Curriculum vitae: Peter Dubovskii

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Education

1994–1995	Japan, Kobe	Kobe University	post-doctoral fellowship
1987–1989	USSR, Moscow	Lomonosov Institute of Fine Chemical Technology	PhD
1979–1984	USSR, Moscow	Moscow Institute of Engeneering Physics	distinction diploma

IBCh positions

2018–to date	Senior research fellow	
	Research fellow	

Skills

I am proficient in optical (IR-, CD-, fluorescence spectroscopy), radiospectroscopy (NMR, ESR) techniques and computational methods (Molecular Dynamics etc.) for studying the structure of membrane-active polypeptides, as well as their interaction with lipid and biomembranes. I have programming skills in Python.

Language Proficiency

Russian (native), English (confident user), Japanese (speaking)

Scientific interests

Membrane active polypeptides: structure and interaction with lipid and biomembranes.

Scientific societies' membership

Member of the Biochemical Society of the USSR (then Russia).

Titles

	Doctor of Philosophy (Chemistry)

Grants and projects

2024–2025	Design of antimicrobial peptides based on membrane-active toxins of animal venom against methicillin-resistant Staphylococcus aureus

Publications

1. Mironov PA, Baranova AA, Alferova VA, Nolde DE, Shenkarev ZO, **Dubovskii PV** (2026). Activity Determinants in Linear Spider Venom Peptide Fragments Against MRSA. *Russ. J. Bioorganic Chem.*

52 (5), 122, 10.1134/S1068162026601874
2. Mironov PA, Baranova AA, Alferova VA, Egorova NS, Ignatova AA, Feofanov AV, Shenkarev ZO, **Dubovskii PV** (2025). NMR Unveils Activity Mechanism of Linear Spider Venom Peptide Fragments Selected by Neural Networks Against Staphylococci Including MRSA. *Pharmaceutics* 17 (12), 1526, 10.3390/pharmaceutics17121526
3. **Dubovskii PV**, Utkin YN (2024). Specific Amino Acid Residues in the Three Loops of Snake Cytotoxins Determine Their Membrane Activity and Provide a Rationale for a New Classification of These Toxins. *Toxins (Basel)* 16 (6), 262, 10.3390/toxins16060262
4. Dubova M, **Dubovskii V**, Utkin N, Samygina R (2024). Effect of Microgravity on the Crystallization of Cardiotoxin from the Venom of Spectacled Cobra Naja naja. *Cryst. Rep* 68 (6), 900–904, 10.1134/S1063774523601144
5. Дубова КМ, **Дубовский ПВ**, Уткин ЮН, Самыгина ВР (2023). ВЛИЯНИЕ МИКРОГРАВИТАЦИИ НА КРИСТАЛЛИЗАЦИЮ КАРДИОТОКСИНА ИЗ ЯДА ОЧКОВОЙ КОБРЫ Naja naja. *Кристаллография* 68 (6), 902–906, 10.31857/S0023476123600465
6. **Dubovskii PV**, Ignatova AA, Alekseeva AS, Starkov VG, Boldyrev IA, Feofanov AV, Utkin YN (2023). Membrane-Disrupting Activity of Cobra Cytotoxins Is Determined by Configuration of the N-Terminal Loop. *Toxins (Basel)* 15 (1), 6, 10.3390/toxins15010006
7. **Dubovskii PV**, Dubova KM, Bourenkov G, Starkov VG, Konshina AG, Efremov RG, Utkin YN, Samygina VR (2022). Variability in the Spatial Structure of the Central Loop in Cobra Cytotoxins Revealed by X-ray Analysis and Molecular Modeling. *Toxins (Basel)* 14 (2), , 10.3390/toxins14020149
8. Dubinnyi MA, **Dubovskii PV**, Starkov VG, Utkin YN (2021). Corrigendum to “The omega-loop of cobra cytotoxins tolerates multiple amino acid substitutions” [Biochem. Biophys. Res. Commun. 558 (2021) 141–146]. *Biochem Biophys Res Commun* 579, 188, 10.1016/j.bbrc.2021.09.077
9. Dubinnyi A, **Dubovskii V**, Starkov G, Utkin N (2021). The omega-loop of cobra cytotoxins tolerates multiple amino acid substitutions. *Biochem Biophys Res Commun* 558, 141–146, 10.1016/j.bbrc.2021.04.069
10. Konshina AG, **Dubovskii PV**, Efremov RG (2021). Stepwise Insertion of Cobra Cardiotoxin CT2 into a Lipid Bilayer Occurs as an Interplay of Protein and Membrane “Dynamic Molecular Portraits”. *J Chem Inf Model* 61 (1), 385–399, 10.1021/acs.jcim.0c01137
11. **Dubovskii PV**, Ignatova AA, Feofanov AV, Utkin YN, Efremov RG (2020). Antibacterial activity of cardiotoxin-like basic polypeptide from cobra venom. *Bioorg Med Chem Lett* 30 (3), 126890, 10.1016/j.bmcl.2019.126890
12. **Dubovskii PV**, Efremov RG (2018). The role of hydrophobic /hydrophilic balance in the activity of structurally flexible vs rigid cytolytic polypeptides and analogues developed on their basis. *Expert Rev Proteomics* 15 (11), 873–886, 10.1080/14789450.2018.1537786
13. **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
14. **Dubovskii PV**, Dubinnyi MA, Volynsky PE, Pustovalova YE, Konshina AG, Utkin YN, Arseniev AS, Efremov RG (2017). Impact of membrane partitioning on the spatial structure of an S-type cobra cytotoxin. *J Biomol Struct Dyn* 36 (13), 1–16, 10.1080/07391102.2017.1389662
15. Thien TV, Anh HN, Trang NTT, Trung PV, Khoa NC, Osipov AV, **Dubovskii PV**, Ivanov IA, Arseniev AS, Tsetlin VI, Utkin YN (2017). Low-molecular-weight compounds with anticoagulant activity from the scorpion Heterometrus laoticus venom. *Dokl Biochem Biophys* 476 (1), 316–319, 10.1134/S1607672917050052
16. **Dubovskii PV**, Dubinnyi MA, Konshina AG, Kazakova ED, Sorokoumova GM, Ilyasova TM, Shulepko MA, Chertkova RV, Lyukmanova EN, Dolgikh DA, Arseniev AS, Efremov RG (2017). Structural and Dynamic Portraits of Recombinant and Native Cytotoxin I from Naja oxiana: How Close Are They? *Biochemistry* 56 (34), 4468–4477, 10.1021/acs.biochem.7b00453
17. Thien TV, Anh HN, Trang NTT, Trung PV, Khoa NC, Osipov AV, **Dubovskii PV**, Ivanov A, Arseniev S,

Tsetlin I, Utkin YN (2017). Low-Molecular Compounds with Anticoagulant Activity from Scorpion Heterometrus loaticus Venom. *Dokl Biochem Biophys* 476 (4), 476–479, 10.7868/S086956521728026X
18. Shulepko MA, Lyukmanova EN, Shenkarev ZO, **Dubovskii PV**, Astapova MV, Feofanov AV, Arseniev AS, Utkin YN, Kirpichnikov MP, Dolgikh DA (2017). Towards universal approach for bacterial production of three-finger Ly6/uPAR proteins: Case study of cytotoxin I from cobra N. oxiana. *Protein Expr Purif* 130, 13–20, 10.1016/j.pep.2016.09.021
19. **Dubovskii PV**, Vassilevski AA, Kozlov SA, Feofanov AV, Grishin EV, Efremov RG (2015). Latarcins: Versatile spider venom peptides. *Cell Mol Life Sci* 72 (23), 4501–4522, 10.1007/s00018-015-2016-x
20. **Dubovskii PV**, Utkin YN (2015). Antiproliferative activity of cobra venom cytotoxins. *Curr Top Med Chem* 15 (7), 638–648, 10.2174/1568026615666150217113011
21. **Dubovskii PV**, Vorontsova OV, Utkin YN, Arseniev AS, Efremov RG, Feofanov AV (2015). Cobra cytotoxins: Determinants of antibacterial activity. *MENDELEEV COMMUN* 25 (1), 70–71, 10.1016/j.mencom.2015.01.026
22. **Дубовский ПВ**, Уткин ЮН (2014). Цитотоксины кобр: структурная организация и антибактериальная активность. *Acta Naturae* 6 (3), 12–19.
23. Кузнецов АС, **Дубовский ПВ**, Воронцова ОВ, Феофанов АВ, Ефремов РГ (2014). Взаимодействие линейных катионных пептидов с фосфолипидными мембранами и полимерами сиаловой кислоты. *Biochemistry (Mosc)* 79 (5), 583–594.
24. Babailov SP, **Dubovskii PV**, Zapolotsky EN (2014). Paramagnetic lanthanides as magnetic resonance thermo-sensors and probes of molecular dynamics: Holmium-DOTA complex. *Polyhedron* 79, 277–283, 10.1016/j.poly.2014.04.067
25. **Dubovskii PV**, Utkin YN (2014). Cobra cytotoxins: structural organization and antibacterial activity. *Acta Naturae* 6 (3), 11–8.
26. **Dubovskii PV**, Konshina AG, Efremov RG (2014). Cobra cardiotoxins: Membrane interactions and pharmacological potential. *Curr Med Chem* 21 (3), 270–287, 10.2174/09298673113206660315
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28. Kuznetsov AS, **Dubovskii PV**, Vorontsova OV, Feofanov AV, Efremov RG (2014). Interaction of linear cationic peptides with phospholipid membranes and polymers of sialic acid. *Biochemistry (Mosc)* 79 (5), 459–468, 10.1134/S0006297914050101
29. Konshina AG, **Dubovskii PV**, Efremov RG (2012). Structure and dynamics of cardiotoxins. *Curr Protein Pept Sci* 13 (6), 570–584, 10.2174/138920312803582960
30. **Dubovskii PV** (2012). Unusual titration of the membrane-bound artificial hemagglutinin fusion peptide. *Eur Biophys J* 41 (12), 1077–1084, 10.1007/s00249-012-0867-8
31. 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
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33. **Dubovskii PV**, Vassilevski AA, Slavokhotova AA, Odintsova TI, Grishin EV, Egorov TA, Arseniev AS (2011). Solution structure of a defense peptide from wheat with a 10-cysteine motif. *Biochem Biophys Res Commun* 411 (1), 14–18, 10.1016/j.bbrc.2011.06.058
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35. Vassilevski AA, Kozlov SA, Zhmak MN, Kudelina IA, **Dubovskii PV**, Shatursky OY, Arseniev AS, Grishin EV (2007). Synthetic analogues of antimicrobial peptides from the venom of the Central Asian spider Lachesana tarabaevi. *Russ. J. Bioorganic Chem.* 33 (4), 376–382, 10.1134/S1068162007040024
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structure and activity mechanism of a novel spider antimicrobial peptide. *Biochemistry* 45 (35), 10759–10767, 10.1021/bi060635w

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38. **Dubovskii PV**, Lesovoy DM, Dubinnyi MA, Konshina AG, Utkin YN, Efremov RG, Arseniev AS (2005). Interaction of three-finger toxins with phospholipid membranes: Comparison of S- and P-type cytotoxins. *Biochem J* 387 (3), 807–815, 10.1042/BJ20041814
39. Feofanov AV, Sharonov GV, Dubinnyi MA, Astapova MV, Kudelina IA, **Dubovskii PV**, Rodionov DI, Utkin YN, Arseniev AS (2004). Comparative study of structure and activity of cytotoxins from venom of the cobras naja oxiana, naja kaouthia, and naja haje. *Biochemistry (Mosc)* 69 (10), 1148–1157, 10.1023/B:BIRY.0000046890.46901.7e
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pressure. *Protein Sci* 9 (4), 693–703, 10.1110/ps.9.4.693

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