Dr. Vladimir A. Ivanisenko is the head of the Laboratory of Computational Proteomics of the Institute of Cytology and Genetics of the Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia. Area of specialization is bioinformatics. He published 51 articles in 5 years.

The area of research has two main directions: (1) automatic knowledge extraction from the texts of scientific publications, patents and factual databases and (2) computer analysis of the structural and functional organization of proteins, molecular modeling and computer design of biologically active compounds with a given activity. He is the author of ANDSystem, a software and information system for intellectual analysis of texts of scientific publications, designed for automatic knowledge extraction and reconstruction of gene networks (Ivanisenko et al, 2019); under his leadership, an intelligent information retrieval system for scientific literature ANDDigest was created (Ivanisenko et al., 2020); SOLANUM TUBEROSUM knowledge base has been created containing molecular genetic data on potatoes, including gene networks on a full genome scale, as well as information on markers, breeding traits and consumer properties of potatoes, diseases, pathogens and pests, potato protection products, extracted using methods AI from scientific publications, patents and databases (Saik et al., 2017, Ivanisenko et al., 2018, Demenkov et al., 2019); a new approach has been developed to study the conformational properties of proteins based on the analysis of hydrogen bond networks in the trajectories of molecular dynamics and macroscale dynamics reproduced using elastic models (Alemasov et al, 2021, Alemasov et al, 2020, Alemasov et al, 2019, Alemasov et al, 2018, Alemasov et al, 2018). Computer design and molecular modeling of ADP and morpholinonucleoside conjugates as a new class of PARP-1, PARP-2 and PARP-3 inhibitors was carried out (Sherstyuk , Ivanisenko N et al., 2020); using computer rational design, for the first time in the world, low-molecular chemical compounds and peptides capable of inducing the external signaling pathway of apoptosis have been created (Hillert et al, Oncogene 2020, Hillert et al, Cell Death Differ 2020; Seyrek et al, 2020, Ivanisenko N. et al, 2019).

Selected publications

1. Alemasov NA, Timofeev VS, Ivanisenko NV, Kolchanov NA, Ivanisenko VA. Computer analysis of the relation between hydrogen bond stability in SOD1 mutants and the survival time of amyotrophic lateral sclerosis patients. J Mol Graph Model. 2022 Jan;110:108026. IF 2.518, Q2, doi: 10.1016/j.jmgm.2021.108026

2. Rogachev AD, Alemasov NA, Ivanisenko VA, Ivanisenko NV, Gaisler EV, Oleshko OS, Cheresiz SV, Mishinov SV, Stupak VV, Pokrovsky AG. Correlation of Metabolic Profiles of Plasma and Cerebrospinal Fluid of High-Grade Glioma Patients. Metabolites. 2021 Feb 25;11(3):133. IF 4.932, Q2, doi: 10.3390/metabo11030133.

3. Hillert LK, Ivanisenko NV, Busse D, Espe J, König C, Peltek SE, Kolchanov NA, Ivanisenko VA, Lavrik IN. Dissecting DISC regulation via pharmacological targeting of caspase-8/c-FLIPL

heterodimer. Cell Death Differ. 2020 Jul;27(7):2117-2130. IF 10.717, Q1, doi: 10.1038/s41418-020-0489-0
4. König C, Hillert-Richter LK, Ivanisenko NV, Ivanisenko VA, Lavrik IN. Pharmacological targeting of c-FLIPL and Bcl-2 family members promotes apoptosis in CD95L-resistant cells. Sci Rep. 2020 Nov 30;10(1):20823. IF 4.379 (5 year - 5.133), Q1, doi: 10.1038/s41598-020-76079-1.
5. Ivanisenko, T.V., Saik, O.V., Demenkov, P.S., Ivanisenko N.V., Savostianov A.N., Ivanisenko V.A. ANDDigest: a new web-based module of ANDSystem for the search of knowledge in the scientific literature. BMC Bioinformatics 21, 228 (2020). IF 3.24, Q1, https://doi.org/10.1186/s12859-020-03557-8.
6. Alemasov NA, Ivanisenko NV, Ivanisenko VA. Learning the changes of barnase mutants thermostability from structural fluctuations obtained using anisotropic network modeling. J Mol Graph Model. 2020 Jun;97:107572. IF 2.518, Q2, doi: 10.1016/j.jmgm.2020.107572
7. Hillert LK, Ivanisenko NV, Espe J, König C, Ivanisenko VA, Kähne T, Lavrik IN. Long and short isoforms of c-FLIP act as control checkpoints of DED filament assembly. Oncogene. 2020 Feb;39(8):1756-1772. IF 7.971, Q1, doi: 10.1038/s41388-019-1100-3.
8. Ivanisenko NV, Seyrek K, Kolchanov NA, Ivanisenko VA, Lavrik IN. The role of death domain proteins in host response upon SARS-CoV-2 infection: modulation of programmed cell death and translational applications. Cell Death Discov. 2020 Oct 10;6:101. IF 5,241 (5 year 5,302), Q2, doi: 10.1038/s41420-020-00331-w.
9. Sherstyuk, Y.V., Ivanisenko, N.V., Zakharenko, A.L., Sukhanova, M.V., Peshkov, R.Y., Eltsov, I.V., Kutuzov, M.M., Kurgina, T.A., Belousova, E.A., Ivanisenko, V.A., Lavrik, O.I., Silnikov, V.N., Abramova, T.V. Design, synthesis and molecular modeling study of conjugates of ADP and morpholino nucleosides as a novel class of inhibitors of PARP-1, PARP-2 and PARP-3 (2020) International Journal of Molecular Sciences, 21 (1), art. no. 214. IF 5.92, Q1, DOI: 10.3390/ijms21010214
10. Zolotareva, O., Saik, O.V., Königs, C., Bragina, E.Y., Goncharova, I.A., Freidin, M.B., Dosenko, V.E., Ivanisenko, V.A., Hofestädt, R. Comorbidity of asthma and hypertension may be mediated by shared genetic dysregulation and drug side effects (2019) Scientific Reports, 9 (1), art. no. 16302. IF 4.379 (5 year - 5.133), Q1, DOI: 10.1038/s41598-019-52762-w
11. Ivanisenko, V.A., Demenkov, P.S., Ivanisenko, T.V., Mishchenko, E.L., Saik, O.V. A new version of the ANDSystem tool for automatic extraction of knowledge from scientific publications with expanded functionality for reconstruction of associative gene networks by considering tissue-specific gene expression (2019) BMC Bioinformatics, 20, art. no. 34. IF 3.24, Q1, DOI: 10.1186/s12859-018-2567-6 (Q1)
12. Ivanisenko, N.V., Buchbinder, J.H., Espe, J., Richter, M., Bollmann, M., Hillert, L.K., Ivanisenko, V.A., Lavrik, I.N. Delineating the role of c-FLIP/NEMO interaction in the CD95 network via rational design of molecular probes (2019) BMC Genomics, 20, art. no. 293. IF 3.969, Q1, DOI: 10.1186/s12864-019-5539-y
13. Saik OV, Nimaev VV, Usmonov DB, Demenkov PS, Ivanisenko TV, Lavrik IN, Ivanisenko VA. Prioritization of genes involved in endothelial cell apoptosis by their implication in lymphedema using an analysis of associative gene networks with ANDSystem. BMC Med Genomics. 2019 Mar 13;12(Suppl 2):47. IF 3.193, Q2, doi: 10.1186/s12920-019-0492-9.
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