

CURRICULUM VITAE



Name:

Andrey V. Vasin

Academic degree:

PhD, DSc

Date and place of birth:

04/04/1980, St-Petersburg (ex-Leningrad), Russia

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Position title and affiliation:

- Peter the Great St.Petersburg Polytechnic University, Institute of Biomedical Systems and Biotechnologies, Professor, acting Director
- Smorodintsev Research Institute of Influenza, Head of the Molecular Biology of Viruses Department; Head of WHO National Influenza Centre of Russia
- Saint Petersburg State Chemical Pharmaceutical University, Head of the Center for Biophysical Research in Pharmacy

Education:

1997-2003	St-Petersburg State Polytechnic University (St.-Petersburg, Russia), MS (physics/biophysics)
2003-2005	St-Petersburg State Polytechnic University (St.-Petersburg, Russia), PhD (biochemistry)
2016-2017	St. Petersburg State University of Economics (St.-Petersburg, Russia), Management of healthcare organizations diploma

Professional experience:

2000-2005	Laboratory assistant, junior investigator, Department of Molecular Genetics, Research Institute of Experimental Medicine (St.-Petersburg, Russia)
2005-2006	Junior Research Fellow, Laboratory of Molecular Virology and Genetic Engineering, Research Institute of Influenza (St.-Petersburg, Russia)
2006-2010	Senior Staff Scientist, Laboratory of Molecular Virology and Genetic Engineering, Research Institute of Influenza (St.-Petersburg, Russia)

2009-2016	Associate Professor, Department of Biophysics, Faculty of Physics and Mechanics, St.Petersburg State Polytechnic University (St.-Petersburg, Russia)
2010-2016	Head of Laboratory of Structural and Functional Proteomics, Research Institute of Influenza (St.-Petersburg, Russia)
2016-2019	Head of the Joint Department (with Smorodintsev Research Institute of Influenza) of Molecular biology, St.Petersburg State Polytechnic University (St.-Petersburg, Russia)
2016-2019	Director, Smorodintsev Research Institute of Influenza (St.-Petersburg, Russia)
2016-present	Head of the Department of Molecular Biology of Viruses, Smorodintsev Research Institute of Influenza under the Ministry of Health of the Russian Federation (St.-Petersburg, Russia)
2018-present	Head of the Center for Biophysical Research in Pharmacy, Saint Petersburg State Chemical Pharmaceutical University (St.-Petersburg, Russia)
2019-present	Professor, acting Director of the Institute of Biomedical Systems and Biotechnologies in Peter the Great St.Petersburg Polytechnic University (St.-Petersburg, Russia)

Scientific interests:

Development, pre-clinical and clinical evaluations of antiviral drugs and vaccines; development of molecular and immunological methods of diagnostics of viral infections; influenza and other respiratory viruses surveillance; saRNA therapy and vaccines; phylogenetic analysis of viruses; molecular and systems virology; molecular and cellular biology, molecular biotechnology

Honors and memberships:

2019-present	WHO Working Group on Influenza Preparedness and Response (WG-IPR) member
2019-present	Director of Global Virus Network Center (Russian Center at Smorodintsev Research Institute of Influenza)
2010-present	Member of the Russian Biochemical Society FEBS
2019-present	Head of the St-Petersburg branch the Russian Biochemical Society
2019-2020	Co-Chair, Working Group of Ministry of Health of the Russian Federation on the research program formation in microbiology
2020-present	Member of the Dissertation Council (on virology) in Smorodintsev Research Institute of Influenza
2019-present	Chairman of the Scientific Council of the Institute of Biomedical Systems and Biotechnologies of Peter the Great St-Petersburg Polytechnic University
2018-present	Member of the Scientific and Technical Council "National Immunobiological Company"

2016-2019

Chairman of the Scientific Council of Smorodintsev Research Institute of Influenza

Funding

- Ministry of Education and Science of the Russian Federation "Molecular-biological aspects of the development of neurological complications of influenza", 2012-2013
- Ministry of Education and Science of the Russian Federation "System analysis of molecular-genetic mechanisms of NS gene mediated pathogenicity of influenza A virus", 2012-2013, supervisor
- Ministry of Health of the Russian Federation "Development of highly specific and highly sensitive methods of diagnosis of viral infections and evaluation of the immune status", 2012-2014
- Ministry of Health of the Russian Federation "The molecular genetics of viruses and pathogenesis of influenza infection", 2012-2014
- Ministry of Health of the Russian Federation "Development of technology for recombinant monoclonal antibodies for influenza rapid diagnostics application, 2013-2015
- Russian Science Foundation "Fundamental approaches to solving the problem of high mortality from sepsis: combinatorial organic chemistry in combination with an expanded panel of medicinal targets, 2014-2016
- Russian Science Foundation "Cellular microRNAs - new molecular targets for the therapy of severe viral infections", 2015-2017
- Ministry of Health of the Russian Federation "Study of molecular genetic mechanisms of interaction between the influenza virus and infected cells using methods of systemic virology", 2015-2017
- Ministry of Education and Science of the Russian Federation "Preclinical studies of a new antiviral peptide - an inhibitor of human influenza A virus replication", 2016-2018
- Ministry of Education and Science of the Russian Federation "Development of a multi-parameter diagnostic complex TORI-test for detection and prognosis of severity of acute respiratory infections, 2017-2020
- Ministry of Health of the Russian Federation "RNA interference therapies for influenza infection", 2018-2020
- Ministry of Health of the Russian Federation/Federal Medical Biological Agency "Research and preclinical studies of the mucosal vector vaccine for the prevention of respiratory syncytial viral infection", 2019-present
- Ministry of Health of the Russian Federation/Federal Medical Biological Agency "Development and preclinical studies of the azoloazine derivative combination drug for the treatment of viral respiratory infections complicated by secondary bacterial pneumonia", 2019-present
- Russian Science Foundation "Cellular exosomes in influenza A virus infection: role in pathogenesis and potential of the therapeutic use", 2020-present

- Ministry of Education and Science of the Russian Federation "The study of IFN λ -mediated immune response mechanisms in respiratory infections", 2020-present

Peer-reviewed publications

- [1] N. E. Gyulikhandanova, O. V. Voronina, V. S. Babich, A. V. Vasin, and L. V. Puchkova, "The putative mechanisms determining ceruloplasmin gene expression in mammals," *Eur. J. Hum. Genet.*, 2002.
- [2] L. V. Puchkova et al., "Copper nutrition and copper metabolism in rat newborns," in *Metal Ions in Biology and Medicine*, Vol 7, 2002.
- [3] N. A. Platonova et al., "Age-related features of ceruloplasmin biosynthesis and distribution in rats," *Ontogenez*, vol. 35, no. 3, pp. 171–182, 2004.
- [4] A. V. Vasin, N. A. Platonova, S. A. Klotchenko, N. V. Tsymbalenko, and L. V. Puchkova, "Expression of ceruloplasmin pseudogene in cultured human cells," *Dokl. Biochem. Biophys.*, vol. 397, no. 1–6, pp. 254–258, 2004.
- [5] A. V. Vasin, S. A. Klotchenko, N. A. Platonova, N. V. Tsymbalenko, V. S. Babich, and L. V. Puchkova, "Identification of the rat ceruloplasmin mRNA isoform putative coded of a protein localized in mitochondria," *Mol. Biol.*, vol. 39, no. 6, 2005.
- [6] A. V. Vasin et al., "Mitochondrial ceruloplasmin of mammals," *Mol. Biol.*, vol. 39, no. 1, pp. 42–52, 2005.
- [7] N. a. Platonova, a. V. Vasin, S. a. Klotchenko, N. V. Tsymbalenko, and L. V. Puchkova, "The revelation of expressing region in the processed ceruloplasmin gene in human genome by biocomputational and biochemical methods," *Biophys. Chem.*, vol. 115, no. 2-3 SPEC. ISS., pp. 247–250, 2005.
- [8] A. V. Vasin, S. A. Klotchenko, N. A. Platonova, N. V. Tsymbalenko, V. S. Babich, and L. V. Puchkova, "Identification of the Putative mRNA Coding for a Mitochondrial Isoform of Rat Ceruloplasmin," *Mol. Biol.*, vol. 39, no. 6, pp. 815–825, 2005.
- [9] S. Samsonov, N. Platonova, A. Vasin, A. Skvortsov, N. Tsymbalenko, and L. Puchkova, "Organ-specific mammalian Ctr1 gene expression and in silico analysis of its putative protein product," *Febs J.*, 2006.
- [10] S. A. Samsonov, N. a. Platonova, a. N. Skvortsov, N. V. Tsymbalenko, a. V. Vasin, and L. V. Puchkova, "Relationships between CTR1 activity and copper status in different rat organs," *Mol. Biol.*, vol. 40, no. 2, pp. 207–217, 2006.
- [11] N. Platonova et al., "Milk ceruloplasmin is a valuable source of nutrient copper ions for mammalian newborns," *J. Trace Elem. Med. Biol.*, vol. 21, no. 3, pp. 184–193, 2007.
- [12] M. Jerebtsova et al., "Mass spectrometry and biochemical analysis of RNA polymerase II: Targeting by protein phosphatase-1," *Mol. Cell. Biochem.*, vol. 347, no. 1–2, pp. 79–87, 2011.
- [13] A V Vasin et al., "Multisegment one-step RT-PCR fluorescent labeling of influenza A virus genome for use in diagnostic microarray applications," *J. Phys. Conf. Ser.*, vol. 291, p. 012006, 2011.
- [14] S. A. Klotchenko et al., "Oligonucleotide microarray for subtyping of influenza A viruses," *Journal of Physics: Conference Series*, vol. 345, no. 5. p. 012041, 2012.

- [15] V. V. Egorov et al., "Amyloidogenic peptide homologous to fragment 129-148 of human myocilin," *Prion*, vol. 7, no. 3, 2013.
- [16] V. V. Egorov et al., "Magnetic labeling of proteins for atomic force microscopy," *Dokl. Biochem. Biophys.*, vol. 448, no. 1, 2013.
- [17] A. Vasin, S. Klotchenko, and L. Puchkova, "Phylogenetic Analysis of Six-Domain Multi-Copper Blue Proteins," *PLoS Curr.*, no. MARCH 2013, 2013.
- [18] V. V. Egorov et al., "Structural features of the peptide homologous to 6-25 fragment of influenza A PB1 protein," *Int. J. Pept.*, vol. 2013, 2013.
- [19] A. V Vasin et al., "Universal diagnostic oligonucleotide microarray for subtyping of human and animal influenza A viruses.," *Vopr. Virusol.*, vol. 58, no. 5, pp. 32–7, Jan. 2014.
- [20] O. I. Ksenofontova et al., "Porous silicon and its applications in biology and medicine," *Tech. Phys.*, vol. 59, no. 1, pp. 66–77, 2014.
- [21] A. V Vasin, O. A. Temkina, V. V Egorov, S. A. Klotchenko, M. A. Plotnikova, and O. I. Kiselev, "Molecular mechanisms enhancing the proteome of influenza A viruses: an overview of recently discovered proteins.," *Virus Res.*, vol. 185, pp. 53–63, 2014.
- [22] V. V Egorov et al., "A conservative mutant of a proteolytic fragment produced during fibril formation enhances fibrillogenesis," *Prion*, vol. 8, no. 5, pp. 369–373, 2014.
- [23] K. T. Sultankulova et al., "Comparative Evaluation of Effectiveness of IAVchip DNA Microarray in Influenza A Diagnosis," *Sci. World J.*, vol. 2014, pp. 1–11, 2014.
- [24] O. I. Kiselev et al., "Ebola hemorrhagic fever: Properties of the pathogen and development of vaccines and chemotherapeutic agents," *Mol. Biol.*, vol. 49, no. 4, 2015.
- [25] O. V. Matusевич et al., "Synthesis and antiviral activity of PB1 component of the influenza A RNA polymerase peptide fragments," *Antiviral Res.*, vol. 113, pp. 4–10, 2015.
- [26] V. L. Rusinov et al., "Nucleophilic substitution of nitro group in nitrotriazolotriazines as a model of potential interaction with cysteine-containing proteins," *Chem. Heterocycl. Compd.*, vol. 51, no. 3, pp. 275–280, 2015.
- [27] R. N. Heydarov et al., "Identification of genetic determinants of influenza A virus resistance to adamantanes and neuraminidase inhibitors using biological microarray," *Dokl. Biochem. Biophys.*, vol. 460, no. 1, pp. 4–8, 2015.
- [28] V. V. Egorov et al., "On the structural features of influenza A nucleoprotein particles from small-angle X-ray scattering data," *J. Surf. Investig.*, vol. 10, no. 2, 2016.
- [29] V. V. Egorov et al., "Characterization of oligomerization of a peptide from the ebola virus glycoprotein by small-angle neutron scattering," *Crystallogr. Reports*, vol. 61, no. 1, 2016.
- [30] A. V. Vasin et al., "The influenza A virus NS genome segment displays lineage-specific patterns in predicted RNA secondary structure," *BMC Res. Notes*, vol. 9, no. 1, 2016.
- [31] K. V. Sivak et al., "Adenosine A2A receptor as a drug target for treatment of sepsis," *Mol. Biol.*, vol. 50, no. 2, pp. 200–212, 2016.

- [32] M. A. Plotnikova, S. A. Klotchenko, and A. V. Vasin, "Development of a multiplex quantitative PCR assay for the analysis of human cytokine gene expression in influenza A virus-infected cells," *J. Immunol. Methods*, vol. 430, pp. 51–55, Mar. 2016.
- [33] A. V. Petrova-Brodskaya et al., "Comparison of influenza A virus inhibition in vitro by siRNA complexes with chitosan derivatives, polyethyleneimine and hybrid polyarginine-inorganic microcapsules," *Vopr. Virusol.*, vol. 62, no. 6, 2017.
- [34] N. A. Platonova et al., "Ceruloplasmin gene expression profile changes in the rat mammary gland during pregnancy, lactation and involution," *J. Trace Elem. Med. Biol.*, vol. 43, pp. 126–134, Sep. 2017.
- [35] A. Muslimov et al., "Mesenchymal stem cells engineering: microcapsules assisted gene transfection and magnetic cell separation," *ACS Biomater. Sci. Eng.*, p. acsbiomaterials.7b00482, Sep. 2017.
- [36] A. S. Timin et al., "Hybrid inorganic-organic capsules for efficient intracellular delivery of novel siRNAs against influenza A (H1N1) virus infection," *Sci. Rep.*, vol. 7, no. 1, p. 102, Dec. 2017.
- [37] A. A. Sominina et al., "Summary of influenza and other respiratory viruses detected and characterized in Russia during 2017–2018 season," *Russ. J. Infect. Immun.*, vol. 8, no. 4, 2018.
- [38] V. V. Argentova et al., "In vitro Antiviral Activity of Recombinant Antibodies of IgG and IgA Isotypes to Hemagglutinin of the Influenza A Virus (Molecular Biology, (2017) 51, (804), 10.1134/S0026893317060024)," *Mol. Biol.*, vol. 52, no. 5, 2018.
- [39] A. V. Brodskaya et al., "Inhibition of influenza A virus by mixed siRNAs, targeting the PA, NP, and NS genes, delivered by hybrid microcarriers," *Antiviral Res.*, vol. 158, no. November 2017, pp. 147–160, 2018.
- [40] M. A. Plotnikova et al., "Antibody microarray immunoassay for screening and differential diagnosis of upper respiratory tract viral pathogens," *J. Immunol. Methods*, no. September, p. 112712, 2019.
- [41] I. Baranovskaya et al., "Changes in RNA secondary structure affect NS1 protein expression during early stage influenza virus infection," *Viol. J.*, vol. 16, no. 1, 2019.
- [42] D. M. Danilenko et al., "Influenza Vaccine Effectiveness Assessed at Different Stages of the Epidemic Cycle in Reducing the Frequency of Hospitalization with Influenza," *Epidemiol. Vaccinal Prev.*, vol. 18, no. 5, pp. 63–69, 2019.
- [43] M. A. Plotnikova et al., "Meglumine acridone acetate, the ionic salt of CMA and N-methylglucamine, induces apoptosis in human PBMCs via the mitochondrial pathway," *Sci. Rep.*, vol. 9, no. 1, p. 18240, 2019.
- [44] S. A. Klotchenko et al., "A Scanning Hardware Analyzer for Recording and Processing Fluorescent Biochip Images," *Biomed. Eng. (NY)*, 2020.