Alex Zhavoronkov

List of Publications by Citations

148 papers	6,044 citations	41 h-index	73 g-index
160 ext. papers	8,192 ext. citations	6.4 avg, IF	6.32 L-index

#	Paper	IF	Citations
148	Applications of Deep Learning in Biomedicine. *Molecular Pharmaceutics*, **2016**, 13, 1445-54	5.6	368
147	Deep learning enables rapid identification of potent DDR1 kinase inhibitors. *Nature Biotechnology*, **2019**, 37, 1038-1040	44.5	338
146	Deep Learning Applications for Predicting Pharmacological Properties of Drugs and Drug Repurposing Using Transcriptomic Data. *Molecular Pharmaceutics*, **2016**, 13, 2524-30	5.6	264
145	The role of DNA damage and repair in aging through the prism of Koch-like criteria. *Ageing Research Reviews*, **2013**, 12, 661-84	12	225
144	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	5.6	224
143	Converging blockchain and next-generation artificial intelligence technologies to decentralize and accelerate biomedical research and healthcare. *Oncotarget*, **2018**, 9, 5665-5690	3.3	215
142	Deep biomarkers of human aging: Application of deep neural networks to biomarker development. *Aging*, **2016**, 8, 1021-33	5.6	171
141	The cornucopia of meaningful leads: Applying deep adversarial autoencoders for new molecule development in oncology. *Oncotarget*, **2017**, 8, 10883-10890	3.3	158
140	Reinforced Adversarial Neural Computer for de Novo Molecular Design. *Journal of Chemical Information and Modeling*, **2018**, 58, 1194-1204	6.1	151
139	Bifunctional immune checkpoint-targeted antibody-ligand traps that simultaneously disable TGF enhance the efficacy of cancer immunotherapy. *Nature Communications*, **2018**, 9, 741	17.4	138
138	Genetics and epigenetics of aging and longevity. *Cell Cycle*, **2014**, 13, 1063-77	4.7	111
137	Gadd45 proteins: relevance to aging, longevity and age-related pathologies. *Ageing Research Reviews*, **2012**, 11, 51-66	12	99
136	Entangled Conditional Adversarial Autoencoder for de Novo Drug Discovery. *Molecular Pharmaceutics*, **2018**, 15, 4398-4405	5.6	99
135	Design of efficient computational workflows for in silico drug repurposing. *Drug Discovery Today*, **2017**, 22, 210-222	8.8	94
134	Adversarial Threshold Neural Computer for Molecular de Novo Design. *Molecular Pharmaceutics*, **2018**, 15, 4386-4397	5.6	89
133	Brain-computer interface based on generation of visual images. *PLoS ONE*, **2011**, 6, e20674	3.7	82
132	Molecular Sets (MOSES): A Benchmarking Platform for Molecular Generation Models. *Frontiers in Pharmacology*, **2020**, 11, 565644	5.6	82

131	Molecular aspects of development and regulation of endometriosis. *Reproductive Biology and Endocrinology*, **2014**, 12, 50	5	72
130	The DrugAge database of aging-related drugs. *Aging Cell*, **2017**, 16, 594-597	9.9	71
129	In silico Pathway Activation Network Decomposition Analysis (iPANDA) as a method for biomarker development. *Nature Communications*, **2016**, 7, 13427	17.4	70
128	A role for G-CSF and GM-CSF in nonmyeloid cancers. *Cancer Medicine*, **2014**, 3, 737-46	4.8	70
127	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	6.4	69
126	Machine Learning on Human Muscle Transcriptomic Data for Biomarker Discovery and Tissue-Specific Drug Target Identification. *Frontiers in Genetics*, **2018**, 9, 242	4.5	68
125	Signaling pathways activation profiles make better markers of cancer than expression of individual genes. *Oncotarget*, **2014**, 5, 10198-205	3.3	65
124	Geroprotectors.org: a new, structured and curated database of current therapeutic interventions in aging and age-related disease. *Aging*, **2015**, 7, 616-28	5.6	65
123	Developing criteria for evaluation of geroprotectors as a key stage toward translation to the clinic. *Aging Cell*, **2016**, 15, 407-15	9.9	63
122	Artificial intelligence for aging and longevity research: Recent advances and perspectives. *Ageing Research Reviews*, **2019**, 49, 49-66	12	63
121	Oncofinder, a new method for the analysis of intracellular signaling pathway activation using transcriptomic data. *Frontiers in Genetics*, **2014**, 5, 55	4.5	60
120	Molecular functions of human endogenous retroviruses in health and disease. *Cellular and Molecular Life Sciences*, **2015**, 72, 3653-75	10.3	57
119	Towards natural mimetics of metformin and rapamycin. *Aging*, **2017**, 9, 2245-2268	5.6	57
118	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, 19472-7	11.5	55
117	Geroprotective and senoremediative strategies to reduce the comorbidity, infection rates, severity, and lethality in gerophilic and gerolavic infections. *Aging*, **2020**, 12, 6492-6510	5.6	52
116	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	5.6	51
115	Fucoxanthin increases lifespan of Drosophila melanogaster and Caenorhabditis elegans. *Pharmacological Research*, **2015**, 100, 228-41	10.2	47
114	The OncoFinder algorithm for minimizing the errors introduced by the high-throughput methods of transcriptome analysis. *Frontiers in Molecular Biosciences*, **2014**, 1, 8	5.6	46

113	Lifespan and Stress Resistance in Drosophila with Overexpressed DNA Repair Genes. *Scientific Reports*, **2015**, 5, 15299	4.9	45
112	Human Gut Microbiome Aging Clock Based on Taxonomic Profiling and Deep Learning. *IScience*, **2020**, 23, 101199	6.1	44
111	In search for geroprotectors: in silico screening and in vitro validation of signalome-level mimetics of young healthy state. *Aging*, **2016**, 8, 2127-2152	5.6	43
110	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	12.9	41
109	A method for predicting target drug efficiency in cancer based on the analysis of signaling pathway activation. *Oncotarget*, **2015**, 6, 29347-56	3.3	41
108	3D Molecular Representations Based on the Wave Transform for Convolutional Neural Networks. *Molecular Pharmaceutics*, **2018**, 15, 4378-4385	5.6	40
107	Low doses of X-rays induce prolonged and ATM-independent persistence of γH2AX foci in human gingival mesenchymal stem cells. *Oncotarget*, **2015**, 6, 27275-87	3.3	40
106	Signaling pathway cloud regulation for in silico screening and ranking of the potential geroprotective drugs. *Frontiers in Genetics*, **2014**, 5, 49	4.5	39
105	Influence of non-steroidal anti-inflammatory drugs on Drosophila melanogaster longevity. *Oncotarget*, **2015**, 6, 19428-44	3.3	39
104	Vive la radiorésistance!: converging research in radiobiology and biogerontology to enhance human radioresistance for deep space exploration and colonization. *Oncotarget*, **2018**, 9, 14692-14722	3.3	38
103	Pathway activation profiling reveals new insights into age-related macular degeneration and provides avenues for therapeutic interventions. *Aging*, **2014**, 6, 1064-75	5.6	37
102	Pathway activation strength is a novel independent prognostic biomarker for cetuximab sensitivity in colorectal cancer patients. *Human Genome Variation*, **2015**, 2, 15009	1.8	36
101	Novel robust biomarkers for human bladder cancer based on activation of intracellular signaling pathways. *Oncotarget*, **2014**, 5, 9022-32	3.3	36
100	PhotoAgeClock: deep learning algorithms for development of non-invasive visual biomarkers of aging. *Aging*, **2018**, 10, 3249-3259	5.6	36
99	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	4.7	35
98	Differential expression of alternatively spliced transcripts related to energy metabolism in colorectal cancer. *BMC Genomics*, **2016**, 17, 1011	4.5	35
97	Data aggregation at the level of molecular pathways improves stability of experimental transcriptomic and proteomic data. *Cell Cycle*, **2017**, 16, 1810-1823	4.7	35
96	Artificial intelligence, drug repurposing and peer review. *Nature Biotechnology*, **2020**, 38, 1127-1131	44.5	35

95	Blood Biochemistry Analysis to Detect Smoking Status and Quantify Accelerated Aging in Smokers. *Scientific Reports*, **2019**, 9, 142	4.9	35
94	Biohorology and biomarkers of aging: Current state-of-the-art, challenges and opportunities. *Ageing Research Reviews*, **2020**, 60, 101050	12	33
93	Common pathway signature in lung and liver fibrosis. *Cell Cycle*, **2016**, 15, 1667-73	4.7	33
92	Classifying aging as a disease in the context of ICD-11. *Frontiers in Genetics*, **2015**, 6, 326	4.5	33
91	Immune profiles in primary squamous cell carcinoma of the head and neck. *Oral Oncology*, **2019**, 96, 77-88	4.4	32
90	The role of D-GADD45 in oxidative, thermal and genotoxic stress resistance. *Cell Cycle*, **2012**, 11, 4222-41	4.7	32
89	Will Artificial Intelligence for Drug Discovery Impact Clinical Pharmacology?. *Clinical Pharmacology and Therapeutics*, **2020**, 107, 780-785	6.1	31
88	The Advent of Generative Chemistry. *ACS Medicinal Chemistry Letters*, **2020**, 11, 1496-1505	4.3	30
87	Characteristic patterns of microRNA expression in human bladder cancer. *Frontiers in Genetics*, **2012**, 3, 310	4.5	29
86	Human microbiome aging clocks based on deep learning and tandem of permutation feature importance and accumulated local effects		29
85	Molecular pathway activation features linked with transition from normal skin to primary and metastatic melanomas in human. *Oncotarget*, **2016**, 7, 656-70	3.3	28
84	Pro-fibrotic pathway activation in trabecular meshwork and lamina cribrosa is the main driving force of glaucoma. *Cell Cycle*, **2016**, 15, 1643-52	4.7	28
83	Methods for structuring scientific knowledge from many areas related to aging research. *PLoS ONE*, **2011**, 6, e22597	3.7	27
82	Interactome analysis of myeloid-derived suppressor cells in murine models of colon and breast cancer. *Oncotarget*, **2014**, 5, 11345-53	3.3	27
81	Effect of lentivirus-mediated shRNA inactivation of HK1, HK2, and HK3 genes in colorectal cancer and melanoma cells. *BMC Genetics*, **2016**, 17, 156	2.6	26
80	Deep Aging Clocks: The Emergence of AI-Based Biomarkers of Aging and Longevity. *Trends in Pharmacological Sciences*, **2019**, 40, 546-549	13.2	23
79	H2AX, 53BP1 and Rad51 protein foci changes in mesenchymal stem cells during prolonged X-ray irradiation. *Oncotarget*, **2017**, 8, 64317-64329	3.3	23
78	Potential COVID-2019 3C-like Protease Inhibitors Designed Using Generative Deep Learning Approaches		23

77	analysis of pathways activation landscape in oral squamous cell carcinoma and oral leukoplakia. *Cell Death Discovery*, **2017**, 3, 17022	6.9	22
76	Activation of homologous recombination DNA repair in human skin fibroblasts continuously exposed to X-ray radiation. *Oncotarget*, **2015**, 6, 26876-85	3.3	22
75	Effects of N-acetyl-L-cysteine on lifespan, locomotor activity and stress-resistance of 3 species with different lifespans. *Aging*, **2018**, 10, 2428-2458	5.6	22
74	Combinatorial high-throughput experimental and bioinformatic approach identifies molecular pathways linked with the sensitivity to anticancer target drugs. *Oncotarget*, **2015**, 6, 27227-38	3.3	19
73	Potential therapeutic approaches for modulating expression and accumulation of defective lamin A in laminopathies and age-related diseases. *Journal of Molecular Medicine*, **2012**, 90, 1361-89	5.5	19
72	Large-scale profiling of signalling pathways reveals an asthma specific signature in bronchial smooth muscle cells. *Oncotarget*, **2016**, 7, 25150-61	3.3	19
71	A review of the biomedical innovations for healthy longevity. *Aging*, **2017**, 9, 7-25	5.6	18
70	Use of deep neural network ensembles to identify embryonic-fetal transition markers: repression of in embryonic and cancer cells. *Oncotarget*, **2018**, 9, 7796-7811	3.3	18
69	Transcriptome Analysis of Long-lived Drosophila melanogaster E(z) Mutants Sheds Light on the Molecular Mechanisms of Longevity. *Scientific Reports*, **2019**, 9, 9151	4.9	18
68	Mineralization of the connective tissue: a complex molecular process leading to age-related loss of function. *Rejuvenation Research*, **2014**, 17, 116-33	2.6	18
67	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, 689-98	4.7	18
66	New bioinformatic tool for quick identification of functionally relevant endogenous retroviral inserts in human genome. *Cell Cycle*, **2015**, 14, 1476-84	4.7	17
65	Identification of Novel Antibacterials Using Machine Learning Techniques. *Frontiers in Pharmacology*, **2019**, 10, 913	5.6	17
64	A systematic experimental evaluation of microRNA markers of human bladder cancer. *Frontiers in Genetics*, **2013**, 4, 247	4.5	17
63	Residual H2AX 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	5.6	17
62	Deep biomarkers of aging and longevity: from research to applications. *Aging*, **2019**, 11, 10771-10780	5.6	16
61	Aging and drug discovery. *Aging*, **2018**, 10, 3079-3088	5.6	16
60	The effects of pectins on life span and stress resistance in Drosophila melanogaster. *Biogerontology* , **2014**, 15, 113-27	4.5	15

59	Biomedical progress rates as new parameters for models of economic growth in developed countries. *International Journal of Environmental Research and Public Health*, **2013**, 10, 5936-52	4.6	15
58	Accumulation of spontaneous H2AX foci in long-term cultured mesenchymal stromal cells. *Aging*, **2016**, 8, 3498-3506	5.6	15
57	Potential Non-Covalent SARS-CoV-2 3C-like Protease Inhibitors Designed Using Generative Deep Learning Approaches and Reviewed by Human Medicinal Chemist in Virtual Reality		15
56	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	9.5	15
55	Overexpression of and genes affects lifespan, stress resistance and locomotor activity in. *Aging*, **2018**, 10, 3260-3272	5.6	14
54	Potential 2019-nCoV 3C-like Protease Inhibitors Designed Using Generative Deep Learning Approaches		14
53	Non-invasive prenatal diagnostics of aneuploidy using next-generation DNA sequencing technologies, and clinical considerations. *Clinical Chemistry and Laboratory Medicine*, **2013**, 51, 1141-54	5.9	13
52	Molecular pathway activation features of pediatric acute myeloid leukemia (AML) and acute lymphoblast leukemia (ALL) cells. *Aging*, **2016**, 8, 2936-2947	5.6	13
51	From personalized medicine to personalized science: uniting science and medicine for patient-driven, goal-oriented research. *Rejuvenation Research*, **2013**, 16, 414-8	2.6	12
50	Integrated transcriptomic and epigenomic analysis of ovarian cancer reveals epigenetically silenced GULP1. *Cancer Letters*, **2018**, 433, 242-251	9.9	12
49	ARDD 2020: from aging mechanisms to interventions. *Aging*, **2020**, 12, 24484-24503	5.6	11
48	Integrated deep learned transcriptomic and structure-based predictor of clinical trials outcomes		11
47	Early stage of cytomegalovirus infection suppresses host microRNA expression regulation in human fibroblasts. *Cell Cycle*, **2016**, 15, 3378-3389	4.7	10
46	The Evaluation of Geroprotective Effects of Selected Flavonoids in and. *Frontiers in Pharmacology*, **2017**, 8, 884	5.6	10
45	DNA comet Giemsa staining for conventional bright-field microscopy. *International Journal of Molecular Sciences*, **2014**, 15, 6086-95	6.3	10
44	Quantifying signaling pathway activation to monitor the quality of induced pluripotent stem cells. *Oncotarget*, **2015**, 6, 23204-12	3.3	10
43	DeepMAge: A Methylation Aging Clock Developed with Deep Learning **2021**, 12, 1252-1262		10
42	Chirality as a problem of biochemical physics. *Russian Journal of General Chemistry*, **2007**, 77, 1994-2005	0.7	9

41	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	0.8	9
40	PIM1 kinase promotes gallbladder cancer cell proliferation via inhibition of proline-rich Akt substrate of 40 kDa (PRAS40). *Journal of Cell Communication and Signaling*, **2019**, 13, 163-177	5.2	8
39	Reply to "Assessing the impact of generative AI on medicinal chemistry". *Nature Biotechnology*, **2020**, 38, 146	44.5	8
38	Aging Chart: a community resource for rapid exploratory pathway analysis of age-related processes. *Nucleic Acids Research*, **2016**, 44, D894-9	20.1	8
37	On multilabel classification methods of incompletely labeled biomedical text data. *Computational and Mathematical Methods in Medicine*, **2014**, 2014, 781807	2.8	8
36	Replicative and radiation-induced aging: a comparison of gene expression profiles. *Aging*, **2019**, 11, 2378-2387	5.6	8
35	GULP1 regulates the NRF2-KEAP1 signaling axis in urothelial carcinoma. *Science Signaling*, **2020**, 13,	8.8	8
34	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	4.7	7
33	Screening and personalizing nootropic drugs and cognitive modulator regimens in silico. *Frontiers in Systems Neuroscience*, **2015**, 9, 4	3.5	7
32	Models of Innate Neural Attractors and Their Applications for Neural Information Processing. *Frontiers in Systems Neuroscience*, **2015**, 9, 178	3.5	7
31	Psychological aging, depression, and well-being. *Aging*, **2020**, 12, 18765-18777	5.6	6
30	Radioprotectors.org: an open database of known and predicted radioprotectors. *Aging*, **2020**, 12, 15741-15756	5.6	6
29	Increased Pace of Aging in COVID-Related Mortality. *Life*, **2021**, 11,	3	6
28	Latest advances in aging research and drug discovery. *Aging*, **2019**, 11, 9971-9981	5.6	6
27	Fetal mitochondrial DNA in maternal plasma in surrogate pregnancies: Detection and topology. *Prenatal Diagnosis*, **2021**, 41, 368-375	3.2	6
26	The Neuronal Overexpression of in Induces Life Extension With Longevity-Associated Transcriptomic Changes in the Thorax. *Frontiers in Genetics*, **2019**, 10, 149	4.5	5
25	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	6.1	5
24	Exhaustive data mining comparison of the effects of low doses of ionizing radiation, formaldehyde and dioxins. *BMC Genomics*, **2014**, 15 Suppl 12, S5	4.5	5

23	A comparative review of computational methods for pathway perturbation analysis: dynamical and topological perspectives. *Molecular BioSystems*, **2017**, 13, 1692-1704		5
22	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		5
21	The Advent of Human Life Data Economics. *Trends in Molecular Medicine*, **2019**, 25, 566-570	11.5	4
20	Cancer megafunds with in silico and in vitro validation: accelerating cancer drug discovery via financial engineering without financial crisis. *Oncotarget*, **2016**, 7, 57671-57678	3.3	4
19	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	0.5	4
18	The inherent challenges of classifying senescence. *Science*, **2020**, 368, 595	33.3	3
17	Longevity expectations in the pension fund, insurance, and employee benefits industries. *Psychology Research and Behavior Management*, **2015**, 8, 27-39	3.8	3
16	PsychoAge and SubjAge: development of deep markers of psychological and subjective age using artificial intelligence. *Aging*, **2020**, 12, 23548-23577	5.6	3
15	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	0.3	3
14	Testing for batch effect through age predictors		3
13	Deep Integrated Biomarkers of Aging. *Healthy Ageing and Longevity*, **2019**, 281-291	0.5	3
12	Evaluation of the geroprotective effects of withaferin A in. *Aging*, **2021**, 13, 1817-1841	5.6	3
11	Effects of unpaired 1 gene overexpression on the lifespan of Drosophila melanogaster. *BMC Systems Biology*, **2019**, 13, 16	3.5	2
10	Potentialities of MicroRNA Diagnosis in Patients with Bladder Cancer. *Bulletin of Experimental Biology and Medicine*, **2017**, 164, 106-108	0.8	2
9	COVIDomic: A multi-modal cloud-based platform for identification of risk factors associated with COVID-19 severity. *PLoS Computational Biology*, **2021**, 17, e1009183	5	2
8	Effector T´cell responses unleashed by regulatory T´cell ablation exacerbate oral squamous cell carcinoma. *Cell Reports Medicine*, **2021**, 2, 100399	18	2
7	Role of the NOTCH Signaling Pathway in Head and Neck Cancer. *Current Cancer Research*, **2018**, 229-248	0.2	1
6	Advanced pathological ageing should be represented in the ICD. *The Lancet Healthy Longevity*, **2022**, 3, e12	9.5	0

5	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	5.3	0
4	Longevity Foundation: Perspective on Decentralized Autonomous Organization for Special-Purpose Financing. *IEEE Access*, **2022**, 10, 33048-33058	3.5	0
3	Interview with Alex Zhavoronkov, PhD. *Rejuvenation Research*, **2015**, 18, 366-70	2.6	
2	AI in Longevity Medicine **2021**, 1-13		
1	AI in Longevity Medicine **2022**, 1157-1168		