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Адрес

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Контакты

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Образование

1970– 2007	Россия, Москва	Московский государственный университет имени М.В. Ломоносова (МГУ), Биологический факультет	Присвоено ученое звание профессора по специальности «биофизика».
1970– 1999	Россия, Москва	Московский государственный университет имени М.В. Ломоносова (МГУ), Биологический факультет	Диплом доктора физико-математических наук (тема диссертации: «Молекулярное моделирование мембрано- связанных участков белков и пептидов»)
1970– 1986	Россия, Москва	Московский государственный университет имени М.В. Ломоносова (МГУ), Биологический факультет	Диплом кандидата физико-математических наук (тема диссертации: «Топография и микроокружение хромофоров в бактериальном и зрительном родопсинах (спектроскопия комбинационного рассеяния света и квантовохимические расчеты)»)
1977– 1983	Россия, Москва	Московский инженерно- физический институт (МИФИ), Факультет экспериментальной и теоретической физики	Диплом с отличием (тема: «Математические методы определения вторичной структуры белков и полипептидов на основании спектров КР и полуэмпирических расчетов»)

Работа в ИБХ

2018–наст.вр.	Главный научный сотрудник
2018–наст.вр.	Ведущий научный сотрудник
2021–наст.вр.	Заместитель директора по науке

Членство в советах и комиссиях ИБХ

Методическая комиссия
Диссертационный совет
Ученый совет
Аттестационная комиссия

Членство в сообществах

Член редколлегии журналов «Биоорганическая химия», Москва; «The Open Structural Biology Journal», «The Open Bioinformatics Journal».

Член Ученого Совета ИБХ РАН.

Член специализированных диссертационных советов (МГУ, ГУ НИИ БМХ РАМН).

Степени и звания

Профессор

Доктор наук (Физико-математические науки, 03.00.02 — Биофизика)

Гранты и проекты

2018–2020 [Молекулярно-биофизические аспекты олигомеризации мембранных доменов рецепторов, определяющие клеточную сигнализацию в норме и онкогенезе](#)

2018–2021 [Управление димеризацией сиалидазы NEU1 как перспективный подход к лечению атеросклероза](#)

2019–2021 [Динамический «молекулярный портрет» клеточной мембраны и его биологическая роль](#)

2019–наст.вр. [Структурная биология мембранных белков для создания новых лекарственных и диагностических средств](#)

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- Gigolaev AM, Lushpa VA, Pinheiro-Junior EL, Tabakmakher VM, Peigneur S, Ignatova AA, Feofanov AV, **Efremov RG**, Mineev KS, Tytgat J, Vassilevski AA (2022). Artificial pore blocker acts specifically on voltage-gated potassium channel isoform KV1.6. *J Biol Chem*, 102467, [10.1016/j.jbc.2022.102467](#)
- Aliper ET, Krylov NA, Nolde DE, Polyansky AA, **Efremov RG** (2022). A Uniquely Stable Trimeric Model of SARS-CoV-2 Spike Transmembrane Domain. *Int J Mol Sci* 23 (16), , [10.3390/ijms23169221](#)
- Panina I, Krylov N, Gadalla MR, Aliper E, Kordyukova L, Veit M, Chugunov A, **Efremov R** (2022). Molecular Dynamics of DHHC20 Acyltransferase Suggests Principles of Lipid and Protein Substrate Selectivity. *Int J Mol Sci* 23 (9), , [10.3390/ijms23095091](#)
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- Volynsky P, Maltseva D, Tabakmakher V, Bocharov EV, Raygorodskaya M, Zakharova G, Britikova E, Tonevitsky A, **Efremov R** (2022). Differences in Medium-Induced Conformational Plasticity Presumably Underlie Different Cytotoxic Activity of Ricin and Viscumin. *Biomolecules* 12 (2), , [10.3390/biom12020295](#)
- Lohan S, Mandal D, Choi W, Konshina AG, Tiwari RK, **Efremov RG**, Maslennikov I, Parang K (2022). Small Amphiphilic Peptides: Activity Against a Broad Range of Drug-Resistant Bacteria and Structural Insight into Membranolytic Properties. *J Med Chem* 65 (1), 665–687, [10.1021/acs.jmedchem.1c01782](#)
- Bocharov EV, Gremer L, Urban AS, Okhrimenko IS, Volynsky PE, Nadezhdin KD, Bocharova OV, Kornilov DA, Zagryadskaya YA, Kamynina AV, Kuzmichev PK, Kutzsche J, Bolakhrif N, Müller-Schiffmann A, Dencher NA, Arseniev AS, **Efremov RG**, Gordeliy VI, Willbold D (2021). All-d-Enantiomeric Peptide D3 Designed for Alzheimer's Disease Treatment Dynamically Interacts with Membrane-Bound Amyloid- β Precursors. *J Med*

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9. Panina I, Taldaev A, **Efremov R**, Chugunov A (2021). Molecular dynamics insight into the lipid II recognition by type A lantibiotics: Nisin, epidermin, and gallidermin. *Micromachines (Basel)* 12 (10), [10.3390/mi12101169](https://doi.org/10.3390/mi12101169)
 10. Kulbatskii D, Shenkarev Z, Bychkov M, Loktyushov E, Shulepko M, Koshelev S, Povarov I, Popov A, Peigneur S, Chugunov A, Kozlov S, Sharonova I, **Efremov R**, Skrebitsky V, Tytgat J, Kirpichnikov M, Lyukmanova E (2021). Human Three-Finger Protein Lypd6 Is a Negative Modulator of the Cholinergic System in the Brain. *Front Cell Dev Biol* 9, 662227, [10.3389/fcell.2021.662227](https://doi.org/10.3389/fcell.2021.662227)
 11. Chernykh MA, Kuldyushev NA, Peigneur S, Berkut AA, Tytgat J, **Efremov RG**, Vassilevski AA, Chugunov AO (2021). Derivative of Scorpion Neurotoxin BeM9 Is Selective for Insect Voltage-Gated Sodium Channels. *Russ. J. Bioorganic Chem.* 47 (4), 854–863, [10.1134/S1068162021040063](https://doi.org/10.1134/S1068162021040063)
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 13. **Efremov RG** (2021). Dynamic “molecular portraits” of biomembranes drawn by their lateral nanoscale inhomogeneities. *Int J Mol Sci* 22 (12), [10.3390/ijms22126250](https://doi.org/10.3390/ijms22126250)
 14. Tabakmakher VM, Kuzmenkov AI, Gigolaev AM, Pinheiro-Junior EL, Peigneur S, **Efremov RG**, Tytgat J, Vassilevski AA (2021). Artificial Peptide Ligand of Potassium Channel KV1.1 with High Selectivity. *J Evol Biochem Physiol* 57, 386–403, [10.1134/S0022093021020186](https://doi.org/10.1134/S0022093021020186)
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 32. Trofimov YA, Krylov NA, **Efremov RG** (2019). Confined Dynamics of Water in Transmembrane Pore of TRPV1 Ion Channel. *Int J Mol Sci* 20 (17), , [10.3390/ijms20174285](https://doi.org/10.3390/ijms20174285)
 33. Bocharov EV, Nadezhdin KD, Urban AS, Volynsky PE, Pavlov KV, **Efremov RG**, Arseniev AS, Bocharova OV (2019). Familial L723P Mutation Can Shift the Distribution between the Alternative APP Transmembrane Domain Cleavage Cascades by Local Unfolding of the η -Cleavage Site Suggesting a Straightforward Mechanism of Alzheimer's Disease Pathogenesis. *ACS Chem Biol* 14 (7), 1573–1582, [10.1021/acscchembio.9b00309](https://doi.org/10.1021/acscchembio.9b00309)
 34. Bennisroune A, Romier-Crouzet B, Blaise S, Laffargue M, **Efremov RG**, Martiny L, Maurice P, Duca L (2019). Elastic fibers and elastin receptor complex: Neuraminidase-1 takes the center stage. *Matrix Biol* 84, 57–67, [10.1016/j.matbio.2019.06.007](https://doi.org/10.1016/j.matbio.2019.06.007)
 35. Tabakmakher VM, Krylov NA, Kuzmenkov AI, **Efremov RG**, Vassilevski AA (2019). Kalium 2.0, a comprehensive database of polypeptide ligands of potassium channels. *Sci Data* 6 (1), 73, [10.1038/s41597-019-0074-x](https://doi.org/10.1038/s41597-019-0074-x)
 36. Polyansky AA, Bocharov EV, Velghe AI, Kuznetsov AS, Bocharova OV, Urban AS, Arseniev AS, Zagrovic B, Demoulin JB, **Efremov RG** (2019). Atomistic mechanism of the constitutive activation of PDGFRA via its transmembrane domain. *BIOCHIM BIOPHYS ACTA* 1863 (1), 82–95, [10.1016/j.bbagen.2018.09.011](https://doi.org/10.1016/j.bbagen.2018.09.011)
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 38. **Efremov RG** (2019). Dielectric-Dependent Strength of Interlipid Hydrogen Bonding in Biomembranes: Model Case Study. *J Chem Inf Model* 59 (6), 2765–2775, [10.1021/acs.jcim.9b00193](https://doi.org/10.1021/acs.jcim.9b00193)
 39. Pletneva NV, **Efremov RG**, Goryacheva EA, Artemyev IV, Arkhipova SF, Pletnev VZ (2018). Crystal Structure of the pH-Dependent Green Fluorescent Protein WasCFP with a Tryptophan-Based Chromophore at an Extremely Low pH of 2.0. *Bioorg Khim* 44 (6), 635–639, [10.1134/S0132342318060088](https://doi.org/10.1134/S0132342318060088)
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46. Dubovskii PV, Ignatova AA, Volynsky PE, Ivanov IA, Zhmak MN, Feofanov AV, **Efremov RG** (2018). Improving therapeutic potential of antibacterial spider venom peptides: coarse-grain molecular dynamics guided approach. *Future Med Chem* 10 (19), 2309–2322, [10.4155/fmc-2018-0170](https://doi.org/10.4155/fmc-2018-0170)
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52. **(конференция)** Kuznetsov AS, Smirnov KV, Antonov MY, Nikolaev IN, **Efremov RG** (2017). Molecular modeling of biomembranes and their complexes with protein transmembrane α -helices. *AIP Conf Proc* 1907, , [10.1063/1.5012645](https://doi.org/10.1063/1.5012645)
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54. Нольде ДЕ, Крылов НА, Телегин ПН, **Ефремов РГ**, Шабанов БМ (2017). Производительность современных вычислительных платформ в расчетах молекулярной динамики белок - мембранных систем. *Труды НИИСИ РАН* 7 (4), 157–161.
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