Alex Zhavoronkov

List of Publications by Year
in descending order

151	9,905	36203	43802
papers	citations	51 h-index	91 g-index

160	160	160	10809
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Deep learning enables rapid identification of potent DDR1 kinase inhibitors. Nature Biotechnology, 2019, 37, 1038-1040.	9.4	671
2	Applications of Deep Learning in Biomedicine. Molecular Pharmaceutics, 2016, 13, 1445-1454.	2.3	535
3	Deep Learning Applications for Predicting Pharmacological Properties of Drugs and Drug Repurposing Using Transcriptomic Data. Molecular Pharmaceutics, 2016, 13, 2524-2530.	2.3	405
4	druGAN: An Advanced Generative Adversarial Autoencoder Model for de Novo Generation of New Molecules with Desired Molecular Properties in Silico. Molecular Pharmaceutics, 2017, 14, 3098-3104.	2.3	384
5	Converging blockchain and next-generation artificial intelligence technologies to decentralize and accelerate biomedical research and healthcare. Oncotarget, 2018, 9, 5665-5690.	0.8	315
6	The role of DNA damage and repair in aging through the prism of Koch-like criteria. Ageing Research Reviews, 2013, 12, 661-684.	5.0	290
7	Deep biomarkers of human aging: Application of deep neural networks to biomarker development. Aging, 2016, 8, 1021-1033.	1.4	266
8	Molecular Sets (MOSES): A Benchmarking Platform for Molecular Generation Models. Frontiers in Pharmacology, 2020, 11, 565644.	1.6	266
9	Reinforced Adversarial Neural Computer for de Novo Molecular Design. Journal of Chemical Information and Modeling, 2018, 58, 1194-1204.	2.5	256
10	The cornucopia of meaningful leads: Applying deep adversarial autoencoders for new molecule development in oncology. Oncotarget, 2017, 8, 10883-10890.	0.8	249
11	Bifunctional immune checkpoint-targeted antibody-ligand traps that simultaneously disable TGFÎ² enhance the efficacy of cancer immunotherapy. Nature Communications, 2018, 9, 741.	5.8	238
12	Entangled Conditional Adversarial Autoencoder for de Novo Drug Discovery. Molecular Pharmaceutics, 2018, 15, 4398-4405.	2.3	166
13	Genetics and epigenetics of aging and longevity. Cell Cycle, 2014, 13, 1063-1077.	1.3	157
14	Adversarial Threshold Neural Computer for Molecular de Novo Design. Molecular Pharmaceutics, 2018, 15, 4386-4397.	2.3	153
15	Machine Learning on Human Muscle Transcriptomic Data for Biomarker Discovery and Tissue-Specific Drug Target Identification. Frontiers in Genetics, 2018, 9, 242.	1.1	149
16	Design of efficient computational workflows for in silico drug repurposing. Drug Discovery Today, 2017, 22, 210-222.	3.2	139
17	Population Specific Biomarkers of Human Aging: A Big Data Study Using South Korean, Canadian, and Eastern European Patient Populations. Journals of Gerontology - Series A Biological Sciences and Medical Sciences, 2018, 73, 1482-1490.	1.7	133
18	Artificial intelligence for aging and longevity research: Recent advances and perspectives. Ageing Research Reviews, 2019, 49, 49-66.	5.0	129

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19	Gadd45 proteins: Relevance to aging, longevity and age-related pathologies. Ageing Research Reviews, 2012, 11, 51-66.	5.0	126
20	In silico Pathway Activation Network Decomposition Analysis (iPANDA) as a method for biomarker development. Nature Communications, 2016, 7, 13427.	5.8	126
21	Oncofinder, a new method for the analysis of intracellular signaling pathway activation using transcriptomic data. Frontiers in Genetics, 2014, 5, 55.	1.1	122
22	The DrugAge database of aging-related drugs. Aging Cell, 2017, 16, 594-597.	3.0	121
23	Human Gut Microbiome Aging Clock Based on Taxonomic Profiling and Deep Learning. IScience, 2020, 23, 101199.	1.9	117
24	Brain-Computer Interface Based on Generation of Visual Images. PLoS ONE, 2011, 6, e20674.	1.1	108
25	Artificial Intelligence for Drug Discovery, Biomarker Development, and Generation of Novel Chemistry. Molecular Pharmaceutics, 2018, 15, 4311-4313.	2.3	102
26	Biohorology and biomarkers of aging: Current state-of-the-art, challenges and opportunities. Ageing Research Reviews, 2020, 60, 101050.	5.0	101
27	Developing criteria for evaluation of geroprotectors as a key stage toward translation to the clinic. Aging Cell, 2016, 15, 407-415.	3.0	97
28	Data aggregation at the level of molecular pathways improves stability of experimental transcriptomic and proteomic data. Cell Cycle, 2017, 16, 1810-1823.	1.3	96
29	A role for Gâ€CSF and GMâ€CSF in nonmyeloid cancers. Cancer Medicine, 2014, 3, 737-746.	1.3	93
30	Molecular functions of human endogenous retroviruses in health and disease. Cellular and Molecular Life Sciences, 2015, 72, 3653-3675.	2.4	93
31	Geroprotectors.org: a new, structured and curated database of current therapeutic interventions in aging and age-related disease. Aging, 2015, 7, 616-628.	1.4	93
32	Signaling pathways activation profiles make better markers of cancer than expression of individual genes. Oncotarget, 2014, 5, 10198-10205.	0.8	91
33	Human-specific endogenous retroviral insert serves as an enhancer for the schizophrenia-linked gene PRODH. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 19472-19477.	3.3	88
34	Molecular aspects of development and regulation of endometriosis. Reproductive Biology and Endocrinology, 2014, 12, 50.	1.4	85
35	The OncoFinder algorithm for minimizing the errors introduced by the high-throughput methods of transcriptome analysis. Frontiers in Molecular Biosciences, 2014, 1, 8.	1.6	77
36	Will Artificial Intelligence for Drug Discovery Impact Clinical Pharmacology?. Clinical Pharmacology and Therapeutics, 2020, 107, 780-785.	2.3	77

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37	Geroprotective and senoremediative strategies to reduce the comorbidity, infection rates, severity, and lethality in gerophilic and gerolavic infections. Aging, 2020, 12, 6492-6510.	1.4	75
38	Towards natural mimetics of metformin and rapamycin. Aging, 2017, 9, 2245-2268.	1.4	74
39	3D Molecular Representations Based on the Wave Transform for Convolutional Neural Networks. Molecular Pharmaceutics, 2018, 15, 4378-4385.	2.3	74
40	DeepMAge: A Methylation Aging Clock Developed with Deep Learning. , 2021, 12, 1252.		72
41	PhotoAgeClock: deep learning algorithms for development of non-invasive visual biomarkers of aging. Aging, 2018, 10, 3249-3259.	1.4	69
42	SMAD4 Loss Is Associated with Cetuximab Resistance and Induction of MAPK/JNK Activation in Head and Neck Cancer Cells. Clinical Cancer Research, 2017, 23, 5162-5175.	3.2	64
43	The Advent of Generative Chemistry. ACS Medicinal Chemistry Letters, 2020, 11, 1496-1505.	1.3	64
44	Blood Biochemistry Analysis to Detect Smoking Status and Quantify Accelerated Aging in Smokers. Scientific Reports, 2019, 9, 142.	1.6	63
45	Lifespan and Stress Resistance in Drosophila with Overexpressed DNA Repair Genes. Scientific Reports, 2015, 5, 15299.	1.6	62
46	Vive la radiorÃ©sistance!: converging research in radiobiology and biogerontology to enhance human radioresistance for deep space exploration and colonization. Oncotarget, 2018, 9, 14692-14722.	0.8	62
47	Signaling pathway activation drift during aging: Hutchinson-Gilford Progeria Syndrome fibroblasts are comparable to normal middle-age and old-age cells. Aging, 2015, 7, 26-37.	1.4	62
48	Fucoxanthin increases lifespan of Drosophila melanogaster and Caenorhabditis elegans. Pharmacological Research, 2015, 100, 228-241.	3.1	60
49	Pathway activation strength is a novel independent prognostic biomarker for cetuximab sensitivity in colorectal cancer patients. Human Genome Variation, 2015, 2, 15009.	0.4	58
50	MiRImpact, a new bioinformatic method using complete microRNA expression profiles to assess their overall influence on the activity of intracellular molecular pathways. Cell Cycle, 2016, 15, 689-698.	1.3	58
51	Immune profiles in primary squamous cell carcinoma of the head and neck. Oral Oncology, 2019, 96, 77-88.	0.8	57
52	Artificial intelligence, drug repurposing and peer review. Nature Biotechnology, 2020, 38, 1127-1131.	9.4	56
53	In search for geroprotectors: in silico screening and in vitro validation of signalome-level mimetics of young healthy state. Aging, 2016, 8, 2127-2152.	1.4	56
54	A method of gene expression data transfer from cell lines to cancer patients for machine-learning prediction of drug efficiency. Cell Cycle, 2018, 17, 486-491.	1.3	55

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55	Classifying aging as a disease in the context of ICD-11. Frontiers in Genetics, 2015, 6, 326.	1.1	53
56	A method for predicting target drug efficiency in cancer based on the analysis of signaling pathway activation. Oncotarget, 2015, 6, 29347-29356.	0.8	52
57	Differential expression of alternatively spliced transcripts related to energy metabolism in colorectal cancer. BMC Genomics, 2016, 17, 1011.	1.2	50
58	Deep Aging Clocks: The Emergence of AI-Based Biomarkers of Aging and Longevity. Trends in Pharmacological Sciences, 2019, 40, 546-549.	4.0	50
59	Low doses of X-rays induce prolonged and ATM-independent persistence of Î³H2AX foci in human gingival mesenchymal stem cells. Oncotarget, 2015, 6, 27275-27287.	0.8	48
60	Signaling pathway cloud regulation for in silico screening and ranking of the potential geroprotective drugs. Frontiers in Genetics, 2014, 5, 49.	1.1	47
61	Influence of non-steroidal anti-inflammatory drugs on Drosophila melanogaster longevity. Oncotarget, 2015, 6, 19428-19444.	0.8	46
62	Pro-fibrotic pathway activation in trabecular meshwork and lamina cribrosa is the main driving force of glaucoma. Cell Cycle, 2016, 15, 1643-1652.	1.3	43
63	Common pathway signature in lung and liver fibrosis. Cell Cycle, 2016, 15, 1667-1673.	1.3	43
64	Pathway activation profiling reveals new insights into Age-related Macular Degeneration and provides avenues for therapeutic interventions. Aging, 2014, 6, 1064-1075.	1.4	43
65	Novel robust biomarkers for human bladder cancer based on activation of intracellular signaling pathways. Oncotarget, 2014, 5, 9022-9032.	0.8	43
66	The role of D-GADD45 in oxidative, thermal and genotoxic stress resistance. Cell Cycle, 2012, 11, 4222-4241.	1.3	36
67	Methods for Structuring Scientific Knowledge from Many Areas Related to Aging Research. PLoS ONE, 2011, 6, e22597.	1.1	34
68	The potential of rapalogs to enhance resilience against SARS-CoV-2 infection and reduce the severity of COVID-19. The Lancet Healthy Longevity, 2021, 2, e105-e111.	2.0	34
69	New bioinformatic tool for quick identification of functionally relevant endogenous retroviral inserts in human genome. Cell Cycle, 2015, 14, 1476-1484.	1.3	33
70	Effect of lentivirus-mediated shRNA inactivation of HK1, HK2, and HK3 genes in colorectal cancer and melanoma cells. BMC Genetics, 2016, 17, 156.	2.7	33
71	Deep biomarkers of aging and longevity: from research to applications. Aging, 2019, 11, 10771-10780.	1.4	33
72	Hallmarks of aging-based dual-purpose disease and age-associated targets predicted using PandaOmics AI-powered discovery engine. Aging, 2022, 14, 2475-2506.	1.4	33

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73	Characteristic patterns of microRNA expression in human bladder cancer. Frontiers in Genetics, 2012, 3, 310.	1.1	32
74	Large-scale profiling of signalling pathways reveals an asthma specific signature in bronchial smooth muscle cells. Oncotarget, 2016, 7, 25150-25161.	0.8	32
75	Molecular pathway activation features linked with transition from normal skin to primary and metastatic melanomas in human. Oncotarget, 2016, 7, 656-670.	0.8	32
76	Use of deep neural network ensembles to identify embryonic-fetal transition markers: repression of COX7A1 in embryonic and cancer cells. Oncotarget, 2018, 9, 7796-7811.	0.8	32
77	ARDD 2020: from aging mechanisms to interventions. Aging, 2020, 12, 24484-24503.	1.4	32
78	Identification of Therapeutic Targets for Amyotrophic Lateral Sclerosis Using PandaOmics â€“ An AI-Enabled Biological Target Discovery Platform. Frontiers in Aging Neuroscience, 0, 14, .	1.7	32
79	Transcriptome Analysis of Long-lived Drosophila melanogaster E(z) Mutants Sheds Light on the Molecular Mechanisms of Longevity. Scientific Reports, 2019, 9, 9151.	1.6	31
80	Î³H2AX, 53BP1 and Rad51 protein foci changes in mesenchymal stem cells during prolonged X-ray irradiation. Oncotarget, 2017, 8, 64317-64329.	0.8	31
81	Effects of N-acetyl-L-cysteine on lifespan, locomotor activity and stress-resistance of 3 Drosophila species with different lifespans. Aging, 2018, 10, 2428-2458.	1.4	29
82	Interactome analysis of myeloid-derived suppressor cells in murine models of colon and breast cancer. Oncotarget, 2014, 5, 11345-11353.	0.8	29
83	Identification of Novel Antibacterials Using Machine Learning Techniques. Frontiers in Pharmacology, 2019, 10, 913.	1.6	28
84	Artificial intelligence in longevity medicine. Nature Aging, 2021, 1, 5-7.	5.3	28
85	Potential therapeutic approaches for modulating expression and accumulation of defective lamin A in laminopathies and age-related diseases. Journal of Molecular Medicine, 2012, 90, 1361-1389.	1.7	27
86	In silico analysis of pathways activation landscape in oral squamous cell carcinoma and oral leukoplakia. Cell Death Discovery, 2017, 3, 17022.	2.0	27
87	Activation of homologous recombination DNA repair in human skin fibroblasts continuously exposed to X-ray radiation. Oncotarget, 2015, 6, 26876-26885.	0.8	26
88	Aging and drug discovery. Aging, 2018, 10, 3079-3088.	1.4	25
89	Mineralization of the Connective Tissue: A Complex Molecular Process Leading to Age-Related Loss of Function. Rejuvenation Research, 2014, 17, 116-133.	0.9	24
90	Combinatorial high-throughput experimental and bioinformatic approach identifies molecular pathways linked with the sensitivity to anticancer target drugs. Oncotarget, 2015, 6, 27227-27238.	0.8	24

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91	Residual Î³H2AX foci induced by low dose x-ray radiation in bone marrow mesenchymal stem cells do not cause accelerated senescence in the progeny of irradiated cells. Aging, 2017, 9, 2397-2410.	1.4	24
92	The Evaluation of Geroprotective Effects of Selected Flavonoids in Drosophila melanogaster and Caenorhabditis elegans. Frontiers in Pharmacology, 2017, 8, 884.	1.6	23
93	Overexpression of CBS and CSE genes affects lifespan, stress resistance and locomotor activity in Drosophila melanogaster. Aging, 2018, 10, 3260-3272.	1.4	20
94	The effects of pectins on life span and stress resistance in Drosophila melanogaster. Biogerontology, 2014, 15, 113-127.	2.0	19
95	GULP1 regulates the NRF2-KEAP1 signaling axis in urothelial carcinoma. Science Signaling, 2020, 13, .	1.6	19
96	Accumulation of spontaneous Î³H2AX foci in long-term cultured mesenchymal stromal cells. Aging, 2016, 8, 3498-3506.	1.4	19
97	Non-invasive prenatal diagnostics of aneuploidy using next-generation DNA sequencing technologies, and clinical considerations. Clinical Chemistry and Laboratory Medicine, 2013, 51, 1141-1154.	1.4	18
98	Biomedical Progress Rates as New Parameters for Models of Economic Growth in Developed Countries. International Journal of Environmental Research and Public Health, 2013, 10, 5936-5952.	1.2	18
99	A systematic experimental evaluation of microRNA markers of human bladder cancer. Frontiers in Genetics, 2013, 4, 247.	1.1	18
100	A review of the biomedical innovations for healthy longevity. Aging, 2017, 9, 7-25.	1.4	18
101	Psychological aging, depression, and well-being. Aging, 2020, 12, 18765-18777.	1.4	18
102	PsychoAge and SubjAge: development of deep markers of psychological and subjective age using artificial intelligence. Aging, 2020, 12, 23548-23577.	1.4	17
103	Integrated transcriptomic and epigenomic analysis of ovarian cancer reveals epigenetically silenced GULP1. Cancer Letters, 2018, 433, 242-251.	3.2	16
104	Doublecortin-Like Kinase 1 (DCLK1) Is a Novel NOTCH Pathway Signaling Regulator in Head and Neck Squamous Cell Carcinoma. Frontiers in Oncology, 2021, 11, 677051.	1.3	16
105	Molecular pathway activation features of pediatric acute myeloid leukemia (AML) and acute lymphoblast leukemia (ALL) cells. Aging, 2016, 8, 2936-2947.	1.4	15
106	An analysis of gene expression data involving examination of signaling pathways activation reveals new insights into the mechanism of action of minoxidil topical foam in men with androgenetic alopecia. Cell Cycle, 2017, 16, 1578-1584.	1.3	15
107	Targeting focal adhesion kinase overcomes erlotinib resistance in smoke induced lung cancer by altering phosphorylation of epidermal growth factor receptor. Oncoscience, 2018, 5, 21-38.	0.9	14
108	Latest advances in aging research and drug discovery. Aging, 2019, 11, 9971-9981.	1.4	13

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109	Replicative and radiation-induced aging: a comparison of gene expression profiles. Aging, 2019, 11, 2378-2387.	1.4	13
110	Radioprotectors.org: an open database of known and predicted radioprotectors. Aging, 2020, 12, 15741-15755.	1.4	13
111	From Personalized Medicine to Personalized Science: Uniting Science and Medicine for Patient-Driven, Goal-Oriented Research. Rejuvenation Research, 2013, 16, 414-418.	0.9	12
112	DNA Comet Giemsa Staining for Conventional Bright-Field Microscopy. International Journal of Molecular Sciences, 2014, 15, 6086-6095.	1.8	12
113	Early stage of cytomegalovirus infection suppresses host microRNA expression regulation in human fibroblasts. Cell Cycle, 2016, 15, 3378-3389.	1.3	12
114	PIM1 kinase promotes gallbladder cancer cell proliferation via inhibition of proline-rich Akt substrate of 40ÂkDa (PRAS40). Journal of Cell Communication and Signaling, 2019, 13, 163-177.	1.8	12
115	Editorial: Should We Treat Aging as a Disease? Academic, Pharmaceutical, Healthcare Policy, and Pension Fund Perspectives. Frontiers in Genetics, 2016, 7, 17.	1.1	11
116	Reply to â€˜Assessing the impact of generative AI on medicinal chemistryâ€™. Nature Biotechnology, 2020, 38, 146-146.	9.4	11
117	Fetal mitochondrial <scp>DNA</scp> in maternal plasma in surrogate pregnancies: Detection and topology. Prenatal Diagnosis, 2021, 41, 368-375.	1.1	11
118	Effector TÂcell responses unleashed by regulatory TÂcell ablation exacerbate oral squamous cell carcinoma. Cell Reports Medicine, 2021, 2, 100399.	3.3	11
119	Quantifying signaling pathway activation to monitor the quality of induced pluripotent stem cells. Oncotarget, 2015, 6, 23204-23212.	0.8	11
120	Chirality as a problem of biochemical physics. Russian Journal of General Chemistry, 2007, 77, 1994-2005.	0.3	10
121	Models of Innate Neural Attractors and Their Applications for Neural Information Processing. Frontiers in Systems Neuroscience, 2016, 9, 178.	1.2	10
122	A comparative review of computational methods for pathway perturbation analysis: dynamical and topological perspectives. Molecular BioSystems, 2017, 13, 1692-1704.	2.9	10
123	Increased Pace of Aging in COVID-Related Mortality. Life, 2021, 11, 730.	1.1	10
124	Longevity Foundation: Perspective on Decentralized Autonomous Organization for Special-Purpose Financing. IEEE Access, 2022, 10, 33048-33058.	2.6	10
125	Aging Chart: a community resource for rapid exploratory pathway analysis of age-related processes. Nucleic Acids Research, 2016, 44, D894-D899.	6.5	9
126	On Multilabel Classification Methods of Incompletely Labeled Biomedical Text Data. Computational and Mathematical Methods in Medicine, 2014, 2014, 1-11.	0.7	8

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127	Screening and personalizing nootropic drugs and cognitive modulator regimens in silico. Frontiers in Systems Neuroscience, 2015, 9, 4.	1.2	8
128	The Neuronal Overexpression of Gclc in Drosophila melanogaster Induces Life Extension With Longevity-Associated Transcriptomic Changes in the Thorax. Frontiers in Genetics, 2019, 10, 149.	1.1	8
129	The inherent challenges of classifying senescence. Science, 2020, 368, 595-595.	6.0	8
130	Cancer megafunds with in silico and in vitro validation: accelerating cancer drug discovery via financial engineering without financial crisis. Oncotarget, 2016, 7, 57671-57678.	0.8	8
131	Evaluating the impact of recent advances in biomedical sciences and the possible mortality decreases on the future of health care and Social Security in the United States. Pensions, 2012, 17, 241-251.	0.0	7
132	Longevity expectations in the pension fund, insurance, and employee benefits industries. Psychology Research and Behavior Management, 2015, 8, 27.	1.3	7
133	Medicinal Chemists versus Machines Challenge: What Will It Take to Adopt and Advance Artificial Intelligence for Drug Discovery?. Journal of Chemical Information and Modeling, 2020, 60, 2657-2659.	2.5	7
134	COVIDomic: A multi-modal cloud-based platform for identification of risk factors associated with COVID-19 severity. PLoS Computational Biology, 2021, 17, e1009183.	1.5	7
135	The Advent of Human Life Data Economics. Trends in Molecular Medicine, 2019, 25, 566-570.	3.5	6
136	Exhaustive data mining comparison of the effects of low doses of ionizing radiation, formaldehyde and dioxins. BMC Genomics, 2014, 15, S5.	1.2	5
137	Deep Integrated Biomarkers of Aging. Healthy Ageing and Longevity, 2019, , 281-291.	0.2	5
138	Optimizing future well-being with artificial intelligence: self-organizing maps (SOMs) for the identification of islands of emotional stability. Aging, 2022, 14, 4935-4958.	1.4	5
139	Effects of unpaired 1 gene overexpression on the lifespan of Drosophila melanogaster. BMC Systems Biology, 2019, 13, 16.	3.0	4
140	Evaluation of the geroprotective effects of withaferin A in Drosophila melanogaster. Aging, 2021, 13, 1817-1841.	1.4	4
141	Role of the NOTCH Signaling Pathway in Head and Neck Cancer. Current Cancer Research, 2018, , 229-248.	0.2	4
142	The Evolution of the Charge Density Distribution Function for Spherically Symmetric System with Zero Initial Conditions. World Journal of Condensed Matter Physics, 2014, 04, 33-38.	1.1	4
143	Inhibitors of mTOR in aging and cancer. Oncotarget, 2015, 6, 45010-45011.	0.8	4
144	Meeting Report: Aging Research and Drug Discovery. Aging, 2022, 14, 530-543.	1.4	4

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145	The Case of Nonzero Initial Conditions in the Evolution of the Charge Density Distribution Function for a Spherically Symmetric System. Journal of Applied Mathematics and Physics, 2014, 02, 495-502.	0.2	3
146	Potentialities of MicroRNA Diagnosis in Patients with Bladder Cancer. Bulletin of Experimental Biology and Medicine, 2017, 164, 106-108.	0.3	2
147	Advanced pathological ageing should be represented in the ICD. The Lancet Healthy Longevity, 2022, 3, e12.	2.0	2
148	Adapting Blood DNA Methylation Aging Clocks for Use in Saliva Samples With Cell-type Deconvolution. Frontiers in Aging, 2021, 2, .	1.2	1
149	AI in Longevity Medicine. , 2021, , 1-13.		1
150	Interview with Alex Zhavoronkov, PhD. Rejuvenation Research, 2015, 18, 366-370.	0.9	0
151	AI in Longevity Medicine. , 2022, , 1157-1168.		0