British Journal of Haematology, 1998, 101, 770-778.	1.7	95
134	Cytokine manipulation of primitive human hematopoietic cell self-renewal. Proceedings of the National Academy of Sciences of the United States of America, 1997, 94, 4698-4703.	5.2	281
135	Expansion of Hematopoietic Progenitor Cell Populations in Stirred Suspension Bioreactors of Normal Human Bone Marrow Cells. Nature Biotechnology, 1994, 12, 909-914.	19.7	104
136	Unusual surface tension behavior of an aqueous solution of gramicidin S. Journal of Colloid and Interface Science, 1992, 151, 130-135.	7.9	2
137	Title is missing!. , 0, .		1
138	Innate lymphoid cells in the spotlight: from biomarkers to blueprint for innovative immunotherapy. Frontiers in Immunology, 0, 16, .	3.3	15