Резюме: Кудрявцев Денис Сергеевич

Адрес

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

Контакты

kudryavtsev@ibch.ru
https://www.ibch.ru/users/856

Образование

2017–2020	Россия, Москва	МГУ им. М.В. Ломоносова, юридический факультет
2006–2011	Россия, Москва	МГУ им. М.В. Ломоносова, биологический факультет, кафедра биоорганической химии

Преподавание

2023–наст.вр.	Москва	Сеченовский университет

Работа в ИБХ

2022–наст.вр.	Старший научный сотрудник
2017–2022	Научный сотрудник

Членство в советах и комиссиях ИБХ

Методическая комиссия

Владение языками

английский

Награды

2016	Премия Правительства Москвы молодым ученым	За разработку методов биотехнологического получения и анализа механизмов действия фармакологически перспективных лигандов нейрорецепторов человека

Научные интересы

аллостерические взаимодействия, нейрохимия, рациональный драг-дизайн, криминалистическая техника, интеллектуальная собственность, эмпирические методы в праве

Членство в сообществах

Европейское нейрохимическое общество (ESN) с 2015 г.

Международное общество токсинологии (IST) с 2021 г.

Степени и звания

Кандидат наук (Биологические науки, 03.00.03 — Молекулярная биология)

Гранты и проекты

2016–2018	Исследование молекулярного механизма ингибирования мышечного никотинового рецептора макалувамином G
2021–наст.вр.	Исследование роли цис-петельных рецепторов во взаимодействиях клеток глиобластомы с их микроокружением
2018–2021	Клинико-экспериментальное исследование на овцах эффективности миорелаксантного полипептида аземиопсина и его аналогов

Публикации

1. Mozhaeva VA, Starkov VG, **Kudryavtsev DS**, Prokhorov KA, Garnov SV, Utkin YN (2024). Analysis of intra-specific variations in the venom of individual snakes based on Raman spectroscopy. *Spectrochim Acta A* 314, 124239, 10.1016/j.saa.2024.124239
2. Son L, Kost V, Maiorov V, Sukhov D, Arkhangelskaya P, Ivanov I, **Kudryavtsev D**, Siniavin A, Utkin Y, Kasheverov I (2024). Efficient Expression in Leishmania tarentolae (LEXSY) of the Receptor-Binding Domain of the SARS-CoV-2 S-Protein and the Acetylcholine-Binding Protein from Lymnaea stagnalis. *Molecules* 29 (5), , 10.3390/molecules29050943
3. Gondarenko E, Mazur D, Masliakova M, Ryabukha Y, Kasheverov I, Utkin Y, Tsetlin V, Shahparonov M, **Kudryavtsev D**, Antipova N (2024). Subtype-Selective Peptide and Protein Neurotoxic Inhibitors of Nicotinic Acetylcholine Receptors Enhance Proliferation of Patient-Derived Glioblastoma Cell Lines. *Toxins (Basel)* 16 (2), 80, 10.3390/toxins16020080
4. Kost V, Sukhov D, Ivanov I, Kasheverov I, Ojomoko L, Shelukhina I, Mozhaeva V, **Kudryavtsev D**, Feofanov A, Ignatova A, Utkin Y, Tsetlin V (2023). Comparison of Conformations and Interactions with Nicotinic Acetylcholine Receptors for E. coli-Produced and Synthetic Three-Finger Protein SLURP-1. *Int J Mol Sci* 24 (23), 16950, 10.3390/ijms242316950
5. Kalinovskii AP, Pushkarev AP, Mikhailenko AD, **Kudryavtsev DS**, Belozerova OA, Shmygarev VI, Yatskin ON, Korolkova YV, Kozlov SA, Osmakov DI, Popov A, Andreev YA (2023). Dual Modulator of ASIC Channels and GABAA Receptors from Thyme Alters Fear-Related Hippocampal Activity. *Int J Mol Sci* 24 (17), , 10.3390/ijms241713148
6. Mozhaeva V, Starkov V, **Kudryavtsev D**, Prokhorov K, Garnov S, Utkin Y (2023). Differentiation of snake venom using Raman spectroscopic analysis. *J Mater Chem B Mater Biol Med* 11 (27), 6435–6442, 10.1039/d3tb00829k
7. Ivanov IA, Siniavin AE, Palikov VA, Senko DA, Shelukhina IV, Epifanova LA, Ojomoko LO, Belukhina SY, Prokopev NA, Landau MA, Palikova YA, Kazakov VA, Borozdina NA, Bervinova AV, Dyachenko IA, Kasheverov IE, Tsetlin VI, **Kudryavtsev DS** (2023). Analogs of 6-Bromohypaphorine with Increased Agonist Potency for α7 Nicotinic Receptor as Anti-Inflammatory Analgesic Agents. *Mar Drugs* 21 (6), 368, 10.3390/md21060368
8. Kasheverov IE, Logashina YA, Kornilov FD, Lushpa VA, Maleeva EE, Korolkova YV, Yu J, Zhu X, Zhangsun D, Luo S, Stensvåg K, **Kudryavtsev DS**, Mineev KS, Andreev YA (2023). Peptides from the Sea Anemone Metridium senile with Modified Inhibitor Cystine Knot (ICK) Fold Inhibit Nicotinic Acetylcholine Receptors. *Toxins (Basel)* 15 (1), 28, 10.3390/toxins15010028
9. Mozhaeva V, **Kudryavtsev D**, Prokhorov K, Utkin Y, Gudkov S, Garnov S, Kasheverov I, Tsetlin V (2022). Toxins' classification through Raman spectroscopy with principal component analysis. *Spectrochim Acta A* 278, 121276, 10.1016/j.saa.2022.121276
10. Shaykhutdinova ER, Kondrakhina AE, Ivanov IA, **Kudryavtsev DS**, Dyachenko IA, Murashev AN, Tsetlin VI, Utkin YN (2022). Synthetic Analogs of 6-Bromohypaphorine, a Natural Agonist of Nicotinic Acetylcholine Receptors, Reduce Cardiac Reperfusion Injury in a Rat Model of Myocardial Ischemia. *Dokl Biochem Biophys* 503 (1), 47–51, 10.1134/S1607672922020132
11. Kasheverov I, **Kudryavtsev D**, Shelukhina I, Nikolaev G, Utkin Y, Tsetlin V (2022). Marine Origin Ligands of

Nicotinic Receptors: Low Molecular Compounds, Peptides and Proteins for Fundamental Research and Practical Applications. *Biomolecules* 12 (2), 189, 10.3390/biom12020189

12. Tsetlin V, Haufe Y, Safronova V, Serov D, Shadamarshan P, Son L, Shelukhina I, **Kudryavtsev D**, Kryukova E, Kasheverov I, Nicke A, Utkin Y (2021). Interaction of α9α10 Nicotinic Receptors With Peptides and Proteins From Animal Venoms. *Front Cell Neurosci* 15, 765541, 10.3389/fncel.2021.765541
13. Kasheverov IE, Kuzmenkov AI, **Kudryavtsev DS**, Chudetskiy IS, Shelukhina IV, Barykin EP, *И*вановIvanov IA, Siniavin AE, Ziganshin RH, Baranov MS, Tsetlin VI, Vassilevski AA, Utkin YN (2021). Snake Toxins Labeled by Green Fluorescent Protein or Its Synthetic Chromophore are New Probes for Nicotinic acetylcholine Receptors. *Front Mol Biosci* 8 (8), 753283, 10.3389/fmolb.2021.753283
14. Siniavin AE, Streltsova MA, Nikiforova MA, **Kudryavtsev DS**, Grinkina SD, Gushchin VA, Mozhaeva VA, Starkov VG, Osipov AV, Lummis SCR, Tsetlin VI, Utkin YN (2021). Snake venom phospholipase A2s exhibit strong virucidal activity against SARS-CoV-2 and inhibit the viral spike glycoprotein interaction with ACE2. *Cell Mol Life Sci* 78 (23), 7777–7794, 10.1007/s00018-021-03985-6
15. **Kudryavtsev D**, Isaeva A, Barkova D, Spirova E, Mukhutdinova R, Kasheverov I, Tsetlin V (2021). Point Mutations of Nicotinic Receptor α1 Subunit Reveal New Molecular Features of G153S Slow-Channel Myasthenia. *Molecules* 26 (5), , 10.3390/molecules26051278
16. Terpinskaya TI, Osipov AV, Kryukova EV, **Kudryavtsev DS**, Kopylova NV, Yanchanka TL, Palukoshka AF, Gondarenko EA, Zhmak MN, Tsetlin VI, Utkin YN (2021). α-Conotoxins and α-Cobratoxin Promote, while Lipoxygenase and Cyclooxygenase Inhibitors Suppress the Proliferation of Glioma C6 Cells. *Mar Drugs* 19 (2), , 10.3390/md19020118
17. Son L, Kryukova E, Ziganshin R, Andreeva T, **Kudryavtsev D**, Kasheverov I, Tsetlin V, Utkin Y (2021). Novel Three-Finger Neurotoxins from Naja melanoleuca Cobra Venom Interact with GABAA and Nicotinic Acetylcholine Receptors. *Toxins (Basel)* 13 (2), , 10.3390/toxins13020164
18. Zhu X, Pan S, Xu M, Zhang L, Yu J, Yu J, Wu Y, Fan Y, Li H, Kasheverov IE, **Kudryavtsev DS**, Tsetlin VI, Xue Y, Zhangsun D, Wang X, Luo S (2020). High Selectivity of an α-Conotoxin LvIA Analogue for α3β2 Nicotinic Acetylcholine Receptors Is Mediated by β2 Functionally Important Residues. *J Med Chem* 63 (22), 13656–13668, 10.1021/acs.jmedchem.0c00975
19. Melentiev PN, Son LV, **Kudryavtsev DS**, Kasheverov IE, Tsetlin VI, Esenaliev RO, Balykin VI (2020). Ultrafast, Ultrasensitive Detection and Imaging of Single Cardiac Troponin-T Molecules. *ACS Sens* 5 (11), 3576–3583, 10.1021/acssensors.0c01790
20. Nurkhametova D, Siniavin A, Streltsova M, **Kudryavtsev D**, Kudryavtsev I, Giniatullina R, Tsetlin V, Malm T, Giniatullin R (2020). Does Cholinergic Stimulation Affect the P2X7 Receptor-Mediated Dye Uptake in Mast Cells and Macrophages? *Front Cell Neurosci* 14, 548376, 10.3389/fncel.2020.548376
21. Semenov AN, Lugovtsov AE, Shirshin EA, Yakimov BP, Ermolinskiy PB, Bikmulina PY, **Kudryavtsev DS**, Timashev PS, Muravyov AV, Wagner C, Shin S, Priezzhev AV (2020). Assessment of Fibrinogen Macromolecules Interaction with Red Blood Cells Membrane by Means of Laser Aggregometry, Flow Cytometry, and Optical Tweezers Combined with Microfluidics. *Biomolecules* 10 (10), 1–20, 10.3390/biom10101448
22. **(конференция)** Utkin Y, Kuch U, Osipov A, Kasheverov I, **Kudryavtsev D**, Starkov V, Ziganshin R, Mebs D, Tsetlin V (2020). Three finger neurotoxins: Recent discoveries and arising questions. *Toxicon* 177 Suppl 1, S10–S11, 10.1016/j.toxicon.2019.10.048
23. Vulfius CA, Lebedev DS, Kryukova EV, **Kudryavtsev DS**, Kolbaev SN, Utkin YN, Tsetlin VI (2020). NU-120596, a Positive Allosteric Modulator of Mammalian α7 Nicotinic Acetylcholine Receptor, is a Negative Modulator of Ligand-Gated Chloride-Selective Channels of the Gastropod Lymnaea stagnalis. *J Neurochem* 155 (3), 274–284, 10.1111/jnc.15020
24. Siniavin AE, Streltsova MA, **Kudryavtsev DS**, Shelukhina IV, Utkin YuN, Tsetlin VI (2020). Activation of α7 Nicotinic Acetylcholine Receptor Upregulates HLA-DR and Macrophage Receptors: Potential Role in Adaptive Immunity and in Preventing Immunosuppression. *Biomolecules* 10 (4), 507, 10.3390/biom10040507
25. **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 α-neurotoxins binding to HAP, the high-affinity peptide. *Sci Rep* 10 (1), 3861, 10.1038/s41598-020-60768-y

26. Akimov MG, **Kudryavtsev DS**, Kryukova EV, Fomina-Ageeva EV, Zakharov SS, Gretskaya NM, Zinchenko GN, Serkov IV, Makhaeva GF, Boltneva NP, Kovaleva NV, Serebryakova OG, Lushchekina SV, Palikov VA, Palikova Y, Dyachenko IA, Kasheverov IE, Tsetlin VI, Bezuglov VV (2020). Arachidonoylcholine and Other Unsaturated Long-Chain Acylcholines Are Endogenous Modulators of the Acetylcholine Signaling System. *Biomolecules* 10 (2), , 10.3390/biom10020283
27. Lebedev D, Kryukova E, Ivanov I, Egorova N, Timofeev N, Spirova E, Tufanova E, Siniavin A, **Kudryavtsev D**, Kasheverov I, Zouridakis M, Katsarava R, Zavradashvili N, Iagorshvili I, Tzartos S, Tsetlin V (2019). Oligoarginine Peptides, a New Family of nAChR Inhibitors. *Mol Pharmacol* 96 (5), 664–673, 10.1124/mol.119.117713
28. **(конференция)** Siniavin AE, Streltsova MA, **Kudryavtsev DS**, Tsetlin VI (2019). A7 nicotine acetylcholine receptor (NAChR) agonists strongly activate classical macrophages and increase the expression of HLA-DR molecules. *Allergy* 74 (S106), 138, 10.1111/all.13959
29. Kasheverov IE, Oparin PB, Zhmak MN, Egorova NS, Ivanov IA, Gigolaev AM, Nekrasova OV, Serebryakova MV, **Kudryavtsev DS**, Prokopev NA, Hoang AN, Tsetlin VI, Vassilevski AA, Utkin YN (2019). Scorpion toxins interact with nicotinic acetylcholine receptors. *FEBS Lett* 593 (19), 2779–2789, 10.1002/1873-3468.13530
30. Kryukova EV, Egorova NS, **Kudryavtsev DS**, Lebedev DS, Spirova EN, Zhmak MN, Garifulina AI, Kasheverov IE, Utkin YN, Tsetlin VI (2019). From Synthetic Fragments of Endogenous Three-Finger Proteins to Potential Drugs. *Front Pharmacol* 10, 748, 10.3389/fphar.2019.00748
31. **(конференция)** Melentiev P, Son L, **Kudryavtsev D**, Afanasiev A, Kasheverov I, Tsetlin V, Balykin V (2019). Ultra-fast single troponine-T molecule sensing. *Optics InfoBase Conference Papers* , , 10.1109/CLEOE-EQEC.2019.8872744
32. Utkin Y, Vassilevski A, **Kudryavtsev D**, Undheim EAB (2019). Editorial: Animal Toxins as Comprehensive Pharmacological Tools to Identify Diverse Ion Channels. *Front Pharmacol* 10 (APR), 423, 10.3389/fphar.2019.00423
33. **(конференция)** Melentiev P, Son L, **Kudryavtsev D**, Afanasiev A, Kasheverov I, Tsetlin V, Balykin V (2019). Ultra-fast single troponine-T molecule sensing. *Optics InfoBase Conference Papers* Part F140-CLEO_Europe 2019, .
34. Spirova EN, Ivanov IA, Kasheverov IE, **Kudryavtsev DS**, Shelukhina IV, Garifulina AI, Son LV, Lummis SCR, Malca-Garcia GR, Bussmann RW, Hennig L, Giannis A, Tsetlin VI (2019). Curare alkaloids from Matis Dart Poison: Comparison with d-tubocurarine in interactions with nicotinic, 5-HT3 serotonin and GABAA receptors. *PLoS One* 14 (1), e0210182, 10.1371/journal.pone.0210182
35. Diankin ID, **Kudryavtsev DS**, Zalevsky AO, Tsetlin VI, Golovin AV (2018). New binding mode of SLURP protein to α7 nicotinic acetylcholine receptor revealed by computer simulations. *Supercomputing Frontiers and Innovations* 5 (4), 73–77, 10.14529/jsfi180407
36. Yu J, Zhu X, Zhang L, **Kudryavtsev D**, Kasheverov I, Lei Y, Zhangsun D, Tsetlin V, Luo S (2018). Species specificity of rat and human α7 nicotinic acetylcholine receptors towards different classes of peptide and protein antagonists. *Neuropharmacology* 139, 226–237, 10.1016/j.neuropharm.2018.07.019
37. **Kudryavtsev DS**, Spirova EN, Shelukhina IV, Son LV, Makarova YV, Utkina NK, Kasheverov IE, Tsetlin VI (2018). Makaluvamine G from the Marine Sponge Zyzzia fuliginosa Inhibits Muscle nAChR by Binding at the Orthosteric and Allosteric Sites. *Mar Drugs* 16 (4), , 10.3390/md16040109
38. Durek T, Shelukhina IV, Tae HS, Thongyoo P, Spirova EN, **Kudryavtsev DS**, Kasheverov IE, Faure G, Corringer PJ, Craik DJ, Adams DJ, Tsetlin VI (2018). Interaction of Synthetic Human SLURP-1 with the Nicotinic Acetylcholine Receptors. *Sci Rep* 7 (1), 16606, 10.1038/s41598-017-16809-0
39. Shelukhina I, Spirova E, **Kudryavtsev D**, Ojomoko L, Werner M, Methfessel C, Hollmann M, Tsetlin V (2017). Calcium imaging with genetically encoded sensor Case12: Facile analysis of α7/α9 nAChR mutants. *PLoS One* 12 (8), e0181936, 10.1371/journal.pone.0181936
40. 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 α-Conotoxin PnIA Analogs Designed on the Basis of the Protein Surface Topography Method. *Sci Rep* 6, 36848, 10.1038/srep36848
41. Vulfius CA, Spirova EN, Serebryakova MV, Shelukhina IV, **Kudryavtsev DS**, Kryukova EV, Starkov VG, Kopylova NV, Zhmak MN, Ivanov IA, Kudryashova KS, Andreeva TV, Tsetlin VI, Utkin YN (2016). Peptides from puff adder Bitis arietans venom, novel inhibitors of nicotinic acetylcholine receptors. *Toxicon* 121, 70–76,

10.1016/j.toxicon.2016.08.020
42. Kasheverov IE, Kryukova EV, **Kudryavtsev DS**, Ivanov IA, Egorova NV, Zhmak MN, Spirova EN, Shelukhina IV, Odinokov AV, Alfimov MV, Tsetlin VI (2016). Analysis of binding centers in nicotinic receptors with the aid of synthetic peptides. *Dokl Biochem Biophys* 470 (1), 338–341, 10.1134/S1607672916050070
43. Lyukmanova EN, Shulepko MA, **Kudryavtsev D**, Bychkov ML, Kulbatskii DS, Kasheverov IE, Astapova MV, Feofanov AV, Thomsen MS, Mikkelsen JD, Shenkarev ZO, Tsetlin VI, Dolgikh DA, Kirpichnikov MP (2016). Human secreted Ly-6/uPAR related protein-1 (SLURP-1) is a selective allosteric antagonist of α7 nicotinic acetylcholine receptor. *PLoS One* 11 (2), e0149733, 10.1371/journal.pone.0149733
44. Manetti D, Bellucci C, Dei S, Teodori E, Varani K, Spirova E, **Kudryavtsev D**, Shelukhina I, Tsetlin V, Romanelli MN (2016). New quinoline derivatives as nicotinic receptor modulators. *Eur J Med Chem* 110, 246–258, 10.1016/j.ejmech.2016.01.025
45. Malca Garcia GR, Hennig L, Shelukhina IV, **Kudryavtsev DS**, Bussmann RW, Tsetlin VI, Giannis A (2015). Curare Alkaloids: Constituents of a Matis Dart Poison. *J. Nat. Prod.* 78 (11), 2537–2544, 10.1021/acs.jnatprod.5b00457
46. **Kudryavtsev DS**, Shelukhina IV, Son LV, Ojomoko LO, Kryukova EV, Lyukmanova EN, Zhmak MN, Dolgikh DA, Ivanov IA, Kasheverov IE, Starkov VG, Ramerstorfer J, Sieghart W, Tsetlin VI, Utkin YN (2015). Neurotoxins from snake venoms and α-Conotoxin ImI inhibit functionally active Ionotropic γ-aminobutyric acid (GABA) receptors. *J Biol Chem* 290 (37), 22747–22758, 10.1074/jbc.M115.648824
47. Utkin YN, Kasheverov IE, **Kudryavtsev DS**, Andreeva TV, Starkov VG, Ziganshin RH, Kuznetsov DV, Anh HN, Thao NTT, Khoa NC, Tsetlin VI (2015). Nonconventional three-finger toxin BMLCL from krait Bungarus multicinctus venom with high affinity interacts with nicotinic acetylcholine receptors. *Dokl Biochem Biophys* 464 (1), 294–297, 10.1134/S1607672915050099
48. **Kudryavtsev D**, Shelukhina I, Vulfius C, Makarieva T, Stonik V, Zhmak M, Ivanov I, Kashevero I, Utkin Y, Tsetlin V (2015). Natural compounds interacting with nicotinic acetylcholine receptors: From low-molecular weight ones to peptides and proteins. *Toxins (Basel)* 7 (5), 1683–1701, 10.3390/toxins7051683
49. 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 α-conotoxin PnIA. *Dokl Biochem Biophys* 461 (1), 106–109, 10.1134/S1607672915020118
50. Kasheverov IE, Shelukhina IV, **Kudryavtsev DS**, Makarieva TN, Spirova EN, Guzii AG, Stonik VA, Tsetlin VI (2015). 6-Bromohypaphorine from marine nudibranch mollusk Hermissenda crassicornis is an agonist of human α7 nicotinic acetylcholine receptor. *Mar Drugs* 13 (3), 1255–1266, 10.3390/md13031255
51. **Kudryavtsev D**, Makarieva T, Utkina N, Santalova E, Kryukova E, Methfessel C, Tsetlin V, Stonik V, Kasheverov I (2014). Marine natural products acting on the acetylcholine-binding protein and nicotinic receptors: From computer modeling to binding studies and electrophysiology. *Mar Drugs* 12 (4), 1859–1875, 10.3390/md12041859
52. Lyukmanova EN, Shulepko MA, Buldakova SL, Kasheverov IE, Shenkarev ZO, Reshetnikov RV, Filkin SY, **Kudryavtsev DS**, Ojomoko LO, Kryukova EV, Dolgikh DA, Kirpichnikov MP, Bregestovski PD, Tsetlin VI (2013). Water-soluble LYNX1 residues important for interaction with muscle-type and/or neuronal nicotinic receptors. *J Biol Chem* 288 (22), 15888–15899, 10.1074/jbc.M112.436576