

Irina Kuznetcova, PhD

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As a highly motivated and dedicated scientist, I have a strong background in medicinal and organic chemistry. My passion for these fields drives me to constantly seek new knowledge and stay up-to-date with the latest advancements. I have hands-on experience in diverse laboratory research activities, including organic and inorganic synthesis, as well as the development and execution of multistep targeted synthesis with further spectroscopic characterization of compounds. Additionally, my experience in medicinal chemistry includes conducting various biological studies (MTT, Annexin V-FITC Apoptotic, and others), providing the opportunity for the primary assessment of the biological activity of substances. Eager to leverage my skills and knowledge for impactful contributions in scientific research and innovation.

EXPERIENCE

Postdoctoral Researcher

Institute of Macromolecular Chemistry Petru Poni 08.2023 – present
University of Vienna 08.2023 – 12.2023

Supervisor: ao. Univ.-Prof. Dr. Vladimir Arion

- Developed a plan for the performing synthetic part of a project.
- Organized and coordinated the process of the synthetic pathway of the project.

Ph.D. Graduate Student Researcher 03.2019 – 08.2023

University of Vienna

Supervisor: ao. Univ.-Prof. Dr. Vladimir Arion

- Developed and optimized synthetic pathway for a variety class of novel organic and coordination compounds. Overcame challenges such as high purity and reproducibility of desired compound in required quantities and within tight deadlines
- Experience in manuscript preparation, literature review, data analysis and experimental section description, as well as submission, navigating manuscript through peer-review process and achieving successful publication as a corresponding author (Beilstein J. Org. Chem)
- Performed various cell assay on cancer cell lines
- Participated in cross-national collaborations within the framework of the H2020-MSCA-RISE-2017 CLATHROPROBES project in Research Facilities and Equipment found at the Petru Poni" Institute of Macromolecular Chemistry, Iași, Romania and A.N.Nesmeyanov Institute of Organoelement Compounds of Russian Academy of Sciences (INEOS RAS) Moscow, Russia

Msc Graduate Student Researcher 10.2015 – 06.2017

Lomonosov Moscow State University

Supervisor: ao. Univ.-Prof. Dr. Olga Zefirova

Thesis: "Synthesis of novel ligands of colchicine domain in cell protein tubulin"

- Performed synthesis of organic compounds as synthetic analogues of Colchicine
- Experimental data handling for the master's thesis

SKILLS

Organic laboratory:

Schlenk technique glovebox, distillation, tlc, flash column chromatography, single crystallization

Analytical skills:

1D and 2D NMR, ESI-MS, UV-vis, Fluorescence spectrometer, HPLC, IR spectroscopy, X-ray crystallography

Biochem laboratory:

MTT Assay, Annexin V-FITC Apoptotic Assay, Flow-Cytometric Analysis of Cell Cycle Phase Distribution

Softwares:

ChemDraw, TopSpin, MestreNova, FlowJo, SciFinder, Reaxys, Zotero, Mendeley, Mercury, Word, Excel, Powerpoint

LANGUAGES

English – Advanced
German – Intermediate
Russian – Native

PUBLICATIONS

- [Kuznetcova, I.](#); Ostojić, M.; Gligorijević, N.; Arandžević, S.; Arion, V. B. Enriching Chemical Space of Bioactive Scaffolds by New Ring Systems: Benzazocines and Their Metal Complexes as Potential Anticancer Drugs. *Inorg. Chem.* 2022, *61*, 20445–20460
- [Kuznetcova, I.](#); Bacher, F.; Alfadul, S. M.; Tham, M. J. R.; Ang, W. H.; Babak, M. V.; Rapta, P.; Arion, V. B. Elucidation of Structure–Activity Relationships in Indolobenzazepine-Derived Ligands and Their Copper(II) Complexes: The Role of Key Structural Components and Insight into the Mechanism of Action. *Inorg. Chem.* 2022, *61*, 10167–10181
- [Kuznetcova, I.](#); Bacher, F.; Vegh, D.; Chuang, H.-Y.; Arion, V. B. Ready Access to 7,8-Dihydroindolo[2,3-*d*][1]Benzazepine-6(5*H*)-One Scaffold and Analogues via Early-Stage Fischer Ring-Closure Reaction. *Beilstein J. Org. Chem.* 2022, *18*, 143–151
- Christopher Wittmann, Orsolya Dömötör, [Irina Kuznetcova](#), Gabriella Spengler, Jóhannes Reynisson, Lauren Holder, Gavin J. Miller, Eva A. Enyedy, Ruoli Bai, Ernest Hamele and Vladimir B. Arion. Indolo[2,3-*e*]benzazocines and indolo[2,3-*f*]benzazonines and their copper(II) complexes as microtubule destabilizing agents. *Dalton Trans.* 2023, *52*, 9964-9982

EDUCATION

PhD in medicinal chemistry

03.2019 – 08.2023

University of Vienna, Institute of Inorganic Chemistry

Thesis: “Indolo-benzazepines, -benzazocines, and metal complexes thereof as potential anticancer drugs”, ao. Univ.-Prof. Dr. Vladimir Arion

Msc in chemistry

08.2011 – 07.2017

Lomonosov Moscow State University, Institute of Medicinal Chemistry

Thesis: “Synthesis of novel ligands of colchicine domain in cell protein tubulin”, ao. Univ.-Prof. Dr. Olga Zefirova.

INTERESTS

Anticancer chemistry,
Drug design,
Crystallography,
Molecular docking studies

Chess
Yoga
Fiction reading