# Резюме: Коршун Владимир Аркадьевич


## Адрес

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

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## Образование

| | | | |
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| 2012–2012 | Москва, Россия | ИБХ РАН | Диплом доктора химических наук, 2012 |
| 1989–1992 | Москва, СССР/ Россия | Аспирантура ИБХ АН СССР/РАН | Диплом кандидата химических наук, 1993 |
| 1982–1989 | Минск, СССР | Белорусский государственный университет | Диплом химика (с отличием) |

## Работа в ИБХ

| | |
|---|---|
| 2018–наст.вр. | Главный научный сотрудник |

## Членство в сообществах

Американское химическое общество

Член Учёного совета Института по изысканию новых антибиотиков им. Г.Ф. Гаузе РАМН

Член Президиума ВАК (2016-2019)

## Степени и звания

Доктор наук (Химические науки, 02.00.10 — Биоорганическая химия)

## Гранты и проекты

| | |
|---|---|
| 2023–наст.вр. | Амфипатические фотосенсибилизаторы в качестве противовирусных препаратов широкого спектра действия |
| 2021–2023 | Разработка средств профилактики и лечения COVID-19 и сопутствующих инфекционных заболеваний с использованием генетических технологий |
| 2020–2022 | Конъюгаты антибиотиков с антителами: рациональный дизайн для улучшения фармакологических свойств |
| 2020–2022 | Противовирусные соединения с широким спектром активности для терапии респираторных вирусных заболеваний |
| 2020–2022 | Полифункциональные линкеры для модификации биологически активных соединений |
| 2015–2019 | Амфипатические нуклеозиды и их конъюгаты в качестве противовирусных препаратов |

## Публикации


1. Gulyak EL, Komarova OA, Prokopenko YA, Faizullina EA, Malabuiok DM, Ibragimova AR, Mokrushina YA, Serova OV, Popova GP, Zhitlov MY, Nikitin TD, Brylev VA, Ustinov AV, Alferova VA, **Korshun VA**, Smirnov IV, Terekhov SS, Sapozhnikova KA (2024). Branched Linkers for Homogeneous Antibody-Drug Conjugates: How Long Is Long Enough? *Int J Mol Sci* 25 (24), 13356, 10.3390/ijms252413356
2. Alferova VA, Baranova AA, Belozerova OA, Gulyak EL, Mikhaylov AA, Solovev YV, Zhitlov MY, Sinichich AA, Tyurin AP, Trusova EA, Beletsky AV, Mardanov AV, Ravin NV, Lapchinskaya OA, **Korshun VA**, Gabibov AG, Terekhov SS (2024). Molecular Decoration and Unconventional Double Bond Migration in Irumamycin Biosynthesis. *Antibiotics (Basel)* 13 (12), 1167, 10.3390/antibiotics13121167
3. Maryewski XA, Larkin DY, Samoilichenko YV, Gvozdev DA, **Korshun VA**, Ustinov AV (2024). Fluorescence of BODIPY dyes in gas phase at near-ambient conditions. *Dyes Pigm* 231, , 10.1016/j.dyepig.2024.112366
4. Brylev VA, Ryabukhina EV, Nazarova EV, Samoylenkova NS, Gulyak EL, Sapozhnikova KA, Dzarieva FM, Ustinov AV, Pronin IN, Usachev DY, Kopylov AM, Golovin AV, Pavlova GV, Ryazantsev DY, **Korshun VA** (2024). Towards Aptamer-Targeted Drug Delivery to Brain Tumors: The Synthesis of Ramified Conjugates of an EGFR-Specific Aptamer with MMAE on a Cathepsin B-Cleavable Linker. *Pharmaceutics* 16 (11), , 10.3390/pharmaceutics16111434
5. Baranova AA, Alferova VA, **Korshun VA**, Tyurin AP (2024). Imaging-based profiling for elucidation of antibacterial mechanisms of action. *J Appl Biochem* , , 10.1002/bab.2681
6. Baranova AA, Zakalyukina YV, Tyurin AP, **Korshun VA**, Belozerova OA, Biryukov MV, Moiseenko AV, Terekhov SS, Alferova VA (2024). Antimicrobial Metabolites from Pig Nasal Microbiota. *Russ. J. Bioorganic Chem.* 50 (2), 354–374, 10.1134/S1068162024020237
7. Kravchenko TV, Paramonov AS, Kudzhaev AM, Efimova SS, Khorev AS, Kudryakova GK, Ivanov IA, Chistov AA, Baranova AA, Krasilnikov MS, Lapchinskaya OA, Tyurin AP, Ostroumova OS, Smirnov IV, Terekhov SS, Dontsova OA, Shenkarev ZO, Alferova VA, **Korshun VA** (2024). Gausemycin Antibiotic Family Acts via Ca2+-Dependent Membrane Targeting. *J. Nat. Prod.* 87 (4), 664–674, 10.1021/acs.jnatprod.3c00612
8. Prokhorenko IA, Glushchenko DA, Gulyak EL, Mikhura IV, **Korshun VA**, Mukhametova LI, Eremin SA (2024). Synthesis of Steroid Tracers by an Oxime Ligation Method and Their Use in Fluorescent Polarisation Immunoassay. *Russ. J. Bioorganic Chem.* 50 (1), 116–127, 10.1134/S1068162024010060
9. Gulyak EL, Alferova VA, **Korshun VA**, Sapozhnikova KA (2023). Introduction of Carbonyl Groups into Antibodies. *Molecules* 28 (23), 7890, 10.3390/molecules28237890
10. Mikhnovets IE, Holoubek J, Panina IS, Kotouček J, Gvozdev DA, Chumakov SP, Krasilnikov MS, Zhitlov MY, Gulyak EL, Chistov AA, Nikitin TD, **Korshun VA**, Efremov RG, Alferova VA, Růžek D, Eyer L, Ustinov AV (2023). Alkyl Derivatives of Perylene Photosensitizing Antivirals: Towards Understanding the Influence of Lipophilicity. *Int J Mol Sci* 24 (22), 16483, 10.3390/ijms242216483
11. Mariewskaya KA, Gvozdev DA, Chistov AA, Straková P, Huvarová I, Svoboda P, Kotouček J, Ivanov NM, Krasilnikov MS, Zhitlov MY, Pak AM, Mikhnovets IE, Nikitin TD, **Korshun VA**, Alferova VA, Mašek J, Růžek D, Eyer L, Ustinov AV (2023). Membrane-Targeting Perylenylethynylphenols Inactivate Medically Important Coronaviruses via the Singlet Oxygen Photogeneration Mechanism. *Molecules* 28 (17), 6278, 10.3390/molecules28176278
12. Baranova AA, Tyurin AP, **Korshun VA**, Alferova VA (2023). Sensing of Antibiotic–Bacteria Interactions. *Antibiotics (Basel)* 12 (8), 1340, 10.3390/antibiotics12081340
13. Kamzeeva PN, Aralov AV, Alferova VA, **Korshun VA** (2023). Recent Advances in Molecular Mechanisms of Nucleoside Antivirals. *Curr Issues Mol Biol* 45 (8), 6851–6879, 10.3390/cimb45080433
14. Straková P, Bednář P, Kotouček J, Holoubek J, Fořtová A, Svoboda P, Štefánik M, Huvarová I, Šimečková P, Mašek J, Gvozdev DA, Mikhnovets IE, Chistov AA, Nikitin TD, Krasilnikov MS, Ustinov AV, Alferova VA, **Korshun VA**, Růžek D, Eyer L (2023). Antiviral Activity of Singlet Oxygen-Photogenerating Perylene Compounds Against SARS-CoV-2: Interaction with the Viral Envelope and Photodynamic Virion Inactivation. *Virus Res* 334, 199158, 10.1016/j.virusres.2023.199158
15. Baranova AA, Alferova VA, **Korshun VA**, Tyurin AP (2023). Modern Trends in Natural Antibiotic Discovery. *Life (Basel)* 13 (5), 1073, 10.3390/life13051073
16. Veryutin DA, Doroshenko IA, Martynova EA, Sapozhnikova KA, Svirshchevskaya EV, Shibaeva AV, Markova AA, Chistov AA, Borisova NE, Shuvalov MV, **Korshun VA**, Alferova VA, Podrugina TA (2023). Probing

tricarbocyanine dyes for targeted delivery of anthracyclines. *Biochimie* 206, 12–23, 10.1016/j.biochi.2022.09.015
17. Alferova VA, Maviza TP, Biryukov MV, Zakalyukina YV, Polshakov VI, Sergiev PV, **Korshun VA**, Osterman IA (2023). Characterization of a novel natural tetracenomycin reveals crucial role of 4-hydroxy group in ribosome binding. *Biochimie* 206, 150–153, 10.1016/j.biochi.2022.10.016
18. Sapozhnikova KA, Gulyak EL, Brylev VA, Misyurin VA, Oreshkov SD, Alexeeva AV, Ryazantsev DY, Simonova MA, Ryabukhina EV, Popova GP, Tikhonova NA, Lyzhko NA, Barmashov AE, Misyurin AV, Ustinov AV, Alferova VA, **Korshun VA** (2023). Aminooxy Click Modification of a Periodate-Oxidized Immunoglobulin G: A General Approach to Antibody–Drug Conjugates with Dye-Mediated Expeditious Stoichiometry Control. *Int J Mol Sci* 24 (6), 5134, 10.3390/ijms24065134
19. Ilin VA, Pyzhik EV, Balakhonov AB, Kiryushin MA, Shcherbatova EV, Kuznetsov AA, Kostin PA, Golovin AV, **Korshun VA**, Brylev VA, Sapozhnikova KA, Kopylov AM, Pavlova GV, Pronin IN (2023). Radiochemical Synthesis of 4-[18F]FluorobenzylAzide and Its Conjugation with EGFR-Specific Aptamers. *Molecules* 28 (1), 294, 10.3390/molecules28010294
20. Mariewskaya KA, Krasilnikov MS, **Korshun VA**, Ustinov AV, Alferova VA (2023). Near-Infrared Dyes: Towards Broad-Spectrum Antivirals. *Int J Mol Sci* 24 (1), 188, 10.3390/ijms24010188
21. Chistov AA, Chumakov SP, Mikhnovets IE, Nikitin TD, Slesarchuk NA, Uvarova VI, Rubekina AA, Nikolaeva YV, Radchenko EV, Khvatov EV, Orlov AA, Frolenko VS, Sukhorukov MV, Kolpakova ES, Shustova EY, Galochkina AV, Streshnev PP, Osipov EM, Sapozhnikova KA, Moiseenko AV, Brylev VA, Proskurin GV, Dokukin YS, Kutyakov SV, Aralov AV, **Korshun VA**, Strelkov SV, Palyulin VA, Ishmukhametov AA, Shirshin EA, Osolodkin DI, Shtro AA, Kozlovskaya LI, Alferova VA, Ustinov AV (2023). 5-(Perylen-3-ylethynyl)uracil as an antiviral scaffold: Potent suppression of enveloped virus reproduction by 3-methyl derivatives in vitro. *Antiviral Res* 209, 105508, 10.1016/j.antiviral.2022.105508
22. Sapozhnikova KA, Gulyak EL, Misyurin VA, Simonova MA, Ryabukhina EV, Alexeeva AV, Tikhonova NA, Lyzhko NA, Popova GP, Misyurin AV, Ustinov AV, **Korshun VA**, Alferova VA, Ryazantsev DY, Brylev VA (2023). Branched Linkers for Site-Specific Fluorescent Labeling of Antibodies. *Molecules* 28 (1), 425, 10.3390/molecules28010425
23. Alferova VA, Mikhnovets IE, Chistov AA, **Korshun VA**, Tyurin AP, Ustinov AV (2022). Chapter Three - Perylene as a controversial antiviral scaffold. *Annu Rep Med Chem* 58, 93–156, 10.1016/bs.armc.2022.08.001
24. Baranova AA, Zakalyukina YV, Ovcharenko AA, **Korshun VA**, Tyurin AP (2022). Antibiotics from Insect-Associated Actinobacteria. *Biology (Basel)* 11 (11), 1676, 10.3390/biology11111676
25. Rubekina AA, Kamzeeva PN, Alferova VA, Shustova EY, Kolpakova ES, Yakovchuk EV, Karpova EV, Borodulina MO, Belyaev ES, Khrulev AA, **Korshun VA**, Shirshin EA, Kozlovskaya LI, Aralov AV (2022). Hydrophobic Rose Bengal Derivatives Exhibit Submicromolar-to-Subnanomolar Activity against Enveloped Viruses. *Biomolecules* 12 (11), 1609, 10.3390/biom12111609
26. Shtro AA, Garshinina AV, Alferova VA, Kamzeeva PN, Volok VP, Kolpakova ES, Nikitin TD, Chistov AA, Belyaev ES, **Korshun VA**, Kozlovskaya LI, Aralov AV (2022). Cationic Perylene Antivirals with Aqueous Solubility for Studies In Vivo. *Pharmaceuticals (Basel)* 15 (10), , 10.3390/ph15101178
27. Alferova VA, Maviza TP, Biryukov MV, Zakalyukina YV, Lukianov DA, Skvortsov DA, Vasilyeva LA, Tashlitsky VN, Polshakov VI, Sergiev PV, **Korshun VA**, Osterman IA (2022). Biological evaluation and spectral characterization of a novel tetracenomycin X congener. *Biochimie* 192, 63–71, 10.1016/j.biochi.2021.09.014
28. Sapozhnikova KA, Misyurin VA, Ryazantsev DY, Kokin EA, Finashutina YP, Alexeeva AV, Ivanov IA, Kocharovskaya MV, Tikhonova NA, Popova GP, Alferova VA, Ustinov AV, **Korshun VA**, Brylev VA (2021). Sensitive Immunofluorescent Detection of the PRAME Antigen Using a Practical Antibody Conjugation Approach. *Int J Mol Sci* 22 (23), 12845, 10.3390/ijms222312845
29. Ikonnikova VA, Solyev PN, Terekhov SS, Alferova VA, Tyurin AP, **Korshun VA**, Baranov MS, Mikhaylov AA (2021). Total Synthesis of Elmenols A and B and Related Rearranged Angucyclinones. *ChemistrySelect* 6 (42), 11775–11778, 10.1002/slct.202103755
30. Sapozhnikova KA, Misyurin AV, Pestov NB, Meleshkina EG, Oreshkov SD, Ganzhula EP, Mikhailova AS, **Korshun VA**, Misyurin VA, Brylev VA (2021). Detection of the PRAME Protein on the Surface of Melanoma Cells Using a Fluorescently Labeled Monoclonal Antibody. *Russ. J. Bioorganic Chem.* 47 (5), 1077–1085,

10.1134/S1068162021050332
31. Mariewskaya KA, Tyurin AP, Chistov AA, **Korshun VA**, Alferova VA, Ustinov AV (2021). Photosensitizing Antivirals. *Molecules* 26 (13), 3971, 10.3390/molecules26133971
32. Tyurin A, Alferova V, Paramonov A, Shuvalov M, Kudryakova G, Rogozhin E, Zherebker A, Brylev V, Chistov A, Baranova A, Birykov M, Ivanov I, Prokhorenko I, Grammatikova N, Kravchenko T, Isakova E, Mirchink E, Gladkikh E, Svirshchevskaya E, Mardanov A, Beletsky A, Kocharovskaya M, Kulyaeva V, Shashkov A, Nifantiev N, Apt A, Majorov K, Efimova S, Ravin N, Nikolaev E, Ostroumova O, Katrukha G, Lapchinskaya O, Dontsova O, Terekhov S, Osterman I, Shenkarev Z, **Korshun VA** (2021). Gausemycins A,B – cyclic lipoglycopeptides from Streptomyces sp. *Angew Chem Int Ed Engl* 60 (34), 18694–18703, 10.1002/anie.202104528
33. Brylev VA, Lysenko IL, Kokin EA, Martynenko-Makaev YV, Ryazantsev DY, Shmanai VV, **Korshun VA** (2021). Molecular Beacon DNA Probes with Fluorescein Bifluorophore. *Russ. J. Bioorganic Chem.* 47 (3), 734–740, 10.1134/S1068162021030055
34. Kozlovskaya LI, Volok VP, Shtro AA, Nikolaeva YV, Chistov AA, Matyugina ES, Belyaev ES, Jegorov AV, Snoeck R, **Korshun VA**, Andrei G, Osolodkin DI, Ishmukhametov AA, Aralov AV (2021). Phenoxazine nucleoside derivatives with a multiple activity against RNA and DNA viruses. *Eur J Med Chem* 220, 113467, 10.1016/j.ejmech.2021.113467
35. Baranova AA, Chistov AA, Shuvalov MV, Tyurin AP, Biryukov MV, Ivanov IA, Sadykova VS, Kurakov AV, Sergeeva AI, **Korshun VA**, Alferova VA (2021). Identification of isocyclosporins by collision-induced dissociation of doubly protonated species. *Talanta* 225, 121930, 10.1016/j.talanta.2020.121930
36. Baranova AA, Alferova VA, **Korshun VA**, Tyurin AP (2020). Antibiotics from extremophilic micromycetes. *Russ. J. Bioorganic Chem.* 46 (6), 903–971, 10.1134/S1068162020060023
37. Brylev VA, Ustinov AV, Tsvetkov VB, Barinov NA, Aparin IO, Sapozhnikova KA, Berlina YY, Kokin EA, Klinov DV, Zatsepin TS, **Korshun VA** (2020). Toehold-Mediated Selective Assembly of Compact Discrete DNA Nanostructures. *Langmuir* 36 (49), 15119–15127, 10.1021/acs.langmuir.0c02696
38. Baranova AA, Chistov AA, Tyurin AP, Prokhorenko IA, **Korshun VA**, Biryukov MV, Alferova VA, Zakalyukina YV (2020). Chemical ecology of streptomyces albidoflavus strain a10 associated with carpenter ant camponotus vagus. *Microorganisms* 8 (12), 1948, 10.3390/microorganisms8121948
39. Nikolayeva YV, Ulashchik EA, Chekerda EV, Galochkina AV, Slesarchuk NA, Chistov AA, Nikitin TD, **Korshun VA**, Shmanai VV, Ustinov AV, Shtro AA (2020). 5-(Perylen-3-ylethynyl)uracil Derivatives Inhibit Reproduction of Respiratory Viruses. *Russ. J. Bioorganic Chem.* 46 (3), 315–320, 10.1134/S1068162020030139
40. Aparin IO, Sergeeva OV, Mishin AS, Khaydukov EV, **Korshun VA**, Zatsepin TS (2020). Excimer-FRET Cascade in Dual DNA Probes: Open Access to Large Stokes Shift, Enhanced Acceptor Light up, and Robust RNA Sensing. *Anal Chem* 92 (10), 7028–7036, 10.1021/acs.analchem.0c00270
41. Slesarchuk NA, Khvatov EV, Chistov AA, Proskurin GV, Nikitin TD, Lazarevich AI, Ulanovskaya AA, Ulashchik EA, Orlov AA, Jegorov AV, Ustinov AV, Tyurin AP, Shmanai VV, Ishmukhametov AA, **Korshun VA**, Osolodkin DI, Kozlovskaya LI, Aralov AV (2020). Simplistic perylene-related compounds as inhibitors of tick-borne encephalitis virus reproduction. *Bioorg Med Chem Lett* 30 (10), 127100, 10.1016/j.bmcl.2020.127100
42. **(книга)** Kireev DE, Farzan VM, Shipulin GA, **Korshun VA**, Zatsepin TS (2020). RT-qPCR Detection of Low-Copy HIV RNA with Yin-Yang Probes. *Methods Mol Biol* 2063, 27–35, 10.1007/978-1-0716-0138-9_3
43. Sapozhnikova KA, Slesarchuk NA, Orlov AA, Khvatov EV, Radchenko EV, Chistov AA, Ustinov AV, Palyulin VA, Kozlovskaya LI, Osolodkin DI, **Korshun VA**, Brylev VA (2019). Ramified derivatives of 5-(perylen-3-ylethynyl)uracil-1-acetic acid and their antiviral properties. *RSC Adv* 9 (45), 26014–26023, 10.1039/c9ra06313g
44. Alferova VA, Shuvalov MV, **Korshun VA**, Tyurin AP (2019). Naphthoquinone-derived polyol macrolides from natural sources. *Russ Chem Bull* 68 (5), 955–966, 10.1007/s11172-019-2506-3
45. Chistov AA, Orlov AA, Streshnev PP, Slesarchuk NA, Aparin IO, Rathi B, Brylev VA, Kutyakov SV, Mikhura IV, Ustinov AV, Westman G, Palyulin VA, Jain N, Osolodkin DI, Kozlovskaya LI, **Korshun VA** (2019). Compounds based on 5-(perylen-3-ylethynyl)uracil scaffold: High activity against tick-borne encephalitis virus and non-specific activity against enterovirus A. *Eur J Med Chem* 171, 93–103, 10.1016/j.ejmech.2019.03.029

46. Farzan VM, Kvach MV, Aparin IO, Kireev DE, Prikazchikova TA, Ustinov AV, Shmanai VV, Shipulin GA, **Korshun VA**, Zatsepin TS (2019). Novel homo Yin-Yang probes improve sensitivity in RT-qPCR detection of low copy HIV RNA. *Talanta* 194, 226–232, 10.1016/j.talanta.2018.10.043
47. Kozlovskaya LI, Andrei G, Orlov AA, Khvatov EV, Koruchekov AA, Belyaev ES, Nikolaev EN, **Korshun VA**, Snoeck R, Osolodkin DI, Matyugina ES, Aralov AV (2019). Antiviral activity spectrum of phenoxazine nucleoside derivatives. *Antiviral Res* S0166 (18), 30717–4, 10.1016/j.antiviral.2019.01.010
48. Alferova VA, Shuvalov MV, Novikov RA, Trenin AS, Dezhenkova LG, Gladkikh EG, Lapchinskaya OA, Kulyaeva VV, Bychkova OP, Mirchink EP, Solyev PN, Kudryakova GK, **Korshun VA**, Tyurin AP (2019). Structure-activity studies of irumamycin type macrolides from Streptomyces sp. INA-Ac-5812. *Tetrahedron Lett* 60 (21), 1448–1451, 10.1016/j.tetlet.2019.04.051
49. Alferova VA, Shuvalov MV, Suchkova TA, Proskurin GV, Aparin IO, Rogozhin EA, Novikov RA, Solyev PN, Chistov AA, Ustinov AV, Tyurin AP, **Korshun VA** (2018). 4-Chloro-l-kynurenine as fluorescent amino acid in natural peptides. *Amino Acids* 50 (12), 1697–1705, 10.1007/s00726-018-2642-3
50. Alferova VA, Novikov RA, Bychkova OP, Rogozhin EA, Shuvalov MV, Prokhorenko IA, Sadykova VS, Kulko AB, Dezhenkova LG, Stepashkina EA, Efremov MA, Sineva ON, Kudryakova GK, Peregudov AS, Solyev PN, Tkachev YV, Fedorova GB, Terekhova LP, Tyurin AP, Trenin AS, **Korshun VA** (2018). Astolides A and B, antifungal and cytotoxic naphthoquinone-derived polyol macrolactones from Streptomyces hygroscopicus. *Tetrahedron* 74 (52), 7442–7449, 10.1016/j.tet.2018.11.015
51. Proskurin GV, Orlov AA, Brylev VA, Kozlovskaya LI, Chistov AA, Karganova GG, Palyulin VA, Osolodkin DI, **Korshun VA**, Aralov AV (2018). 3′-O-Substituted 5-(perylen-3-ylethynyl)-2′-deoxyuridines as tick-borne encephalitis virus reproduction inhibitors. *Eur J Med Chem* 155, 77–83, 10.1016/j.ejmech.2018.05.040
52. Tyurin AP, Alferova VA, **Korshun VA** (2018). Chemical Elicitors of Antibiotic Biosynthesis in Actinomycetes. *Microorganisms* 6 (2), 52, 10.3390/microorganisms6020052
53. Jiang ZK, Tuo L, Huang DL, Osterman IA, Tyurin AP, Liu SW, Lukyanov DA, Sergiev PV, Dontsova OA, **Korshun VA**, Li FN, Sun CH (2018). Diversity, novelty, and antimicrobial activity of endophytic actinobacteria from mangrove plants in Beilun Estuary National Nature Reserve of Guangxi, China. *Front Microbiol* 9 (MAY), 868, 10.3389/fmicb.2018.00868
54.