

Curriculum vitae



asst. prof. Jakob Kljun, PhD, born on January 28th 1985 in Koper, Slovenia

Research, skills and career: During my PhD studies (2008-2013) and subsequent postdoctoral project (2014-2016) in the group of Prof. Iztok Turel, I mainly worked on the chemistry and mode of action of bioactive ruthenium complexes. Between these projects, I had short experiences as a crystallography expert at the EN-FIST Centre of Excellence and research in organic synthesis of medicinal compounds in an industrial project, where I specialized in different areas of chemical synthesis and characterization of novel small molecule compounds. My research experience allowed me to work first-hand with world-renowned experts in the fields of chemical synthesis, biochemistry, microbiology and pharmaceuticals. After obtaining a permanent position at FKKT, UL in 2016 and continuing my work within the Turel group, my research interests expanded to the design and synthesis of chelating molecules containing sulfur functional groups to serve either as ligands for metallodrug design (Ag, Zn, Cu, Pt, Re) or as inhibitors of metalloproteins. I am interested in multidisciplinary chemical synthesis ranging from organic to organometallic and coordination chemistry, synthesizing compounds with potential medicinal or veterinary applications, challenging conventional views and postulates of drug design, and using all the tools - elements of the periodic table - available to chemists.

Education: BSc (2008) and PhD (2013) at the Faculty of Chemistry and Chemical Technology of the University of Ljubljana (FKKT, UL)

Academic qualification:

Assistant professor in the field of Inorganic Chemistry (2017-);
Assistant for the field of Inorganic chemistry (2008-2017)

Work experience:

- Sept. – Dec. 2022 – 3-month teaching staff mobility to University of Chemical Technology and Metallurgy, Sofia, Bulgaria and guest researcher at the Bulgarian Academy of Sciences, Institute of Organic Chemistry with Centre of Phytochemistry, Sofia, Bulgaria
- Sept. 2016 - ongoing – permanent teaching position ‘Assistant’ at FKKT, UL
- Sept. 2014 - Aug. 2016 – Postdoc researcher in the research group of prof. I. Turel at FKKT, UL
- Feb. - Aug. 2014 – Postdoc researcher in the research group of prof. S. Gobec at the Faculty of Pharmacy, UL on an industrial project with pharmaceutical company Lek (Sandoz group);

- Apr. - Nov. 2013 – Researcher at the EN-FIST Centre of Excellence for research in biotechnology, pharmacy and physics;
- Oct. 2008 - Mar. 2013 – Junior researcher (PhD student) in the research group of prof. dr. Iztok Turel at FKKT, UL;

1. Bibliographic and bibliometric data

- Original scientific papers: **59**
- Published in: *Dalton Trans.* (10), *J. Inorg. Biochem.* (5), *Inorg. Chem.* (4), *Organometallics* (4), *Chem. Eur. J.* (2), *Eur. J. Med. Chem.* (1), *Inorg. Chem. Fron.* (1), *J. Med. Chem.* (1), *Metallomics* (1),
- Total citations: **2100+ (May 2025)**
- h-index: **24**

5 selected recent and most relevant publications:

1. Pivarsik, T.; Kljun, J.; Rodriguez, S.C.; Alcaraz, D.C.; Rapuš, U.; Nové, M.; Várkonyi, E.; Nyári, J.; Bogdanov, A.; Spengler, G.; Turel, I.; Enyedy, E.A., Structural and Solution Speciation Studies on *fac*-Tricarbonylrhenium(I) Complexes of 2,2'-Bipyridine Analogues, *ACS Omega* **2025**, 9, 44601-44615
2. Pivarsik, T.; Kiss, M.A.; Rapuš, U.; Kljun, J.; Spengler, G.; Frank, E.; Turel, I.; Enyedy, E.A., Organometallic Ru(II), Rh(III) and Re(I) complexes of sterane-based bidentate ligands: synthesis, solution speciation, interaction with biomolecules and anticancer activity, *Dalton Trans.* **2024**, 53, 4984-5000
3. Kljun, J.; Rebernik, M.; Balsa, L. M.; Kladnik, J.; Rapuš, U.; Trobec, T.; Sepčić, K.; Frangež, R.; León, I. E.; Turel, I., Exploring pta alternatives in the development of ruthenium-arene anticancer compounds, *Molecules* **2023**, 28, 2499
4. Kladnik, J.; Dolinar, A.; Kljun, J.; Perea, D.; Grau-Expósito, J.; Genescà, M.; Novinec, M.; Buzon, M. J.; Turel, I., Zinc pyrithione is a potent inhibitor of PL^{Pro} and cathepsin L enzymes with *ex vivo* inhibition of SARS-CoV-2 entry and replication, *J. Enz. Inh. Med. Chem.* **2022**, 37, 258-2168.
5. Kljun, J.; Pavlič, R.; Hafner, E.; Lipec, T.; Moreno-DaSilva, S.; Tič, P.; Turel, I.; Büdefeld, T.; Stojan, J.; Lanišnik Rižner, T.; Ruthenium complexes show potent inhibition of AKR1C1, AKR1C2, and AKR1C3 enzymes and antiproliferative action against chemoresistant ovarian cancer cell line, *Front. Pharmacol.* **2022**, doi: 10.3389/fphar.2022.920379

Review articles and book chapters:

6. Kljun and I. Turel, Biological activity of ruthenium complexes with quinoline antibacterial and antimalarial drugs, Ch. 12 in A. A. Holder, L. Lilge, W. R. Browne, M. A. W. Lawrence, J. L. Bullock Jr. (Eds.), *Ruthenium complexes: photochemical and biomedical applications*, **2018**, Wiley-VCH, Weinheim, Germany
7. Kljun, J.; Turel, I., β -Diketones as Scaffolds for Anticancer Drug Design – From Organic Building Blocks to Natural Products and Metallodrug Components. *Eur. J. Inorg. Chem.* **2017**, 1655-1666.

2. Invited lectures

- Plenary lecture at the Croatian-Slovenian Crystallographic Meeting 2022, Poreč, Croatia.
- Invited lectures at the 2nd meeting of Slovenian Pharmaceutical Chemists in 2015 in Ljubljana, Slovenia and the 53rd Meeting of the Serbian Chemical Society in Kragujevac, Serbia in 2016, University of Sofia, Bulgarian academy of Sciences and University of Chemical Technology and Metallurgy Sofia in 2022, Minisymposium 'Design and inhibition of peptidase inhibitors and active probes', Faculty of Pharmacy, University of Ljubljana 2024.

3. Organisation of international conferences

Member of the organizing committee of 'Cutting Edge' conference series an international one-day event for BSc, MSc, PhD students and post-doc researchers in the field of chemical sciences held in Ljubljana, Slovenia in 2015, 2017, and 2019. Member of the organizing committee of the Slovenian-Croatian Crystallographic Meeting in 2023.

4. Participations in industrial innovations

Between February and August 2014 I was member of the research team on the project 'Synthesis of medicinal agents' in collaboration between the Faculty of Pharmacy of the University of Ljubljana and Lek pharmaceutical company d.d. (member of the Sandoz group).

5. Funding received

I recieved a grant from the Slovenian research agency for a postdoctoral project for 2 years for a cumulative amount of 100k €. Received funding in forms of grants and bursaries for Erasmus student exchange, COST Short term scientific mission, Durham crystallography school and Bimasouti summer school for a total of approx. 8k €. I collaborated on two knowledge & skill transfer projects 'Po kreativni poti do znanja' between the Faculty of Pharmacy, FKKT and the pharmaceutical company Lek (Sandoz group) funded by the Slovenian ministry for Education, Science and Sport in 2016 and 2017.

6. Prizes and awards

Member of the Cutting edge society board which was awarded the prize 'Prometej znanosti za odličnost v komuniciranju' (Prometheus of science for excellence in communication) in 2020 by the Slovenian Science Foundation.

7. Supervising activities

Supervisor of several students within different study programs of FKKT UL (2018-):

BSc Chemistry or BSc Chemical Technology 18;

MSc Chemistry: 3;

PhD students: 2 ongoing mentorship and 1 ongoing co-mentorship.