

## Резюме: Синявин Андрей Эдуардович

### Адрес

Федеральное государственное бюджетное учреждение науки Институт биоорганической химии им. академиков М.М. Шемякина и Ю.А. Овчинникова Российской академии наук, Москва, Россия

### Контакты

<https://www.ibch.ru/ru/users/1347>

### Образование

2017–2021	Москва	ИБХ РАН	Аспирант
2015–2017	Москва	Московский технологический университет (МИТХТ)	Диплом магистра с отличием по направлению "Молекулярная и клеточная биотехнология".
2016–2016	Madrid, Spain	Instituto de Salud Carlos III	Стажировка в рамках проекта EURIPRED

### Работа в ИБХ

2023–наст.вр.	Научный сотрудник
2018–2023	Младший научный сотрудник

### Научные интересы

Вирусология, иммунология, нейробиология, медицинская химия, поиск ингибиторов репликации ВИЧ, анти-ВИЧ/СПИД вакцина,  $\alpha 7$  nAChR и иммунная система.

### Членство в сообществах

Junior member of the European Academy of Allergy and Clinical Immunology (EAACI)

International AIDS society (IAS)

### Степени и звания

2022	Кандидат наук (Химические науки, 1.4.9 - Биоорганическая химия)
------	---

### Гранты и проекты

2018–2021	<a href="#">Клинико-экспериментальное исследование на овцах эффективности миорелаксантного полипептида аземиопсина и его аналогов</a>
-----------	---

### Публикации

- Kudryavtsev DS, Mozhaeva VA, Ivanov IA, **Siniavin AE**, Kalmykov AS, Gritchenko AS, Khlebtsov BN, Wang SP, Kang B, Tsetlin VI, Balykin VI, Melentiev PN (2024). Optical detection of infectious SARS-CoV-2 virions by counting spikes. *Nanoscale* , , [10.1039/d4nr01236d](#)
- Siniavin AE**, Gushchin VA, Shastina NS, Darnotuk ES, Luyksaar SI, Russu LI, Inshakova AM, Shidlovskaya EV, Vasina DV, Kuznetsova NA, Savina DM, Zorkov ID, Dolzhikova IV, Sheremet AB, Logunov DY, Zigangirova NA, Gintsburg AL (2024). New conjugates based on N4-hydroxycytidine with more potent antiviral efficacy in vitro than EIDD-2801 against SARS-CoV-2 and other human coronaviruses. *Antiviral Res*

225, 105871, [10.1016/j.antiviral.2024.105871](https://doi.org/10.1016/j.antiviral.2024.105871)

3. Akasov RA, Chepikova OE, Pallaeva TN, Gorokhovets NV, **Siniavin AE**, Gushchin VA, Savvateeva LV, Vinokurov IA, Khochenkov DA, Zamyatnin AA, Khaydukov EV (2024). Evaluation of molecular mechanisms of riboflavin anti-COVID-19 action reveals anti-inflammatory efficacy rather than antiviral activity. *BIOCHIM BIOPHYS ACTA* 1868 (5), 130582, [10.1016/j.bbagen.2024.130582](https://doi.org/10.1016/j.bbagen.2024.130582)
4. Mazunina EP, Gushchin VA, Kleymenov DA, **Siniavin AE**, Burtseva EI, Shmarov MM, Mukasheva EA, Bykonina EN, Kozlova SR, Evgrafova EA, Zolotar AN, Shidlovskaya EV, Kirillova ES, Krepkaia AS, Usachev EV, Kuznetsova NA, Ivanov IA, Dmitriev SE, Ivanov RA, Logunov DY, Gintsburg AL (2024). Trivalent mRNA vaccine-candidate against seasonal flu with cross-specific humoral immune response. *Front Immunol* 15, 1381508, [10.3389/fimmu.2024.1381508](https://doi.org/10.3389/fimmu.2024.1381508)
5. Bykonina EN, Kleymenov DA, Gushchin VA, **Siniavin AE**, Mazunina EP, Kozlova SR, Zolotar AN, Usachev EV, Kuznetsova NA, Shidlovskaya EV, Pochtovyi AA, Kustova DD, Ivanov IA, Dmitriev SE, Ivanov RA, Logunov DY, Gintsburg AL (2024). Major Role of S-Glycoprotein in Providing Immunogenicity and Protective Immunity in mRNA Lipid Nanoparticle Vaccines Based on SARS-CoV-2 Structural Proteins. *Vaccines (Basel)* 12 (4), , [10.3390/vaccines12040379](https://doi.org/10.3390/vaccines12040379)
6. Son L, Kost V, Maiorov V, Sukhov D, Arkhangelskaya P, Ivanov I, Kudryavtsev D, **Siniavin A**, Utkin Y, Kasheverov I (2024). Efficient Expression in *Leishmania tarentolae* (LEXSY) of the Receptor-Binding Domain of the SARS-CoV-2 S-Protein and the Acetylcholine-Binding Protein from *Lymnaea stagnalis*. *Molecules* 29 (5), , [10.3390/molecules29050943](https://doi.org/10.3390/molecules29050943)
7. Darnotuk ES, **Siniavin AE**, Shastina NS, Luyksaar SI, Inshakova AM, Bondareva NE, Zolotov SA, Lubenec NL, Sheremet AB, Logunov DY, Zigangirova NA, Gushchin VA, Gintsburg AL (2023). Synthesis and Antiviral Activity of Novel  $\beta$ -D-N4-Hydroxycytidine Ester Prodrugs as Potential Compounds for the Treatment of SARS-CoV-2 and Other Human Coronaviruses. *Pharmaceuticals (Basel)* 17 (1), , [10.3390/ph17010035](https://doi.org/10.3390/ph17010035)
8. Pochtovyi AA, Kustova DD, **Siniavin AE**, Dolzhikova IV, Shidlovskaya EV, Shpakova OG, Vasilchenko LA, Glavatskaya AA, Kuznetsova NA, Iliukhina AA, Shelkov AY, Grinkevich OM, Komarov AG, Logunov DY, Gushchin VA, Gintsburg AL (2023). In Vitro Efficacy of Antivirals and Monoclonal Antibodies against SARS-CoV-2 Omicron Lineages XBB.1.9.1, XBB.1.9.3, XBB.1.5, XBB.1.16, XBB.2.4, BQ.1.1.45, CH.1.1, and CL.1. *Vaccines (Basel)* 11 (10), 1533, [10.3390/vaccines11101533](https://doi.org/10.3390/vaccines11101533)
9. Ivanov IA, **Siniavin AE**, Palikov VA, Senko DA, Shelukhina IV, Epifanova LA, Ojomoko LO, Belukhina SY, Prokopev NA, Landau MA, Palikova YA, Kazakov VA, Borozdina NA, Bervinova AV, Dyachenko IA, Kasheverov IE, Tsetlin VI, Kudryavtsev DS (2023). Analogs of 6-Bromohypaphorine with Increased Agonist Potency for  $\alpha 7$  Nicotinic Receptor as Anti-Inflammatory Analgesic Agents. *Mar Drugs* 21 (6), 368, [10.3390/md21060368](https://doi.org/10.3390/md21060368)
10. Boyko AA, Ustiuzhanina MO, Vavilova JD, Streltsova MA, Kust SA, **Siniavin AE**, Astrakhantseva IV, Drutskaya MS, Kovalenko EI (2023). Phenotypic Changes in T and NK Cells Induced by Sputnik V Vaccination. *Vaccines (Basel)* 11 (6), , [10.3390/vaccines11061047](https://doi.org/10.3390/vaccines11061047)
11. Kuznetsova N, **Siniavin A**, Butenko A, Larichev V, Kozlova A, Usachev E, Nikiforova M, Usacheva O, Shchetinin A, Pochtovyi A, Shidlovskaya E, Odintsova A, Belyaeva E, Voskoboinikov A, Bessonova A, Vasilchenko L, Karganova G, Zlobin V, Logunov D, Gushchin V, Gintsburg A (2023). Development and characterization of chimera of yellow fever virus vaccine strain and Tick-Borne encephalitis virus. *PLoS One* 18 (5), e0284823, [10.1371/journal.pone.0284823](https://doi.org/10.1371/journal.pone.0284823)
12. Shelukhina I, **Siniavin A**, Kasheverov I, Ojomoko L, Tsetlin V, Utkin Y (2023).  $\alpha 7$ - and  $\alpha 9$ -Containing Nicotinic Acetylcholine Receptors in the Functioning of Immune System and in Pain. *Int J Mol Sci* 24 (7), 6524, [10.3390/ijms24076524](https://doi.org/10.3390/ijms24076524)
13. **Siniavin AE**, Russu LI, Vasina DV, Shidlovskaya EV, Gushchin VA, Gintsburg AL (2022). Efficacy of favipiravir and molnupiravir against novel SARS-CoV-2 variants in vitro and in vivo. *Bulletin of Russian State Medical University* 2022 (6), 106–110, [10.24075/BRSMU.2022.071](https://doi.org/10.24075/BRSMU.2022.071)
14. **Siniavin AE**, Novikov MS, Gushchin VA, Terechov AA, Ivanov IA, Paramonova MP, Gureeva ES, Russu LI, Kuznetsova NA, Shidlovskaya EV, Luyksaar SI, Vasina DV, Zolotov SA, Zigangirova NA, Logunov DY, Gintsburg AL (2022). Antiviral Activity of N1,N3-Disubstituted Uracil Derivatives against SARS-CoV-2 Variants of Concern. *Int J Mol Sci* 23 (17), , [10.3390/ijms231710171](https://doi.org/10.3390/ijms231710171)
15. Utkin Y, **Siniavin A**, Kasheverov I, Tsetlin V (2022). Antiviral Effects of Animal Toxins: Is There a Way to

- Drugs? *Int J Mol Sci* 23 (7), , [10.3390/ijms23073634](https://doi.org/10.3390/ijms23073634)
16. **Siniavin A**, Grinkina S, Osipov A, Starkov V, Tsetlin V, Utkin Y (2022). Anti-HIV Activity of Snake Venom Phospholipase A2s: Updates for New Enzymes and Different Virus Strains. *Int J Mol Sci* 23 (3), 1610, [10.3390/ijms23031610](https://doi.org/10.3390/ijms23031610)
  17. Kasheverov IE, Kuzmenkov AI, Kudryavtsev DS, Chudetskiy IS, Shelukhina IV, Barykin EP, Иванов Ivanov IA, **Siniavin AE**, Ziganshin RH, Baranov MS, Tsetlin VI, Vassilevski AA, Utkin YN (2021). Snake Toxins Labeled by Green Fluorescent Protein or Its Synthetic Chromophore are New Probes for Nicotinic acetylcholine Receptors. *Front Mol Biosci* 8 (8), 753283, [10.3389/fmolb.2021.753283](https://doi.org/10.3389/fmolb.2021.753283)
  18. **Siniavin AE**, Streltsova MA, Nikiforova MA, Kudryavtsev DS, Grinkina SD, Gushchin VA, Mozhaeva VA, Starkov VG, Osipov AV, Lummis SCR, Tsetlin VI, Utkin YN (2021). Snake venom phospholipase A2s exhibit strong virucidal activity against SARS-CoV-2 and inhibit the viral spike glycoprotein interaction with ACE2. *Cell Mol Life Sci* 78 (23), 7777–7794, [10.1007/s00018-021-03985-6](https://doi.org/10.1007/s00018-021-03985-6)
  19. Shidlovskaya EV, Kuznetsova NA, Divisenko EV, Nikiforova MA, **Siniavin AE**, Ogarkova DA, Shagaev AV, Semashko MA, Tkachuk AP, Burgasova OA, Gushchin VA (2021). The value of rapid antigen tests for identifying carriers of viable sars-cov-2. *Viruses* 13 (10), , [10.3390/v13102012](https://doi.org/10.3390/v13102012)
  20. Gushchin VA, Dolzhikova IV, Shchetinin AM, Odintsova AS, **Siniavin AE**, Nikiforova MA, Pochtovyi AA, Shidlovskaya EV, Kuznetsova NA, Burgasova OA, Kolobukhina LV, Iliukhina AA, Kovyrshina AV, Botikov AG, Kuzina AV, Grousova DM, Tukhvatulin AI, Shcheblyakov DV, Zubkova OV, Karpova OV, Voronina OL, Ryzhova NN, Aksenova EI, Kunda MS, Lioznov DA, Danilenko DM, Komissarov AB, Tkachuk AP, Logunov DY, Gintsburg AL (2021). Neutralizing activity of sera from sputnik v-vaccinated people against variants of concern (VOC: B.1.1.7, B.1.351, P.1, B.1.617.2, B.1.617.3) and Moscow endemic SARS-CoV-2 variants. *Vaccines (Basel)* 9 (7), , [10.3390/vaccines9070779](https://doi.org/10.3390/vaccines9070779)
  21. Nikiforova MA, **Siniavin AE**, Shidlovskaya EV, Kuznetsova NA, Gushchin VA (2021). Evaluation of SARS-CoV-2 viability on experimental surfaces over time. *Bulletin of Russian State Medical University* (4), 16–19, [10.24075/brsmu.2021.033](https://doi.org/10.24075/brsmu.2021.033)
  22. Kruglova N, **Siniavin A**, Gushchin V, Mazurov D (2021). Different Neutralization Sensitivity of SARS-CoV-2 Cell-to-Cell and Cell-Free Modes of Infection to Convalescent Sera. *Viruses* 13 (6), , [10.3390/v13061133](https://doi.org/10.3390/v13061133)
  23. Nifantev I, **Siniavin A**, Karamov E, Kosarev M, Kovalchuk S, Turgiev A, Nametkin S, Bagrov V, Tavtorkin A, Ivchenko P (2021). A new approach to developing long-acting injectable formulations of anti-HIV drugs: Poly(ethylene phosphoric acid) block copolymers increase the efficiency of tenofovir against HIV-1 in MT-4 cells. *Int J Mol Sci* 22 (1), 1–16, [10.3390/ijms22010340](https://doi.org/10.3390/ijms22010340)
  24. Darnotuk ES, **Siniavin AE**, Shulga NV, Karamov EV, Shastina NS (2021). Phosphoramidate conjugates of 3'-azido-3'-deoxythymidine glycerolipid derivatives and amino acid esters: synthesis and anti-HIV activity. *Med Chem Res* 30 (3), 664–671, [10.1007/s00044-020-02672-8](https://doi.org/10.1007/s00044-020-02672-8)
  25. Antipova NV, Larionova TD, **Siniavin AE**, Nikiforova MA, Gushchin VA, Babichenko II, Volkov AV, Shakhparonov MI, Pavlyukov MS (2020). Establishment of Murine Hybridoma Cells Producing Antibodies against Spike Protein of SARS-CoV-2. *Int J Mol Sci* 21 (23), 1–15, [10.3390/ijms21239167](https://doi.org/10.3390/ijms21239167)
  26. Nurkhametova D, **Siniavin A**, Streltsova M, Kudryavtsev D, Kudryavtsev I, Giniatullina R, Tsetlin V, Malm T, Giniatullin R (2020). Does Cholinergic Stimulation Affect the P2X7 Receptor-Mediated Dye Uptake in Mast Cells and Macrophages? *Front Cell Neurosci* 14, 548376, [10.3389/fncel.2020.548376](https://doi.org/10.3389/fncel.2020.548376)
  27. **Siniavin AE**, Streltsova MA, Kudryavtsev DS, Shelukhina IV, Utkin YuN, Tsetlin VI (2020). Activation of  $\alpha 7$  Nicotinic Acetylcholine Receptor Upregulates HLA-DR and Macrophage Receptors: Potential Role in Adaptive Immunity and in Preventing Immunosuppression. *Biomolecules* 10 (4), 507, [10.3390/biom10040507](https://doi.org/10.3390/biom10040507)
  28. Tran TV, **Siniavin AE**, Hoang AN, Le MTT, Pham CD, Phung TV, Nguyen KC, Ziganshin RH, Tsetlin VI, Weng CF, Utkin YN (2019). Phospholipase A2 from krait Bungarus fasciatus venom induces human cancer cell death in vitro. *PeerJ* 7 (12), e8055, [10.7717/peerj.8055](https://doi.org/10.7717/peerj.8055)
  29. Lebedev D, Kryukova E, Ivanov I, Egorova N, Timofeev N, Spirova E, Tufanova E, **Siniavin A**, Kudryavtsev D, Kasheverov I, Zouridakis M, Katsarava R, Zavrashvili N, Iagorshvili I, Tzartos S, Tsetlin V (2019). Oligoarginine Peptides, a New Family of nAChR Inhibitors. *Mol Pharmacol* 96 (5), 664–673, [10.1124/mol.119.117713](https://doi.org/10.1124/mol.119.117713)
  30. (конференция) **Siniavin AE**, Streltsova MA, Kudryavtsev DS, Tsetlin VI (2019).  $\alpha 7$  nicotine acetylcholine receptor (NACHR) agonists strongly activate classical macrophages and increase the expression of HLA-DR

molecules. *Allergy* 74 (S106), 138, [10.1111/all.13959](https://doi.org/10.1111/all.13959)

31. Kornilaeva GV, **Siniavin AE**, Schultz A, Germann A, Moog H, von Briesen H, Turgiev AS, Karamov EV (2019). The Differential Anti-HIV Effect of a New Humic Substance-Derived Preparation in Diverse Cells of the Immune System. *Acta Naturae* 11 (2(41)), 68–76, [10.32607/20758251-2019-11-2-68-76](https://doi.org/10.32607/20758251-2019-11-2-68-76)
32. Karamov E, Epremyan K, **Siniavin A**, Zhernov Y, Cuevas MT, Delgado E, Sánchez-Martínez M, Carrera C, Kornilaeva G, Turgiev A, Bacqué J, Pérez-Álvarez L, Thomson MM (2018). HIV-1 Genetic Diversity in Recently Diagnosed Infections in Moscow: Predominance of A, Frequent Branching in Clusters, and Circulation of the Iberian Subtype G Variant. *AIDS Res Hum Retroviruses* 34 (7), 629–634, [10.1089/AID.2018.0055](https://doi.org/10.1089/AID.2018.0055)
33. **(конференция) Siniavin A**, Grinkina S, Zhernov Y, Shastina N, Khaitov M (2017). Antiretroviral activity of the conjugates 3'-azido-3'-deoxythymidine and derivatives of 1,3-diacylglycerides. *Allergy* 72, 164.
34. **(конференция) Epremyan K, Siniavin A**, Zhernov Y, Cuevas M, Sánchez M, Carrera C, Karamov E, Kornilaeva G, Turgiev A, Pérez-Álvarez L, Delgado E, Thomson MM (2017). HIV-1 molecular epidemiology in Moscow. , 57.
35. **(конференция) Thomson M, Epremyan K, Siniavin A**, Zhernov Y, Cuevas M, Sánchez M, Carrera C, Karamov E, Kornilaeva G, Turgiev A, Pérez-Álvarez L, Delgado E (2017). Phylogeography of the HIV-1 subtype G Iberian variant: ancestry in Cameroon and spread from the Iberian peninsula into cape verde and Western and Eastern Europe. , 11.
36. **(конференция) Синявин АЭ**, Гринкина СД, Шастина НС, Карамов ЭВ (2016). Антивирусная активность полигидроксильных соединений и их предшественников в отношении вируса иммунодефицита человека первого типа. 8 (4), 51.