

## Сведения об официальном оппоненте

**Лунин Владимир Глебович**, д.б.н. руководитель лаборатории биологически активных наноструктур "Национальный исследовательский центр эпидемиологии и микробиологии имени почетного академика Н.Ф. Гамалеи" Министерства здравоохранения Российской Федерации, г Москва

Адрес: НИЦ эпидемиологии и микробиологии имени Н.Ф. Гамалеи, ул. Гамалеи, 18, Москва, 123098

E-mail: [lunin1955@gmail.com](mailto:lunin1955@gmail.com)

1. Avetisian LR, Voronina OL, Chernukha MIu, Kunda MS, Gabrielian NI, Lunin VG, Shaginian IA. Persistence of *Pseudomonas aeruginosa* strains in patients of Federal Scientific Center of Transplantology and Artificial Organs. *Zh Mikrobiol Epidemiol Immunobiol.* 2012; (4):99-104.
2. Boksha IS, Lavrova NV, Grishin AV, Demidenko AV, Lyashchuk AM, Galushkina ZM, Ovchinnikov RS, Umyarov AM, Avetisian LR, Chernukha MIu, Shaginian IA, Lunin VG, Karyagina AS. Staphylococcus simulans Recombinant Lysostaphin: Production, Purification, and Determination of Antistaphylococcal Activity. *Biochemistry (Mosc).* 2016; 81(5):502-10. doi: 10.1134/S0006297916050072.
3. Danilova TA, Adzhieva AA, Danilina GA, Lunin VG, Grabko VI, Minko AG. Changed Serum Cytokine Profile in Mice in Response to Streptococcus A Culture. *Bull Exp Biol Med.* 2015; 159(1):66-9. doi: 10.1007/s10517-015-2891-z.
4. Dmitrienko OA, Shaginian IA, Prokhorov VIa, Matveev SM, Aliapkina IuS, Vaniusheva OV, Shilov IA, Lunin VG, Gintsburg AL. Study on the polymorphism of the coagulase gene by the method of sequencing in methicillin-resistant *Staphylococcus aureus* strains, isolated in hospitals in different regions of Russia and Belarus. *Zh Mikrobiol Epidemiol Immunobiol.* 2005; (3):27-32.
5. Ershova AS, Gra OA, Lyaschuk AM, Grunina TM, Tkachuk AP, Bartov MS, Savina DM, Sergienko OV, Galushkina ZM, Gudov VP, Kozlovskaya LI, Kholodilov IS, Gmyl LV, Karganova GG, Lunin VG, Karyagina AS, Gintsburg AL. Recombinant domains III of Tick-Borne Encephalitis Virus envelope protein in combination with dextran and CpGs induce immune response and partial protectiveness against TBE virus infection in mice. *BMC Infect Dis.* 2016; 16(1):544. doi:10.1186/s12879-016-1884-5.
6. Ershova AS, Karyagina AS, Vasiliev MO, Lyashchuk AM, Lunin VG, Spirin SA, Alexeevski AV. Solitary restriction endonucleases in prokaryotic genomes. *Nucleic Acids Res.* 2012; 40(20):10107-15. doi: 10.1093/nar/gks853.

7. Gorskaya YF, Danilova TA, Karyagina AS, Lunin VG, Grabko VI, Bartov MS, Gromov AV, Grunina TM, Soboleva LA, Shapoval IM, Nesterenko VG. Effects of combined treatment with complex *S. typhimurium* antigens and factors stimulating osteogenesis (curettage, BMP-2) on multipotent bone marrow stromal cells and serum concentration of cytokines in CBA mice. *Bull Exp Biol Med.* 2015; 158(4):465-70. doi: 10.1007/s10517-015-2786-z.
8. Gorskaya YF, Danilova TA, Lebedinskaya OV, Lunin VG, Grabko VI, Sharapova NE, Nesterenko VG. Effects of immunization with group a streptococcal antigens on the transplantability of mouse bone marrow stromal stem cells, counts of stromal precursor cells, and their osteogenic characteristics. *Bull Exp Biol Med.* 2011; 151(5):607-11. doi: 10.1007/s10517-011-1394-9. PMID: 22462057.
9. Grishin A, Karyagina AS, Tiganova IG, Dobrynina OY, Bolshakova TN, Boksha IS, Alexeyeva NV, Stepanova TV, Lunin VG, Chuchalin AG, Ginzburg AL. Inhibition of *Pseudomonas aeruginosa* biofilm formation by LecA-binding polysaccharides. *Int J Antimicrob Agents.* 2013; 42(5):471-2. doi:10.1016/j.ijantimicag.2013.07.003.
10. Grishin AV, Karyagina AS, Vasina DV, Vasina IV, Gushchin VA, Lunin VG. Resistance to peptidoglycan-degrading enzymes. *Crit Rev Microbiol.* 2020; 46(6):703-726. doi: 10.1080/1040841X.2020.1825333.
11. Grishin AV, Konstantinova SV, Vasina IV, Shestak NV, Karyagina AS, Lunin VG. A Simple Protocol for the Determination of Lysostaphin Enzymatic Activity. *Antibiotics (Basel).* 2020; 9(12):917. doi: 10.3390/antibiotics9120917.
12. Grishin AV, Lavrova NV, Lyashchuk AM, Strukova NV, Generalova MS, Ryazanova AV, Shestak NV, Boksha IS, Polyakov NB, Galushkina ZM, Soboleva LA, Vetchinin SS, Pavlov VM, Karyagina AS, Lunin VG. The Influence of Dimerization on the Pharmacokinetics and Activity of an Antibacterial Enzyme Lysostaphin. *Molecules.* 2019; 24(10):1879. doi: 10.3390/molecules24101879.
13. Grishin AV, Shestak NV, Lavrova NV, Lyashchuk AM, Popova LI, Strukova NV, Generalova MS, Ryazanova AV, Polyakov NB, Galushkina ZM, Soboleva LA, Boksha IS, Karyagina AS, Lunin VG. Fusion of Lysostaphin to an Albumin Binding Domain Prolongs Its Half-Life and Bactericidal Activity in the Systemic Circulation. *Molecules.* 2019; 24(16):2892. doi:10.3390/molecules24162892.
14. Gromov AV, Bartov MS, Orlova PA, Manskikh VN, Krivozubov MS, Grunina TM, Manukhina MS, Strukova NV, Nikitin KE, Lunin VG, Karyagina AS, Gintsburg AL. Combined Effect of Bone Morphogenetic Protein-2 and Erythropoietin on Regeneration

of Cranial Bone Defects in Mice. *Bull Exp Biol Med.* 2019; 167(3):408-412. doi: 10.1007/s10517-019-04538-5.

15. Grunina TM, Demidenko AV, Lyaschuk AM, Poponova MS, Galushkina ZM, Soboleva LA, Cherepushkin SA, Polyakov NB, Grumov DA, Solovyev AI, Zhukhovitsky VG, Boksha IS, Subbotina ME, Gromov AV, Lunin VG, Karyagina AS. Recombinant Human Erythropoietin with Additional Processable Protein Domains: Purification of Protein Synthesized in Escherichia coli Heterologous Expression System. *Biochemistry (Mosc).* 2017; 82(11):1285-1294. doi: 10.1134/S0006297917110062.
16. Karyagina AS, Boksha IS, Grunina TM, Demidenko AV, Poponova MS, Sergienko OV, Lyashchuk AM, Galushkina ZM, Soboleva LA, Osidak EO, Bartov MS, Gromov AV, Lunin VG. Two Variants of Recombinant Human Bone Morphogenetic Protein-2 (rhBMP-2) with Additional Protein Domains: Synthesis in an Escherichia coli Heterologous Expression System. *Biochemistry (Mosc).* 2017; 82(5):613-624. doi: 10.1134/S0006297917050091.
17. Karyagina AS, Gromov AV, Grunina TM, Lyaschuk AM, Grishin AV, Strukova NV, Generalova MS, Galushkina ZM, Soboleva LA, Dobrinina OY, Bolshakova TN, Subbotina ME, Romanovskaya-Romanko EA, Krasilnikov IV, Polyakov NB, Solovyev AI, Grumov DA, Zhukhovitsky VG, Ryabova EI, Prokofiev VV, Lunin VG. Development of a Platform for Producing Recombinant Protein Components of Epitope Vaccines for the Prevention of COVID-19. *Biochemistry (Mosc).* 2021; 86(10):1275-1287. doi:10.1134/S0006297921100096.
18. Karyagina AS, Gromov AV, Grunina TM, Lyaschuk AM, Poponova MS, Kleymenov DA, Strukova NV, Generalova MS, Ryazanova AV, Galushkina ZM, Dobrynina OY, Bolshakova TN, Sergeeva MV, Romanovskaya-Romanko EA, Krasilnikov IV, Subbotina ME, Lunin VG. Hybrid Proteins with Short Conformational Epitopes of the Receptor-Binding Domain of SARS-CoV-2 Spike Protein Promote Production of Virus-Neutralizing Antibodies When Used for Immunization. *Biochemistry (Mosc).* 2022; 87(4):319-330. doi: 10.1134/S0006297922040022.
19. Konstantinova S, Grishin A, Lyashchuk A, Vasina I, Karyagina A, Lunin V. Influence of NaCl and pH on lysostaphin catalytic activity, cell binding, and bacteriolytic activity. *Appl Microbiol Biotechnol.* 2022; 106(19-20):6519-6534. doi: 10.1007/s00253-022-12173-w.
20. Korneeva VA, Trubetskov MM, Korshunova AV, Lushchekina SV, Kolyadko VN, Sergienko OV, Lunin VG, Pantelev MA, Ataulkhanov FI. Interactions outside the proteinase-binding loop contribute significantly to the inhibition of activated coagulation factor XII by its canonical inhibitor from corn. *J Biol Chem.* 2014; 289(20):14109-20. doi: 10.1074/jbc.M114.553735.

21. Monakhova MV, Penkina AI, Pavlova AV, Lyaschuk AM, Kucherenko VV, Alexeevski AV, Lunin VG, Friedhoff P, Klug G, Oretskaya TS, Kubareva EA. Endonuclease Activity of MutL Protein of the *Rhodobacter sphaeroides* Mismatch Repair System. *Biochemistry (Mosc)*. 2018; 83(3):281-293. doi: 10.1134/S0006297918030082.
22. Osidak EO, Osidak MS, Sivogrivov DE, Portnaya TS, Grunina TM, Galushkina ZM, Lunin VG, Karyagina AS, Domogatskii SP. Kinetics of BMP-2 release from collagen carrier: evaluation by enzyme immunoassay in the presence of plasma proteins. *Bull Exp Biol Med*. 2014; 158(1):104-8. doi: 10.1007/s10517-014-2702-y.
23. Senatov F, Zimina A, Chubrik A, Kolesnikov E, Permyakova E, Voronin A, Poponova M, Orlova P, Grunina T, Nikitin K, Krivozubov M, Strukova N, Generalova M, Ryazanova A, Manskikh V, Lunin V, Gromov A, Karyagina A. Effect of recombinant BMP-2 and erythropoietin on osteogenic properties of biomimetic PLA/PCL/HA and PHB/HA scaffolds in critical-size cranial defects model. *Mater Sci Eng C Mater Biol Appl*. 2022; 135:112680. doi: 10.1016/j.msec.2022.112680.
24. Sergienko OV, Liashchuk AM, Aksenova EI, Galushkina ZM, Poletaeva NN, Sharapova NE, Semikhin AS, Kotnova AR, Veselov AM, Bashkirov VN, Kulikova NL, Khlebnikov VS, Kondrat'eva TK, Kariagina-Zhulina AS, Apt AS, Lunin VG, Gintsburg AL. [Production of mycobacterial antigens merged with cellulose binding protein domain in order to produce subunit vaccines against tuberculosis]. *Mol Gen Mikrobiol Virusol*. 2012; (1):16-20.
25. Tkachuk AP, Gushchin VA, Potapov VD, Demidenko AV, Lunin VG, Gintsburg AL. Multi-subunit BCG booster vaccine GamTBvac: Assessment of immunogenicity and protective efficacy in murine and guinea pig TB models. *PLoS One*. 2017; 12(4):e0176784. doi: 10.1371/journal.pone.0176784.
26. Velikodvorskaia GA, Chekanovskaia LA, Lunina NA, Sergienko OV, Lunin VG, Dvortsov IA, Zverlov VV. The family 28 carbohydrate-binding module of the thermostable endo-1,4-beta-glucanase CelD *Caldicellulosiruptor bescii* maximizes the enzyme's activity and binds irreversibly to amorphous cellulose. *Mol Biol (Mosk)*. 2013; 47(4):667-73. doi: 10.7868/s0026898413040150.
27. Vladimirkii MA, Mordovskaia LI, Aksenova VA, Shipina LK, Aksenova EI, Sergienko OV, Liashuk AM, Neretina TV, Kariagina AS, Lunin VG, Efremov EE, Ignashenkova GV, Vlasik TN, Ianushevskaya EV, Kashirina NM. Development and use of a domestic test system for diagnosis of tuberculous infection on the basis of quantitative analysis of interferon-gamma induction in whole blood samples in vitro, by using specific recombinant antigens. *Klin Lab Diagn*. 2010; (1):49-54.

28. Voronina AL, Chernukha MY, Shaginyan IA, Kunda MS, Avetisyan LR, Orlova AA, Lunin VG, Avakyan LV, Kapranov NI, Amelina EL, Chuchalin AG, Gintsburg A L. Characterization of genotypes for *Burkholderia cepacia* complex strains isolated from patients in hospitals of Russian Federation. *Mol Gen Mikrobiol Virusol*. 2013; (2):22-30.
29. Voronina OL, Kunda MS, Aksenova EI, Ryzhova NN, Semenov AN, Petrov EM, Didenko LV, Lunin VG, Ananyina YV, Gintsburg AL. The characteristics of ubiquitous and unique *Leptospira* strains from the collection of Russian centre for leptospirosis. *Biomed Res Int*. 2014; 2014:649034. doi: 10.1155/2014/649034.
30. Voronina OL, Kunda MS, Aksenova EI, Semenov AN, Ryzhova NN, Lunin VG, Gintsburg AL. Mosaic structure of *Mycobacterium bovis* BCG genomes as a representation of phage sequences' mobility. *BMC Genomics*. 2016; 17(Suppl 14):1009. doi: 10.1186/s12864-016-3355-1.
31. Voronina OL, Kunda MS, Aksenova EI, Orlova AA, Chernukha MIu, Lunin VG, Amelina EL, Chuchalin AG, Gintsburg AL. The express diagnostic of microorganisms affecting respiratory tract of patients with mucoviscidosis. *Klin Lab Diagn*. 2013; (11):53-7.
32. Voronina OL, Kunda MS, Bondarenko VM, Shabanova NA, Lunin VG. Refinement of taxonomic position of *Lactobacillus* genus probiotic strains by 16S rDNA and *rpoA* gene sequencing. *Zh Mikrobiol Epidemiol Immunobiol*. 2012; (3):18-24.
33. Voronina OL, Kunda MS, Dmitrenko OA, Lunin VG, Gintsburg AL. [Development of *Staphylococcus Haemolyticus* multilocus sequencing scheme and its use for molecular-epidemiologic analysis of strains isolated in hospitals in Russian federation in 2009-2010]. *Zh Mikrobiol Epidemiol Immunobiol*. 2011; (5):62-7.
34. Voronina OL, Kunda MS, Dmitrienko OA, Liubasovskaia LA, Kovalishena OV, Popov DA, Lunin VG. Estimation of species diversity of coagulase-negative staphylococci isolated in hospitals of Russian Federation in 2009-2010. *Zh Mikrobiol Epidemiol Immunobiol*. 2011; (1):3-8.
35. Voronina OL, Kunda MS, Gudov VP, Aksenova EI, Shilova VS, Yarosh LV, Elgort DA, Lunin VG, Semenenko TA. Search for RNA of the hepatitis E virus autochthonous for Russia in the most likely infection sources. *Mol Gen Mikrobiol Virusol*. 2014; (3):29-34.
36. Voronina OL, Kunda MS, Ryzhova NN, Aksenova EI, Semenov AN, Kurnaeva MA, Ananyina YV, Lunin VG, Gintsburg AL. Regularities of the ubiquitous polyhostal microorganisms selection by the example of three taxa. *Mol Biol (Mosk)*. 2015; 49(3):430-41. doi: 10.7868/S0026898415030179.

37. Voronina OL, Kunda MS, Ryzhova NN, Aksenova EI, Semenov AN, Lasareva AV, Amelina EL, Chuchalin AG, Lunin VG, Gintsburg AL. The Variability of the Order Burkholderiales Representatives in the Healthcare Units. *Biomed Res Int.* 2015; 2015:680210. doi: 10.1155/2015/680210.
38. Voronina OL, Lunin VG. Molecular genetic typing of *Legionella pneumophila* serogroup 1 isolated in town Verkhnyaya Pyshma using international standards. *Zh Mikrobiol Epidemiol Immunobiol.* 2008; (2):20-3.
39. Zhuravleva IuN, Lugovtsev VIu, Voronina OL, Shilov IA, Vaniusheva OV, Lunin VG, Naumova MA, Mamaeva TA, Tikhonova NT. Geneticheskiĭ analiz dikikh shtammov virusa kori, izolirovannykh v evropeĭskoĭ chasti RF. Genetic analysis of wild measles virus strains isolated in the european part of the Russian Federation. *Vopr Virusol.* 2003; 48(4):29-35.