

## Резюме: Чугунов Антон Олегович



### Адрес

Федеральное государственное  
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Институт биоорганической химии им.  
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## Образование

2008– 2008	Брюссель, Бельгия	Стажировка в Свободном университете Брюсселя	Моделирование структуры комплекса вазоактивного интестинального пептида (ВИП) с его рецептором. Дизайн селективной пары неорецептор-неолиганд
2003– 2006	Россия, Москва	Московский государственный университет им. М.В. Ломоносова, кафедра биоинженерии биологического факультета	Диплом кандидата физико-математических наук. Тема диссертации: «Новые подходы к молекулярному моделированию трансмембранных доменов рецепторов, действие которых опосредовано G-белками»
1998– 2003	Россия, Москва	Московский государственный университет им. М.В. Ломоносова, кафедра биофизики биологического факультета	Диплом биофизика с отличием по теме: «Молекулярное моделирование человеческих рецепторов MT1 и MT2 мелатонина»
1994– 1998	Россия, Зеленоград	ФМШ №1030	Окончил с золотой медалью

## Работа в ИБХ

2018–наст.вр.	Старший научный сотрудник
	Старший научный сотрудник

## Членство в советах и комиссиях ИБХ

Ученый совет
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## Владение языками

Русский, Английский

## Награды

2013	Медаль Европейской Академии	За работу «Компьютерное моделирование структуры и функций биомембран и мембранных белков»
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## Научные интересы

Меня интересуют принципы пространственной организации белков и механизмы их сворачивания. В первую очередь это касается мембранных белков и рецепторов, таких как G-белоксопращённые рецепторы. Поскольку выбранная мной методическая сфера — это компьютерное моделирование структуры и динамики биомолекул, больше всего мне интересно, удастся ли когда-нибудь моделировать все эти важнейшие процессы на компьютере — без такой большой оглядки на эксперимент, которую всегда приходится делать теперь.

## Степени и звания

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

## Ссылки и контакты

<http://biomolecula.ru>

## Публикации

1. Zavarzina II, Kuzmenkov AI, Dobrokhoto NA, Maleeva EE, Korolkova YV, Peigneur S, Tytgat J, Krylov NA, Vassilevski AA, **Chugunov AO** (2024). The scorpion toxin BeKm-1 blocks hERG cardiac potassium channels using an indispensable arginine residue. *FEBS Lett* , , [10.1002/1873-3468.14850](https://doi.org/10.1002/1873-3468.14850)
2. Lyukmanova EN, Zaigraev MM, Kulbatskii DS, Isaev AB, Kukushkin ID, Bychkov ML, Shulepko MA, **Chugunov AO**, Kirpichnikov MP (2023). Molecular Basis for Mambalgins-2 Interaction with Heterotrimeric  $\alpha$ -ENaC/ASIC1a/ $\gamma$ -ENaC Channels in Cancer Cells. *Toxins (Basel)* 15 (10), 612, [10.3390/toxins15100612](https://doi.org/10.3390/toxins15100612)
3. **Chugunov AO**, Dvoryakova EA, Dyuzheva MA, Simonyan TR, Tereshchenkova VF, Filippova IY, Efremov RG, Elpidina EN (2023). Fighting Celiac Disease: Improvement of pH Stability of Cathepsin L In Vitro by Computational Design. *Int J Mol Sci* 24 (15), , [10.3390/ijms241512369](https://doi.org/10.3390/ijms241512369)
4. 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)
5. Zaigraev MM, Lyukmanova EN, Paramonov AS, Shenkarev ZO, **Chugunov AO** (2022). Orientational Preferences of GPI-Anchored Ly6/uPAR Proteins. *Int J Mol Sci* 24 (1), 11, [10.3390/ijms24010011](https://doi.org/10.3390/ijms24010011)
6. Shenkarev ZO, Chesnokov YM, Zaigraev MM, **Chugunov AO**, Kulbatskii DS, Kocharovskaya MV, Paramonov AS, Bychkov ML, Shulepko MA, Nolde DE, Kamysinsky RA, Yablokov EO, Ivanov AS, Kirpichnikov MP, Lyukmanova EN (2022). Membrane-mediated interaction of non-conventional snake three-finger toxins with nicotinic acetylcholine receptors. *Commun Biol* 5 (1), 1344, [10.1038/s42003-022-04308-6](https://doi.org/10.1038/s42003-022-04308-6)
7. 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)
8. 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)
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. **Chugunov AO**, Potapova NA, Klimenko NS, Tatarskiy VV, Georgieva SG, Soshnikova NV (2021). Conserved structure and evolution of dpf domain of phf10—the specific subunit of pbaf chromatin remodeling complex. *Int J Mol Sci* 22 (20), , [10.3390/ijms222011134](https://doi.org/10.3390/ijms222011134)
11. 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)
12. 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)

13. Tabakmakher VM, Gigolaev AM, Peigneur S, Krylov NA, Tytgat J, **Chugunov AO**, Vassilevski AA, Efremov RG (2021). Potassium channel blocker crafted by  $\alpha$ -hairpinin scaffold engineering. *Biophys J* 120 (12), 2471–2481, [10.1016/j.bpj.2021.04.020](https://doi.org/10.1016/j.bpj.2021.04.020)
14. Shulepko MA, Bychkov ML, Shenkarev ZO, Kulbatskii DS, Makhonin AM, Paramonov AS, **Chugunov AO**, Kirpichnikov MP, Lyukmanova EN (2021). Biochemical basis of skin disease Mal de Meleda: SLURP-1 mutants differently affect keratinocyte proliferation and apoptosis. *J Invest Dermatol* 141 (9), 2229–2237, [10.1016/j.jid.2021.01.035](https://doi.org/10.1016/j.jid.2021.01.035)
15. Belozero OA, Osmakov DI, Vladimirov A, Koshelev SG, **Chugunov AO**, Andreev YA, Palikov VA, Palikova YA, Shaykhutdinova ER, Gvozd AN, Dyachenko IA, Efremov RG, Kublitski VS, Kozlov SA (2020). Sevanol and Its Analogues: Chemical Synthesis, Biological Effects and Molecular Docking. *Pharmaceuticals (Basel)* 13 (8), 1–21, [10.3390/ph13080163](https://doi.org/10.3390/ph13080163)
16. Gigolaev AM, Kuzmenkov AI, Peigneur S, Tabakmakher VM, Pinheiro-Junior EL, **Chugunov AO**, Efremov RG, Tytgat J, Vassilevski AA (2020). Tuning Scorpion Toxin Selectivity: Switching From KV1.1 to KV1.3. *Front Pharmacol* 11, 1010, [10.3389/fphar.2020.01010](https://doi.org/10.3389/fphar.2020.01010)
17. Panina I, Krylov N, Nolde D, Efremov R, **Chugunov A** (2020). Environmental and dynamic effects explain how nisin captures membrane-bound lipid II. *Sci Rep* 10 (1), 8821, [10.1038/s41598-020-65522-y](https://doi.org/10.1038/s41598-020-65522-y)
18. 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)
19. Pakhomov AA, Frolova AY, Tabakmakher VM, **Chugunov AO**, Efremov RG, Martynov VI (2020). Impact of external amino acids on fluorescent protein chromophore biosynthesis revealed by molecular dynamics and mutagenesis studies. *J Photochem Photobiol B* 206, 111853, [10.1016/j.jphotobiol.2020.111853](https://doi.org/10.1016/j.jphotobiol.2020.111853)
20. Berkut AA, **Chugunov AO**, Mineev KS, Peigneur S, Tabakmakher VM, Krylov NA, Oparin PB, Lihonosova AF, Novikova EV, Arseniev AS, Grishin EV, Tytgat J, Efremov RG, Vassilevski AA (2019). Protein Surface Topography as a tool to enhance the selective activity of a potassium channel blocker. *J Biol Chem* 294 (48), 18349–18359, [10.1074/jbc.RA119.010494](https://doi.org/10.1074/jbc.RA119.010494)
21. Myshkin MY, Männikkö R, Krumkacheva OA, Kulbatskii DS, **Chugunov AO**, Berkut AA, Paramonov AS, Shulepko MA, Fedin MV, Hanna MG, Kullmann DM, Bagryanskaya EG, Arseniev AS, Kirpichnikov MP, Lyukmanova EN, Vassilevski AA, Shenkarev ZO (2019). Cell-Free Expression of Sodium Channel Domains for Pharmacology Studies. Noncanonical Spider Toxin Binding Site in the Second Voltage-Sensing Domain of Human Nav1.4 Channel. *Front Pharmacol* 10, 953, [10.3389/fphar.2019.00953](https://doi.org/10.3389/fphar.2019.00953)
22. Kuzmenkov AI, Nekrasova OV, Peigneur S, Tabakmakher VM, Gigolaev AM, Fradkov AF, Kudryashova KS, **Chugunov AO**, Efremov RG, Tytgat J, Feofanov AV, Vassilevski AA (2018). K1.2 channel-specific blocker from Mesobuthus eupeus scorpion venom: Structural basis of selectivity. *Neuropharmacology* 143, 228–238, [10.1016/j.neuropharm.2018.09.030](https://doi.org/10.1016/j.neuropharm.2018.09.030)
23. Panina IS, **Chugunov AO**, Efremov RG (2018). Lipid II as a Target for Novel Antibiotics: Structural and Molecular Dynamics Studies. *Russ. J. Bioorganic Chem.* 44 (6), 653–664, [10.1134/S1068162019010126](https://doi.org/10.1134/S1068162019010126)
24. Alekseeva AS, **Chugunov AO**, Volynsky PE, Onishchenko NR, Molotkovsky JG, Efremov RG, Boldyrev IA, Vodovozova EL (2018). Behavior of Doxorubicin Lipophilic Conjugates in Liposomal Lipid Bilayers. *Russ. J. Bioorganic Chem.* 44 (6), 732–739, [10.1134/S1068162019010023](https://doi.org/10.1134/S1068162019010023)
25. Kuzmenkov AI, Peigneur S, **Chugunov AO**, Tabakmakher VM, Efremov RG, Tytgat J, Grishin EV, Vassilevski AA (2017). C-Terminal residues in small potassium channel blockers OdK1 and OSK3 from scorpion venom fine-tune the selectivity. *BIOCHIM BIOPHYS ACTA* 1865 (5), 465–472, [10.1016/j.bbapap.2017.02.001](https://doi.org/10.1016/j.bbapap.2017.02.001)
26. Paramonov AS, Lyukmanova EN, Myshkin MY, Shulepko MA, Kulbatskii DS, Petrosian NS, **Chugunov AO**, Dolgikh DA, Kirpichnikov MP, Arseniev AS, Shenkarev ZO (2017). NMR investigation of the isolated second voltage-sensing domain of human Nav1.4 channel. *BIOCHIM BIOPHYS ACTA* 1859 (3), 1–33, [10.1016/j.bbamem.2017.01.004](https://doi.org/10.1016/j.bbamem.2017.01.004)
27. Kasheverov IE, **Chugunov AO**, Kudryavtsev DS, Ivanov IA, Zhmak MN, Shelukhina IV, Spirova EN, Tabakmakher VM, Zelepuga EA, Efremov RG, Tsetlin VI (2016). High-Affinity  $\alpha$ -Conotoxin PnIA Analogs Designed on the Basis of the Protein Surface Topography Method. *Sci Rep* 6, 36848, [10.1038/srep36848](https://doi.org/10.1038/srep36848)

28. (конференция) Панина ИС, Нольде ДЕ, **Чугунов АО**, Ефремов РГ (2016). Структурно-динамическая модель комплекса лантибиотика низин с липидом-II в биомембране. 1, 263–267.
29. **Chugunov AO**, Volynsky PE, Krylov NA, Nolde DE, Efremov RG (2016). Temperature-sensitive gating of TRPV1 channel as probed by atomistic simulations of its trans- and juxtamembrane domains. *Sci Rep* 6, 33112, [10.1038/srep33112](https://doi.org/10.1038/srep33112)
30. Lyukmanova EN, Shulepko MA, Shenkarev ZO, Kasheverov IE, **Chugunov AO**, Kulbatskii DS, Myshkin MY, Utkin YN, Efremov RG, Tsetlin VI, Arseniev AS, Kirpichnikov MP, Dolgikh DA (2016). Central loop of non-conventional toxin WTX from *Naja kaouthia* is important for interaction with nicotinic acetylcholine receptors. *Toxicon* 119, 274–279, [10.1016/j.toxicon.2016.06.012](https://doi.org/10.1016/j.toxicon.2016.06.012)
31. Lyukmanova EN, Shulepko MA, Shenkarev ZO, Bychkov ML, Paramonov AS, **Chugunov AO**, Kulbatskii DS, Arvaniti M, Dolejsi E, Schaer T, Arseniev AS, Efremov RG, Thomsen MS, Dolezal V, Bertrand D, Dolgikh DA, Kirpichnikov MP (2016). Secreted Isoform of Human Lynx1 (SLURP-2): Spatial Structure and Pharmacology of Interactions with Different Types of Acetylcholine Receptors. *Sci Rep* 6, 30698, [10.1038/srep30698](https://doi.org/10.1038/srep30698)
32. Kuzmenkov AI, Krylov NA, **Chugunov AO**, Grishin EV, Vassilevski AA (2016). Kalium: A database of potassium channel toxins from scorpion venom. *Database (Oxford)* 2016, baw056, [10.1093/database/baw056](https://doi.org/10.1093/database/baw056)
33. Lyukmanova EN, Shenkarev ZO, Shulepko MA, Paramonov AS, **Chugunov AO**, Janickova H, Dolejsi E, Dolezal V, Utkin YN, Tsetlin VI, Arseniev AS, Efremov RG, Dolgikh DA, Kirpichnikov MP (2015). Structural insight into specificity of interactions between nonconventional three-finger weak toxin from *Naja kaouthia* (WTX) and muscarinic acetylcholine receptors. *J Biol Chem* 290 (39), 23616–23630, [10.1074/jbc.M115.656595](https://doi.org/10.1074/jbc.M115.656595)
34. Kasheverov IE, Kudryavtsev DS, Ivanov IA, Zhmak MN, **Chugunov AO**, Tabakmakher VM, Zelepuga EA, Efremov RG, Tsetlin VI (2015). Rational design of new ligands for nicotinic receptors on the basis of  $\alpha$ -conotoxin PnIA. *Dokl Biochem Biophys* 461 (1), 106–109, [10.1134/S1607672915020118](https://doi.org/10.1134/S1607672915020118)
35. **Chugunov AO**, Volynsky PE, Krylov NA, Boldyrev IA, Efremov RG (2014). Liquid but durable: Molecular dynamics simulations explain the unique properties of archaeal-like membranes. *Sci Rep* 4, 7462, [10.1038/srep07462](https://doi.org/10.1038/srep07462)
36. **Чугунов АО**, Ефремов РГ (2014). Поверхность молекулы -- источник биологической информации. (10), 3–10.
37. Lyukmanova EN, Shulepko MA, Bychkov ML, Shenkarev ZO, Paramonov AS, **Chugunov AO**, Arseniev AS, Dolgikh DA, Kirpichnikov MP (2014). Human SLURP-1 and SLURP-2 Proteins Acting on Nicotinic Acetylcholine Receptors Reduce Proliferation of Human Colorectal Adenocarcinoma HT-29 Cells. *Acta Naturae* 6 (4), 60–6.
38. Polyansky AA, **Chugunov AO**, Volynsky PE, Krylov NA, Nolde DE, Efremov RG (2014). PREDDIMER: A web server for prediction of transmembrane helical dimers. *Bioinformatics* 30 (6), 889–890, [10.1093/bioinformatics/btt645](https://doi.org/10.1093/bioinformatics/btt645)
39. Lyukmanova EN, Shulepko MA, Bychkov ML, Shenkarev ZO, Paramonov AS, **Chugunov AO**, Arseniev AS, Dolgikh DA, Kirpichnikov MP (2014). Human SLURP-1 and SLURP-2 proteins Acting on nicotinic acetylcholine receptors reduce proliferation of human colorectal adenocarcinoma HT-29 cells. *Acta Naturae* 6 (23), 60–66, [10.32607/20758251-2014-6-4-60-66](https://doi.org/10.32607/20758251-2014-6-4-60-66)
40. Koromyslova AD, **Chugunov AO**, Efremov RG (2014). Deciphering fine molecular details of proteins' structure and function with a protein surface topography (PST) method. *J Chem Inf Model* 54 (4), 1189–1199, [10.1021/ci500158y](https://doi.org/10.1021/ci500158y)
41. **Чугунов АО**, Василевский АА (2013). Эволюционная «гонка вооружений»: нейротоксины против ионных каналов. 11, 42–48.
42. **Chugunov AO**, Koromyslova AD, Berkut AA, Peigneur S, Tytgat J, Polyansky AA, Pentkovsky VM, Vassilevski AA, Grishin EV, Efremov RG (2013). Modular organization of  $\alpha$ -toxins from scorpion venom mirrors domain structure of their targets, sodium channels. *J Biol Chem* 288 (26), 19014–19027, [10.1074/jbc.M112.431650](https://doi.org/10.1074/jbc.M112.431650)
43. **Chugunov A**, Pyrkova D, Nolde D, Polyansky A, Pentkovsky V, Efremov R (2013). Lipid-II forms potential "landing terrain" for lantibiotics in simulated bacterial membrane. *Sci Rep* 3, 1678, [10.1038/srep01678](https://doi.org/10.1038/srep01678)
44. **Чугунов АО**, Нольде ДЕ, Пыrkova ДВ, Полянский АА, Пентковский ВМ, Ефремов РГ (2013). На пути к новым антибиотикам. 12, 34–36.



45. **Чугунов АО**, Полянский АА, Ефремов РГ (2013). Физическая водобоязнь. 1, 24–34.
46. Aseev LV, **Chugunov AO**, Efremov RG, Boni IV (2013). A single missense mutation in a coiled-coil domain of Escherichia coli ribosomal protein S2 confers a thermosensitive phenotype that can be suppressed by ribosomal protein S1. *J Bacteriol* 195 (1), 95–104, [10.1128/JB.01305-12](https://doi.org/10.1128/JB.01305-12)
47. Polyansky AA, **Chugunov AO**, Vassilevski AA, Grishin EV, Efremov RG (2012). Recent advances in computational modeling of  $\alpha$ -Helical membrane-active peptides. *Curr Protein Pept Sci* 13 (7), 644–657, [10.2174/138920312804142147](https://doi.org/10.2174/138920312804142147)
48. Semenova AA, **Chugunov AO**, Dubovskii PV, Chupin VV, Volynsky PE, Boldyrev IA (2012). The role of chain rigidity in lipid self-association: Comparative study of dihexanoyl- and disorbyl-phosphatidylcholines. *Chem Phys Lipids* 165 (4), 382–386, [10.1016/j.chemphyslip.2011.12.004](https://doi.org/10.1016/j.chemphyslip.2011.12.004)
49. **Чугунов АО**, Полянский АА, Ефремов РГ (2012). Липидный фундамент жизни. (3), 3–12.
50. (книга) Efremov RG, **Chugunov AO**, Pyrkov TV, Priestle JP, Pentkovsky VM, Arseniev AS, Jacoby E (2012). Molecular Lipophilicity in Protein Modeling and Drug Design. *Frontiers in Drug Design and Discovery* 6, 249–290, [10.2174/9781608054640113060013](https://doi.org/10.2174/9781608054640113060013)
51. Deyev IE, Sohet F, Vassilenko KP, Serova OV, Popova NV, Zozulya SA, Burova EB, Houillier P, Rzhovsky DI, Berchatova AA, Murashev AN, **Chugunov AO**, Efremov RG, Nikol'sky NN, Bertelli E, Eladari D, Petrenko AG (2011). Insulin receptor-related receptor as an extracellular alkali sensor. *Cell Metab* 13 (6), 679–689, [10.1016/j.cmet.2011.03.022](https://doi.org/10.1016/j.cmet.2011.03.022)
52. **Чугунов АО**, Ефремов РГ (2010). Компьютерные игры в молекулярную биофизику. (12), 36–43.
53. **Chugunov AO**, Simms J, Poyner DR, Dehouck Y, Rooman M, Gilis D, Langer I (2010). Evidence that interaction between conserved residues in transmembrane helices 2, 3, and 7 are crucial for human VPAC1 receptor activation. *Mol Pharmacol* 78 (3), 394–401, [10.1124/mol.110.063578](https://doi.org/10.1124/mol.110.063578)
54. Pyrkov TV, **Chugunov AO**, Krylov NA, Nolde DE, Efremov RG (2009). Complementarity of hydrophobic/hydrophilic properties in protein-ligand complexes: A new tool to improve docking results. *Vierteljahrschr Soz Wirtschaftsgesch* 28 (1), 21–41, [10.1007/978-90-481-2368-1\\_2](https://doi.org/10.1007/978-90-481-2368-1_2)
55. **Чугунов АО**, Ефремов РГ (2009). Предсказание пространственной структуры белков: акцент на мембранных мишенях. 35 (6), 1–17.
56. **Chugunov AO**, Efremov RG (2009). Prediction of the spatial structure of proteins: emphasis on membrane targets. *Bioorg Khim* 35 (6), 744–760.
57. **Chugunov AO**, Efremov RG (2009). Prediction of the spatial structure of proteins: Emphasis on membrane targets. *Russ. J. Bioorganic Chem.* 35 (6), 670–684, [10.1134/S106816200906003X](https://doi.org/10.1134/S106816200906003X)
58. Pyrkov TV, **Chugunov AO**, Krylov NA, Nolde DE, Efremov RG (2009). PLATINUM: A web tool for analysis of hydrophobic/hydrophilic organization of biomolecular complexes. *Bioinformatics* 25 (9), 1201–1202, [10.1093/bioinformatics/btp111](https://doi.org/10.1093/bioinformatics/btp111)
59. Farce A, **Chugunov AO**, Logé C, Sabaouni A, Yous S, Dilly S, Renault N, Vergoten G, Efremov RG, Lesieur D, Chavatte P (2008). Homology modeling of MT1 and MT2 receptors. *Eur J Med Chem* 43 (9), 1926–1944, [10.1016/j.ejmech.2007.12.001](https://doi.org/10.1016/j.ejmech.2007.12.001)
60. **Chugunov AO**, Novoseletsky VN, Nolde DE, Arseniev AS, Efremov RG (2007). Method to assess packing quality of transmembrane  $\alpha$ -helices in proteins. 2. Validation by "correct vs misleading" test. *J Chem Inf Model* 47 (3), 1163–1170, [10.1021/ci600517c](https://doi.org/10.1021/ci600517c)
61. **Chugunov AO**, Novoseletsky VN, Nolde DE, Arseniev AS, Efremov RG (2007). Method to assess packing quality of transmembrane  $\alpha$ -helices in proteins. 1. Parametrization using structural data. *J Chem Inf Model* 47 (3), 1150–1162, [10.1021/ci600516x](https://doi.org/10.1021/ci600516x)
62. **Chugunov AO**, Novoseletsky VN, Arseniev AS, Efremov RG (2007). A novel method for packing quality assessment of transmembrane  $\alpha$ -helical domains in proteins. *Biochemistry (Mosc)* 72 (3), 293–300, [10.1134/S0006297907030066](https://doi.org/10.1134/S0006297907030066)
63. Efremov RG, **Chugunov AO**, Pyrkov TV, Priestle JP, Arseniev AS, Jacoby E (2007). Molecular lipophilicity in protein modeling and drug design. *Curr Med Chem* 14 (4), 393–415, [10.2174/092986707779941050](https://doi.org/10.2174/092986707779941050)
64. **Chugunov AO**, Farce A, Chavatte P, Efremov RG (2006). Differences in binding sites of two melatonin receptors help to explain their selectivity to some melatonin analogs: A molecular modeling study. *J Biomol Struct Dyn* 24 (2), 91–107, [10.1080/07391102.2006.10507103](https://doi.org/10.1080/07391102.2006.10507103)