

Резюме: Болдырев Иван Александрович



Адрес

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Институт биоорганической химии им.
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Образование

2004– 2007	Москва	Институт Биоорганической Химии	кандидат химических наук. Тема диссертации "Разработка флуоресцентных зондов на основе производных дипиррометена для исследования свойств мембран"
1998– 2004	Москва	Московская Государственная Академия Тонкой Химической Технологии им. М.В. Ломоносова	Инженер (Биотехнология)

Работа в ИБХ

2014–2024	Старший научный сотрудник
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Научные интересы

1. Связь структуры липидов со строением липидных агрегатов.
2. Проектирование (и последующий синтез) липидных производных с учетом строения липидных агрегатов и липид-белковых комплексов.
3. Способы упрощения синтеза липидных производных, минимизация числа стадий синтеза, адаптация синтетических схем для производства.

Членство в сообществах

Associated Editor in [Lipids, Membranes and Membranous Organelles](#) section in Frontiers of Molecular Biosciences.

Степени и звания

Кандидат наук (Химические науки, 02.00.10 — Биоорганическая химия)

Гранты и проекты

2022– 2024	Исследование структурной организации толл-подобных рецепторов и их сигнальных комплексов по данным ЯМР-спектроскопии
2021– 2024	Белковая корона липосом и ее влияние на взаимодействия с клетками кровеносного русла
2020– 2022	Разработка прототипа вакцинной конструкции для лечения и профилактики новой коронавирусной инфекции COVID-19 на основе липосом с набором Т-клеточных эпитопов
2020–	Оптические молекулярные переключатели для управления свойствами липидного бислоя

Публикации

1. Ryabukhina E, Kobanenko M, Tretiakova D, Shchegravina E, Khaidukov S, Alekseeva A, **Boldyrev I**, Zgoda V, Tikhonova O, Fedorov AY, Onishchenko N, Vodovozova E (2025). Plasma protein corona of liposomes loaded with a phospholipid-allocholchicinoid conjugate enhances their anti-inflammatory potential. *Colloids Surf B Biointerfaces* 253, 114746, [10.1016/j.colsurfb.2025.114746](https://doi.org/10.1016/j.colsurfb.2025.114746)
2. Motov VV, Kot EF, Kislova SO, Bocharov EV, Arseniev AS, **Boldyrev IA**, Goncharuk SA, Mineev KS (2024). On the Properties of Styrene–Maleic Acid Copolymer–Lipid Nanoparticles: A Solution NMR Perspective. *Polymers (Basel)* 16 (21), 3009, [10.3390/polym16213009](https://doi.org/10.3390/polym16213009)
3. Tretiakova DS, Volynsky PE, Kobanenko MK, Alekseeva AS, Le-Deygen IM, Vodovozova EL, **Boldyrev IA** (2024). Phosphatidylglycerol in lipid bilayer. Molecular recognition, conformational transitions, hydrogen bonding and microviscosity. *J Mol Liq* 411, , [10.1016/j.molliq.2024.125688](https://doi.org/10.1016/j.molliq.2024.125688)
4. Volynsky PE, Alekseeva AS, **Boldyrev IA** (2024). Influence of Lipid Conformations on the Interaction Energy between a Membrane and a Peripheral Protein. *JETP Lett* 119 (8), 643–648, [10.1134/S0021364024600460](https://doi.org/10.1134/S0021364024600460)
5. Kislova S, Motov V, Myasnyanko I, Pytskii I, Goncharuk S, **Boldyrev I** (2024). Conformational transitions of maleic acid segment drive pH induced changes in SMA polymer structure and solubility. *J Mol Liq* 398, , [10.1016/j.molliq.2024.124302](https://doi.org/10.1016/j.molliq.2024.124302)
6. Shchegravina ES, Tretiakova DS, Sitdikova AR, Usova SD, **Boldyrev IA**, Alekseeva AS, Svirshchevskaya EV, Vodovozova EL, Fedorov AY (2023). Design and preparation of pH-sensitive cytotoxic liposomal formulations containing antitumor colchicine analogues for target release. *J Liposome Res* 34 (3), 1–17, [10.1080/08982104.2023.2274428](https://doi.org/10.1080/08982104.2023.2274428)
7. Tretiakova DS, Azhikina TL, **Boldyrev IA**, Svirshchevskaya EV, Vodovozova EL (2023). Synthesis of Liposomes Conjugated with CpG-Oligonucleotide and Loaded with a Set of T-Cell Epitopes of the SARS-CoV-2 Virus. *Russ. J. Bioorganic Chem.* 49 (4), 905–911, [10.1134/S1068162023040210](https://doi.org/10.1134/S1068162023040210)
8. Tretiakova D, Kobanenko M, Alekseeva A, **Boldyrev I**, Khaidukov S, Zgoda V, Tikhonova O, Vodovozova E, Onishchenko N (2023). Protein Corona of Anionic Fluid-Phase Liposomes Compromises Their Integrity Rather than Uptake by Cells. *Membranes (Basel)* 13 (7), 681, [10.3390/membranes13070681](https://doi.org/10.3390/membranes13070681)
9. Alekseeva AS, **Boldyrev IA** (2023). Alternative Targets for sPLA2 Activity: Role of Membrane-Enzyme Interactions. *Membranes (Basel)* 13 (7), , [10.3390/membranes13070618](https://doi.org/10.3390/membranes13070618)
10. Onishchenko NR, Moskovtsev AA, Kobanenko MK, Tretiakova DS, Alekseeva AS, Kolesov DV, Mikryukova AA, **Boldyrev IA**, Kapkaeva MR, Shcheglovitova ON, Bovin NV, Kubatiev AA, Tikhonova OV, Vodovozova EL (2023). Protein Corona Attenuates the Targeting of Antitumor Sialyl Lewis X-Decorated Liposomes to Vascular Endothelial Cells under Flow Conditions. *Pharmaceutics* 15 (6), 1754, [10.3390/pharmaceutics15061754](https://doi.org/10.3390/pharmaceutics15061754)
11. **Boldyrev IA**, Shendrikov VP, Vostrova AG, Vodovozova EL (2023). A Route to Synthesize Ionizable Lipid ALC-0315, a Key Component of the mRNA Vaccine Lipid Matrix. *Russ. J. Bioorganic Chem.* 49 (2), 412–415, [10.1134/S1068162023020061](https://doi.org/10.1134/S1068162023020061)
12. Tretiakova DS, Alekseeva AS, Onishchenko NR, **Boldyrev IA**, Egorova NS, Vasina DV, Gushchin VA, Chernov AS, Telegin GB, Kazakov VA, Plokhikh KS, Konovalova MV, Svirshchevskaya EV, Vodovozova EL (2023). Proof-of-Concept Study of Liposomes with a Set of SARS-CoV-2 Viral Peptidic T-Cell Epitopes as a Vaccine. *Russ. J. Bioorganic Chem.* 48 (S1), S23–S37, [10.1134/S1068162022060255](https://doi.org/10.1134/S1068162022060255)
13. Semyachkina-Glishkovskaya O, Shirokov A, Blokhina I, Telnova , Vodovozova E, Alekseeva A, **Boldyrev I**, Fedosov I, Dubrovsky A, Khorovodov A, Terskov A, Evsukova A, Elovenko D, Adushkina V, Tzoy M, Kurthz J, Rafilov E (2023). Intranasal Delivery of Liposomes to Glioblastoma by Photostimulation of the Lymphatic System. *Pharmaceutics* 15 (1), 36, [10.3390/pharmaceutics15010036](https://doi.org/10.3390/pharmaceutics15010036)
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15. Kramarova EP, Borisevich SS, Khamitov EM, Korlyukov AA, Dorovatovskii PV, Shagina AD, Mineev KS, Tarasenko DV, Novikov RA, Lagunin AA, **Boldyrev I**, Ezdoglian AA, Karpechenko NY, Shmigol TA, Baukov YI, Negrebetsky VV (2022). Pyridine Carboxamides Based on Sulfobetaines: Design, Reactivity, and

- Biological Activity. *Molecules* 27 (21), , [10.3390/molecules27217542](https://doi.org/10.3390/molecules27217542)
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 32. Mineev KS, Volynsky PE, Galimzyanov TR, Tretiakova DS, Bobrov MY, Alekseeva AS, **Boldyrev IA** (2020). Archaeal cyclopentane fragment in a surfactant's hydrophobic tail decreases the Krafft point. *Soft Matter* 16 (5), 1333–1341, [10.1039/c9sm02000d](https://doi.org/10.1039/c9sm02000d)
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 36. Ochoa-Lizarralde B, Gao YG, Popov AN, Samygina VR, Zhai X, Mishra SK, **Boldyrev IA**, Molotkovsky JG, Simanshu DK, Patel DJ, Brown RE, Malinina L (2018). Structural analyses of 4-phosphate adaptor protein 2 yield mechanistic insights into sphingolipid recognition by the glycolipid transfer protein family. *J Biol Chem* 293 (43), 16709–16723, [10.1074/jbc.RA117.000733](https://doi.org/10.1074/jbc.RA117.000733)
 37. Zhang C, Feng WEI, Vodovozova E, Tretiakova D, **Boldyrev I**, Li Y, Kürths J, Yu T, Semyachkina-Glushkovskaya O, Zhu DAN (2018). Photodynamic opening of the blood-brain barrier to high weight molecules and liposomes through an optical clearing skull window. *Biomed Opt Express* 9 (10), 4850, [10.1364/BOE.9.004850](https://doi.org/10.1364/BOE.9.004850)
 38. Tretiakova D, Onishchenko N, **Boldyrev I**, Mikhalyov I, Tuzikov A, Bovin N, Evtushenko E, Vodovozova E (2018). Influence of stabilizing components on the integrity of antitumor liposomes loaded with lipophilic prodrug in the bilayer. *Colloids Surf B Biointerfaces* 166, 45–53, [10.1016/j.colsurfb.2018.02.061](https://doi.org/10.1016/j.colsurfb.2018.02.061)
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