

Curriculum vitae: Barbara Eletsкая



Address

Shemyakin–Ovchinnikov Institute of
bioorganic chemistry RAS, Moscow,
Russia

Contacts

<https://www.ibch.ru/en/users/1016>

Education

2018– 2014	Russia, Moscow	Russian University of Technology (MIREA).	Postgraduate program in the field of 04.06.01 "Chemical Sciences", profile 02.00.10 "Bioorganic Chemistry". Postgraduate diploma on the topic "Synthesis and Study of the Properties of Modified Nucleosides Containing Chiral Substituents at the C6 Position of Purine". Qualification awarded: "Researcher. Teacher is a Researcher".
2014– 2013	Россия, Москва	Lomonosov Moscow State University of Fine Chemical Technologies (MITHT).	The master's degree program in the field of training 240700 "Biotechnology". Master's degree on the topic: "Obtaining structural analogues of the antitumor drug Nelarabine containing residues of chiral amino acids in the C6 position" The qualification was awarded: "Master".
2012– 2008	Россия, Москва	Lomonosov Moscow State University of Fine Chemical Technologies (MITHT).	Bachelor's degree program in the field of Chemical Technology and Biotechnology. Bachelor's degree on the topic: "Synthesis of structural analogues of the antitumor drug Nelarabine using nucleic metabolism enzymes" Qualification awarded: "Bachelor of Engineering and Technology".

IBCh positions

2024–to date	Research fellow
2020–2024	Junior research fellow
2019–2023	Engineer

Language Proficiency

Russian, English

Publications

1. Tereshin MN, Melikhova TD, **Eletsкая BZ**, Ivanova EA, Onoprienko LV, Makarov DA, Razumikhin MV, Myagkikh IV, Fabrichniy IP, Stepanenko VN (2024). Biocatalytic Method for Producing an Affinity Resin for the Isolation of Immunoglobulins. *Biomolecules* 14 (7), 849, [10.3390/biom14070849](https://doi.org/10.3390/biom14070849)
2. **Eletsкая BZ**, Mironov AF, Fateev IV, Berzina MY, Antonov KV, Smirnova OS, Zatsepina AB, Arnautova AO, Abramchik YA, Paramonov AS, Kayushin AL, Khandazhinskaya AL, Matyugina ES, Kochetkov SN, Miroshnikov AI, Mikhailopulo IA, Esipov RS, Konstantinova ID (2024). Enzymatic Transglycosylation Features in Synthesis of 8-Aza-7-Deazapurine Fleximer Nucleosides by Recombinant E. coli PNP: Synthesis and Structure Determination of Minor Products. *Biomolecules* 14 (7), 798, [10.3390/biom14070798](https://doi.org/10.3390/biom14070798)
3. Fateev IV, Sasmakov SA, Abdurakhmanov JM, Ziyaev AA, Khasanov SS, Eshboev FB, Ashirov ON, Frolova

- VD, **Eletskeya BZ**, Smirnova OS, Berzina MY, Arnautova AO, Abramchik YA, Kostromina MA, Kayushin AL, Antonov KV, Paramonov AS, Andronova VL, Galegov GA, Esipov RS, Azimova SS, Miroshnikov AI, Konstantinova ID (2024). Synthesis of Substituted 1,2,4-Triazole-3-Thione Nucleosides Using E. coli Purine Nucleoside Phosphorylase. *Biomolecules* 14 (7), 745, [10.3390/biom14070745](https://doi.org/10.3390/biom14070745)
4. Tereshin MN, Melikhova TD, **Eletskeya BZ**, Ksenofontova OB, Pantyushenko PV, Berzina MY, Ivanov I, Myagkikh IV, Stepanenko VN (2024). Affinity Resins for the Isolation of Immunoglobulins G Obtained Using Biocatalytic Technology. *Int J Mol Sci* 25 (3), 1367, [10.3390/ijms25031367](https://doi.org/10.3390/ijms25031367)
 5. Khandazhinskaya A, **Eletskeya B**, Mironov A, Konstantinova I, Efremenkova O, Andreevskaya S, Smirnova T, Chernousova L, Kondrashova E, Chizhov A, Seley-Radtke K, Kochetkov S, Matyugina E (2023). New Flexible Analogues of 8-Aza-7-deazapurine Nucleosides as Potential Antibacterial Agents. *Int J Mol Sci* 24 (20), 15421, [10.3390/ijms242015421](https://doi.org/10.3390/ijms242015421)
 6. Berzina MY, **Eletskeya BZ**, Kayushin AL, Dorofeeva EV, Lutonina OI, Fateev IV, Zhavoronkova ON, Bashorin AR, Arnautova AO, Smirnova OS, Antonov KV, Paramonov AS, Dubinnyi MA, Esipov RS, Miroshnikov AI, Konstantinova ID (2023). Intramolecular Hydrogen Bonding in N6-Substituted 2-Chloroadenosines: Evidence from NMR Spectroscopy. *Int J Mol Sci* 24 (11), 9697, [10.3390/ijms24119697](https://doi.org/10.3390/ijms24119697)
 7. **Eletskeya BZ**, Berzina MY, Fateev IV, Kayushin AL, Dorofeeva EV, Lutonina OI, Zorina EA, Antonov KV, Paramonov AS, Muzyka IS, Zhukova OS, Kiselevskiy MV, Miroshnikov AI, Esipov RS, Konstantinova ID (2023). Enzymatic Synthesis of 2-Chloropurine Arabinonucleosides with Chiral Amino Acid Amides at the C6 Position and an Evaluation of Antiproliferative Activity In Vitro. *Int J Mol Sci* 24 (7), 6223, [10.3390/ijms24076223](https://doi.org/10.3390/ijms24076223)
 8. Khandazhinskaya A, Fateev I, **Eletskeya B**, Maslova A, Konstantinova I, Seley-Radtke K, Kochetkov S, Matyugina E (2023). Design and Synthesis of New Modified Flexible Purine Bases as Potential Inhibitors of Human PNP. *Molecules* 28 (3), 928, [10.3390/molecules28030928](https://doi.org/10.3390/molecules28030928)
 9. Smirnova OS, Berzina MY, Fateev IV, **Eletskeya BZ**, Kostromina MA, Kayushin AL, Paramonov AS, Prutkov AN, Grebenkina LE, Chudinov MV, Andronova VL, Galegov GA, Deryabin PG, Miroshnikov AI, Esipov RS, Konstantinova ID (2022). Chemo-enzymatic synthesis of 5-substituted ribavirin analogs: Unexpected cooperative effect in the interaction of 5-alkyloxymethyl 1,2,4-triazol-3-carboxamides with E. coli purine nucleoside phosphorylase active site. *Sustainable Chemistry and Pharmacy* 30, 100881, [10.1016/j.scp.2022.100881](https://doi.org/10.1016/j.scp.2022.100881)
 10. Zayats EA, Fateev IV, Kostromina MA, Abramchik YA, Lykoshin DD, Yurovskaya DO, Timofeev VI, Berzina MY, **Eletskeya BZ**, Konstantinova ID, Esipov RS (2022). Rational Mutagenesis in the Lid Domain of Ribokinase from E. coli Results in an Order of Magnitude Increase in Activity towards D-arabinose. *Int J Mol Sci* 23 (20), , [10.3390/ijms232012540](https://doi.org/10.3390/ijms232012540)
 11. Berzina MY, **Eletskeya BZ**, Kayushin AL, Dorofeeva EV, Lutonina OI, Fateev IV, Paramonov AS, Kostromina MA, Zayats EA, Abramchik YA, Maltsev DV, Naumenko LV, Taran AS, Yakovlev DS, Spasov AA, Miroshnikov AI, Esipov RS, Konstantinova ID (2022). Synthesis of 2-chloropurine ribosides with chiral amino acid amides at C6 and their evaluation as A1 adenosine receptor agonists. *Bioorg Chem* 126, 105878, [10.1016/j.bioorg.2022.105878](https://doi.org/10.1016/j.bioorg.2022.105878)
 12. Khandazhinskaya A, **Eletskeya B**, Fateev I, Kharitonova M, Konstantinova I, Barai V, Azhayev A, Hyvonen MT, Keinanen TA, Kochetkov S, Seley-Radtke K, Khomutov A, Matyugina E (2021). Novel fleximer pyrazole-containing adenosine analogues: chemical, enzymatic and highly efficient biotechnological synthesis. *Org Biomol Chem* 19 (34), 7379–7389, [10.1039/d1ob01069g](https://doi.org/10.1039/d1ob01069g)
 13. Fateev IV, Kostromina MA, Abramchik YA, **Eletskeya BZ**, Mikheeva OO, Lukoshin DD, Zayats EA, Berzina MY, Dorofeeva EV, Paramonov AS, Kayushin AL, Konstantinova ID, Esipov RS (2021). Multi-enzymatic cascades in the synthesis of modified nucleosides: Comparison of the thermophilic and mesophilic pathways. *Biomolecules* 11 (4), 586, [10.3390/biom11040586](https://doi.org/10.3390/biom11040586)
 14. (book) Konstantinova ID, Kayushin AL, Arnautova AO, Antonov KV, **Eletskeya BZ**, Berzina MY, Dorofeeva EV, Lutonina OI, Fateev IV, Esipov RS, Miroshnikov AI (2020). Convenient Approach to the Biosynthesis of C2,C6-Disubstituted Purine Nucleosides Using E. coli Purine Nucleoside Phosphorylase and Arsenolysis. *Wiley-VCH, John Whittall (Editor), Peter W. Sutton (Editor)* , 211–215.
 15. Naumenko V, Nikitin A, Garanina A, Melnikov P, Vodopyanov S, Kapitanova K, Potashnikova D, Vishnevskiy D, Alieva I, Ilyasov A, **Eletskeya BZ**, Abakumov M, Chekhonin V, Majouga A (2020). Neutrophil-mediated

transport is crucial for short-circulating magnetic nanoparticles delivery to tumors. *Acta Biomater* 104, 176–187, [10.1016/j.actbio.2020.01.011](https://doi.org/10.1016/j.actbio.2020.01.011)

16. **Eletskaya BZ**, Gruzdev DA, Krasnov VP, Levit GL, Kostromina MA, Paramonov AS, Kayushin AL, Muzyka IS, Muravyova TI, Esipov RS, Andronova VL, Galegov GA, Charushin VN, Miroshnikov AI, Konstantinova ID (2019). Enzymatic Synthesis of Novel Purine Nucleosides Bearing a Chiral Benzoxazine Fragment. *Chem Biol Drug Des* 93 (4), 605–616, [10.1111/cbdd.13458](https://doi.org/10.1111/cbdd.13458)
17. **Eletskaya BZ**, Konstantinova ID, Paramonov AS, Esipov RS, Gruzdev DA, Vigorov AY, Levit GL, Miroshnikov AI, Krasnov VP, Charushin VN (2016). Chemoenzymatic arabinosylation of 2-aminopurines bearing the chiral fragment of 7,8-difluoro-3-methyl-3,4-dihydro-2H-[1,4]benzoxazines. *MENDELEEV COMMUN* 26 (1), 6–8, [10.1016/j.mencom.2016.01.003](https://doi.org/10.1016/j.mencom.2016.01.003)