

## Резюме: Ефремов Роман Гербертович



### 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/users/5>

## 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

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Профессор

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

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## Гранты и проекты

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2018–2022 [Молекулярно-биофизические аспекты олигомеризации мембранных доменов рецепторов, определяющие клеточную сигнализацию в норме и онкогенезе](#)

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

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

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2019–2022 [Структурная биология мембранных белков для создания новых лекарственных и диагностических средств](#)

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## Публикации

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2. Goryacheva E, **Efremov R**, Krylov N, Artemyev I, Bogdanov A, Mamontova A, Pletnev S, Pletneva N, Pletnev V (2023). Crystal Structure of Bright Fluorescent Protein BrUSLEE with Subnanosecond Fluorescence Lifetime; Electric and Dynamic Properties. *Int J Mol Sci* 24 (7), 6403, [10.3390/ijms24076403](https://doi.org/10.3390/ijms24076403)
3. Bershatsky YV, Kuznetsov AS, Idiatullina AR, Bocharova OV, Dolotova SM, Gavrilenkova AA, Serova OV, Deyev IE, Rakitina TV, Zangieva OT, Pavlov KV, Batishchev OV, Britikov VV, Usanov SA, Arseniev AS, **Efremov RG**, Bocharov EV (2023). Diversity of Structural, Dynamic, and Environmental Effects Explain a Distinctive Functional Role of Transmembrane Domains in the Insulin Receptor Subfamily. *Int J Mol Sci* 24 (4), , [10.3390/ijms24043906](https://doi.org/10.3390/ijms24043906)
4. Trofimov YA, Minakov AS, Krylov NA, **Efremov RG** (2023). Structural Mechanism of Ionic Conductivity of the TRPV1 Channel. *Dokl Biochem Biophys* , , [10.1134/S1607672922600245](https://doi.org/10.1134/S1607672922600245)
5. Panina IS, Balandin SV, Tsarev AV, Chugunov AO, Tagaev AA, Finkina EI, Antoshina DV, Sheremeteva EV, Paramonov AS, Rickmeyer J, Bierbaum G, **Efremov RG**, Shenkarev ZO, Ovchinnikova TV (2023). Specific Binding of the  $\alpha$ -Component of the Lantibiotic Lichenicidin to the Peptidoglycan Precursor Lipid II Predetermines Its Antimicrobial Activity. *Int J Mol Sci* 24 (2), 1332, [10.3390/ijms24021332](https://doi.org/10.3390/ijms24021332)
6. Polyansky AA, **Efremov RG** (2023). On a mechanistic impact of transmembrane tetramerization in the pathological activation of RTKs. *Comput Struct Biotechnol J* 21, 2837–2844, [10.1016/j.csbj.2023.04.021](https://doi.org/10.1016/j.csbj.2023.04.021)
7. Lohan S, Konshina AG, **Efremov RG**, Maslennikov I, Parang K (2022). Structure-Based Rational Design of Small  $\alpha$ -Helical Peptides with Broad-Spectrum Activity against Multidrug-Resistant Pathogens. *J Med Chem* 66 (1), 855–874, [10.1021/acs.jmedchem.2c01708](https://doi.org/10.1021/acs.jmedchem.2c01708)
8. Goncharuk MV, Baleeva NS, Nolde DE, Gavrikov AS, Mishin AV, Mishin AS, Sosorev AY, Arseniev AS, Goncharuk SA, Borshchevskiy VI, **Efremov RG**, Mineev KS, Baranov MS (2022). Structure-based rational design of an enhanced fluorogen-activating protein for fluorogens based on GFP chromophore. *Commun Biol*

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9. Panina IS, Krylov NA, Chugunov AO, **Efremov RG**, Kordyukova LV (2022). The Mechanism of Selective Recognition of Lipid Substrate by hDHHC20 Enzyme. *Int J Mol Sci* 23 (23), 14791, [10.3390/ijms232314791](https://doi.org/10.3390/ijms232314791)
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12. 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](https://doi.org/10.3390/ijms23095091)
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15. 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](https://doi.org/10.1021/acs.jmedchem.1c01782)
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33. Lubova KI, Chugunov AO, Volynsky PE, Trofimov Y, Korolkova YV, Mosharova IV, Kozlov SA, Andreev YA, **Efremov RG** (2020). Probing temperature and capsaicin-induced activation of TRPV1 channel via computationally guided point mutations in its pore and TRP domains. *Int J Biol Macromol* 158, 1175–1183, [10.1016/j.ijbiomac.2020.04.239](https://doi.org/10.1016/j.ijbiomac.2020.04.239)
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36. Kudryavtsev DS, Tabakmakher VM, Budylin GS, Egorova NS, **Efremov RG**, Ivanov IA, Belukhina SY, Jegorov AV, Kasheverov IE, Kryukova EV, Shelukhina IV, Shirshin EA, Zhdanova NG, Zhmak MN, Tsetlin VI (2020). Complex approach for analysis of snake venom  $\alpha$ -neurotoxins binding to HAP, the high-affinity peptide. *Sci Rep* 10 (1), 3861, [10.1038/s41598-020-60768-y](https://doi.org/10.1038/s41598-020-60768-y)
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47. 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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