

TANA TANDARIĆ

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WORK EXPERIENCE

12/12/2016 – PRESENT

RESEARCH ASSISTANT, DEPARTMENT OF ORGANIC CHEMISTRY AND BIOCHEMISTRY, RUĐER BOŠKOVIĆ INSTITUTE, ZAGREB (CROATIA)

2013 – 2016

RESEARCH VOLUNTEER, DEPARTMENT OF ORGANIC CHEMISTRY, FACULTY OF PHARMACY AND BIOCHEMISTRY, ZAGREB (CROATIA)

01/02/2016 – 01/08/2016

STUDENT PRACTICE, DEPARTMENT OF MEDICINAL CHEMISTRY, UNIVERSITY HOSPITAL FOR TUMORS, ZAGREB (CROATIA)

EDUCATION

2016 – 2021

PHD IN ORGANIC CHEMISTRY,

Faculty of Science - Chemistry Department, University of Zagreb, Zagreb (Croatia)

Doctoral thesis: Computational Investigation of the Mechanism of the Irreversible Inhibition of the Monoamine Oxidase B Enzyme

Supervisor: Robert Vianello PhD

2007 – 2008

MASTER OF MEDICINAL BIOCHEMISTRY,

Faculty of Pharmacy and Biochemistry, University of Zagreb, Zagreb (Croatia)

Master thesis: Reaction mechanism of 5-fluorouracil chlorination

Supervisor: prof. Valerije Vrček PhD

2007 – 2011

XV. GYMNASIUM,

Zagreb (Croatia)

MOTHER TONGUE: CROATIAN

LANGUAGES:

	UNDERSTANDING		SPEAKING		WRITING
	LISTENING	READING	SPOKEN INTERACTION	SPOKEN PRODUCTION	
ENGLISH	C2	C2	C1	C1	C1
ITALIAN	B1	B1	A2	A2	B1

COMMUNICATION SKILLS:

Good communication and presentation skills acquired through participation and organization of various conferences, by teaching at the Faculty of Pharmacy and Biochemistry and participating in the science popularization.

ORGANISATIONAL / MANAGERIAL SKILLS

- Ruđer Bošković Institute, Council of Young Scientists, chairperson, 12/2018 – 2/2022.
- Ruđer Bošković Institute, Scientific Council, representative of young scientists 02/2021 – 2/2022.
- Member of the organization committee of the 2nd Computational Chemistry Day (Zagreb, 2019.)
- Participation in organization the MODENA Final Dissemination Conference (Zagreb, 2016.)
- Member of the organization committee of the 2nd Symposium of Chemistry Students (Zagreb, 2015.)
- Active participation in different Science popularisation activities (Ruđer Bošković Institut open days, Faculty of Science open days, BASF Chemgeneration workshops)

JOB-RELATED SKILLS:

- Great experience in using computational chemistry softwares (Gaussian program suite, Amber program suite, VMD visualization software, MOLDEN visualization software).
- Experience in recording and assignment NMR spectra.
- Experience working with automated biochemical and hematological analyser.
- Intermediate advanced programming (Python3, Pascal)

DIGITAL SKILLS:

- Microsoft Office (Word, Excel, Publisher and PowerPoint)
- ChemOffice
- Gaussian 16 program package
- Amber 16 program package

- Q6 program package
- MedCalc statistical software
- VMD (molecular visualization program)
- MOLDEN (visualization program of molecular and electronic structure)
- UCSF Chimera (vizualizacijski program)
- Python 3

RESEARCH VISITS

- 01/10/2018 – 01/11/2018 National Institute of Chemistry, Ljubljana, Slovenia. (host: prof. Janez Mavri PhD)
- 01/10/2019 – 01/11/2019 Sorbonne Université, Paris, France. (host: prof. Etienne Derat PhD)
- 1/3/2022 – Max Perutz Labs, Univeraity of Vienna, Vienna, Austria (host: prof. Bojan Žagrović PhD)

TEACHING:

General Chemistry with Stoichiometry, Stoichiometry Seminars, Faculty of Pharmacy and Biochemistry, University of Zagreb, 2019/2020.

HONOURS AND AWARDS:

- 2021: Scholarship of the Austrian Academy of Arts and Sciences (JESH - Croatia) for a stay of six months in Max Perutz labs (Vienna, Austria)
- Annual Ruđer Bošković Institute award for published scientific paper in 2019 and 2020
- 09/2019: Thiene poster award, 16th European Symposium of Organic Reactivity, Dubrovnik
- 2019: French Government Scholarship for a one-month stay at the Sorbonne University (Paris, France).
- Recipient of the Annual Dean's Award for Scientific Work "Chlorination of N-Methylacetamide and Amide-Containing Pharmaceuticals. Quantum- Chemical Study of the Reaction Mechanism. " published in scientific Journal of Physical Chemistry A for the academic year 2013/2014.
- Recipient of the Annual Dean's Award for Student Research "The chemical fate of antiepileptics neutrophile. In silico research of reaction mechanism with hypochlorous acid ." for the academic year 2014/2015.

LIST OF PUBLICATIONS:

Number of papers in WoS journals : 15. Total citations: 114. H-index: 7.

Marinović, M., Poje, G., Perković, I., Fontinha, D., Prudêncio, M. Held, J., Pessanha de Carvalho, L., **Tandarić, T.**, Vianello, R. Rajić Z. Further investigation of harmicines as novel antiplasmodial agents: Synthesis, structure-activity relationship and insight into the mechanism of action. (2021) European Journal of Medicinal Chemistry. 224:113687. doi: 10.1016/j.ejmech.2021.113687

Matić, J., Jukić, M., Ismaili, H., Saftić, D., Ban, Ž., **Tandarić, T.**, Vianello, R., Opačak-Bernardi, T., Glavaš Obrovac, LJ. & Žinić, B. 6-Morpholino-and 6-amino-9-sulfonyl-purine derivatives. Synthesis, computational analysis, and biological activity. (2021) Nucleosides, Nucleotides & Nucleic Acids. (1525-7770) 40 (4), 1-34. doi:10.1080/15257770.2021.189600

Marinović, M., Perković, I., Fontinha, D., Prudêncio, M., Held, J., Pessanha de Carvalho, L., **Tandarić, T.**, Vianello, R., Zorc, B. & Rajić, Z. (2020) Novel Harmicines with Improved Potency against Plasmodium. *Molecules*, 25 (19), 4376, 19 doi:10.3390/molecules25194376.

Tandarić, T., Prah, A., Stare, J., Mavri, J. & Vianello, R. (2020) Hydride Abstraction as the Rate-Limiting Step of the Irreversible Inhibition of Monoamine Oxidase B by Rasagiline and Selegiline: A Computational Empirical Valence Bond Study. *International journal of molecular sciences*, 21 (17), 6151, 13 doi:10.3390/ijms21176151.

Rimac, H., **Tandarić, T.**, Vianello, R. & Bojić, M. (2020) Indomethacin increases quercetin affinity for human serum albumin: a combined experimental and computational study and its broader implications. *International journal of molecular sciences*, 21 (16), 5740, 14 doi:10.3390/ijms21165740.

Perković, I., Raić-Malić, S., Fontinha, D., Prudêncio, M., Pessanha de Carvalho, L., Held, J., **Tandarić, T.**, Vianello, R., Zorc, B. & Rajić, Z. (2020) Harmicines – harmine and cinnamic acid hybrids as novel antiplasmodial hits. *European journal of medicinal chemistry*, 187, 111927, 16 doi:10.1016/j.ejmech.2019.111927.

Tandarić, T., Hok, L. & Vianello, R. (2019) From Hydrogen Peroxide-Responsive Boronated Nucleosides Towards Antisense Therapeutics – A Computational Mechanistic Study. *Croatica chemica acta*, 92 (2), 287-295 doi:10.5562/cca3592.

Toma, M., Božičević, L., Lapić, J., Djaković, S., Šakić, D., **Tandarić, T.**, Vianello, R. & Vrčec, V. (2019) Transacylation in Ferrocenoyl-Purines. NMR and Computational Study of the Isomerization Mechanism. *Journal of organic chemistry*, 84 (19), 12471-12480 doi:10.1021/acs.joc.9b01944.

Tandarić, T. & Vianello, R. (2019) Computational Insight into the Mechanism of the Irreversible Inhibition of Monoamine Oxidase Enzymes by the Antiparkinsonian Propargylamine Inhibitors Rasagiline and Selegiline. *ACS Chemical Neuroscience*, 10 (8), 3532-3542 doi:10.1021/acchemneuro.9b00147.

Matić, J., Šupljika, F., **Tandarić, T.**, Dukšić, M., Piotrowski, P., Vianello, R., Brozovic, A., Piantanida, I., Schmuck, C. & Radić Stojković, M. (2019) DNA/RNA recognition controlled by the glycine linker and the guanidine moiety of phenanthridine peptides. *International journal of biological macromolecules*, 134, 422-434 doi:10.1016/j.ijbiomac.2019.

Hok, L., Ulm, L., **Tandarić, T.**, Krivohlavek, A., Šakić, D. & Vrčec, V. (2018) Chlorination of 5-fluorouracil: Reaction mechanism and ecotoxicity assessment of chlorinated products. *Chemosphere*, 207 (18), 612-619 doi:10.1016/j.chemosphere.2018.05.140.

Tandarić, T. & Vianello, R. (2018) Design of Exceptionally Strong Organic Superbases Based on Aromatic Pnictogen Oxides: Computational DFT Analysis of the Oxygen Basicity in the Gas Phase and Acetonitrile Solution. *The journal of physical chemistry. A, Molecules, spectroscopy, kinetics, environment, & general theory*, 122 (5), 1464-1471 doi:10.1021/acs.jpca.7b11945.

Dabić, D., Brkljačić, L., **Tandarić, T.**, Žinić, M., Vianello, R., Frkanec, L. & Kobetić, R. (2018) The Metal Effect on Self-Assembling of Oxalamide Gelators Explored by Mass Spectrometry and DFT Calculations. *Journal of the American Society for Mass Spectrometry*, 28 (1), 103-113 doi:10.1007/s13361-017-1834-5.

Tandarić, T., Vrčec, V. & Šakić, D. (2016) Quantum Chemical Study of HOCl-Induced Transformations of Carbamazepine. *Organic & biomolecular chemistry*, 14, 10866-10874 doi:10.1039/C6OB02166B.

Šakić, D., Šonjić, P., **Tandarić, T.** & Vrček, V. (2014) Chlorination of N-Methylacetamide and Amide-Containing Pharmaceuticals : Quantum-Chemical Study of the Reaction Mechanism. The journal of physical chemistry. A, 118 (12), 2367-2376 doi:10.1021/jp5012846.

ORAL CONTRIBUTIONS:

Tandarić, T., Prah, A., Stare, J., Mavri, J., Vianello, R. Computational investigation of the mechanism of the irreversible inhibition of the monoamine oxidase B enzyme. 27th Croatian Meeting of Chemists and Chemical Engineers (27HSKIKI). Veli Lošinj, 2021.

Tandarić, T. & Vianello, R. Irreversible Inhibition of the MAO B Enzyme. A Computational Insight. Fifth mini symposium of the Section of Medicinal and Pharmaceutical Chemistry of Croatian Chemical Society. Zagreb, 2021.

Tandarić, T., Vianello, R. Irreversible Inhibition of the MAO B Enzyme. A Computational Insight into the Inactivation Mechanism. Humboldt College, Zagreb, 2019.

Tandarić, T., Vianello, R. Computational insight into the MAO B enzyme irreversible inhibition. Computational Chemistry Day 2019, Zagreb.

Tandarić, T., Vianello, R. Irreversible inhibition of the monoamine oxidase B enzyme. A computational insight. The symposium PMF PhD students. Zagreb, 2019.

Tandarić, T., Vianello, R. Irreversible inhibition of the monoamine oxidase B enzyme. A computational insight. 2nd Mini-symposium of Medicinal and Pharmaceutical Chemistry. Zagreb, 2018.

Šonjić, P., Tandarić, T., Šakić, D., Vrček, V. Influence of N3 and C5 substituents on reactivity barbiturate with hypochlorous acid. Quantum Chemical Study. 1st Symposium of Chemistry students. (SISK) Zagreb, 2014.

Šonjić, P., Tandarić, T., Šakić, D., Vrček, V. The influence of substituents on the resistance of barbituric acid derivatives to chlorination with hypochlorous acid. Quantum Chemical Study. 24th Croatian Meeting of Chemists and Chemical Engineers (24HSKIKI). Zagreb, 2015.

Tandarić, T., Vianello, R. Computational insight into the cyclotrimerization of isocyanates using bicyclic guanidine catalyst. 25th Croatian Meeting of Chemists and Chemical Engineers (25HSKIKI). Poreč, 2017.

Tandarić, T., Vianello, R. Irreversible inhibition of monoamine oxidase B enzyme. A computational insight. XII Meeting of Young Chemical Engineers (XII SMLKI). Zagreb, 2018.

Šonjić, P., Tandarić, T., Šakić, D., Vrček, V. Why are barbiturates hard to chlorinate? Quantum Chemical Study. 3rd Symposium of Students of Pharmacy and Medicinal Biochemistry (FARMEBS). Zagreb, 2014.

POSTER CONTRIBUTIONS:

Tandarić, T., Vianello, R. A computational insight into the mechanism of the irreversible inhibition of monoamine oxidase enzymes by the antiparkinsonian propargylamine inhibitors rasagiline and selegiline. 18th Hellenic Symposium on Medicinal Chemistry (Online Symposium), Online Symposium, 2021.

Tandarić, T., Vianello, R. Computational insight into the MAO B enzyme irreversible inhibition. 16th European Symposium of Organic Reactivity. Dubrovnik, 2019.

Tandarić, T., Vianello, R. Irreversible inhibition of monoamine oxidase B enzyme. A computational insight. 5th EFMC Young Medicinal Chemist Symposium. Ljubljana, Slovenija, 2018.

Tandarić, T., Vianello, R. Irreversible inhibition of monoamine oxidase B enzyme. A computational insight. XXV EFMC International Symposium on Medicinal Chemistry. Ljubljana, Slovenija, 2018.

Tandarić, T., Vianello, R. Irreversible inhibition of monoamine oxidase B enzyme. A computational insight. Computational chemistry day, Zagreb, 2018.

Tandarić, T., Vianello, R. Irreversible inhibition of monoamine oxidase B enzyme. A computational insight. 2nd Symposium of PhD Students at Faculty of Science University of Zagreb. Zagreb, 2018.

Tandarić, T., Vianello, R. Novel and Efficient Bicyclic Guanidine Catalyst for the Cyclotrimerization of Isocyanates. A Quantum Chemical Study. 10th Joint Meeting on Medicinal Chemistry. Srebreno (Dubrovnik), 2017.

Petrović Peroković, V., Car, Ž., Meglič, K., Ribić, R., Tandarić, T., Vianello, R., Tomić, S. Novel para substituted N-aryl 3-hydroxypyridin-4-one mannosides: Synthesis, hemagglutination inhibitory properties and molecular modeling. 10th Joint Meeting on Medicinal Chemistry. Srebreno (Dubrovnik), 2017.

Hok, L., Pem, B., Tandarić, T., Šakić, D., Vrčec, V. Chlorination of barbiturate. Quantum Chemical Study of Reaction Mechanism. 6th Symposium of Students of Pharmacy and Medicinal Biochemistry (FARMEBS). Zagreb, 2017.

Tandarić, T., Hok, L., Šakić, D., Vrčec, V. Mechanism of reaction between 5-fluorouracil and hypochlorous acid. 6th Symposium of Students of Pharmacy and Medicinal Biochemistry (FARMEBS). Zagreb, 2017.

Hok, L., Pem, B., Tandarić, T., Šakić, D., Vrčec, V. Chlorination of barbiturate. Quantum Chemical Study of Reaction Mechanism. 25th Croatian Meeting of Chemists and Chemical Engineers (25HSKIKI). Poreč, 2017.

Tandarić T, Šonjić P, Šakić D, Vrčec V. Influence of substituents on reactivity of barbituric acid derivative with hypochlorous acid. 5th Croatian Congress of Pharmacy with International Participation. Rovinj, 2015.

Šakić, D., Tandarić, T., Vrčec, V. Why Hypochlorous Acid Chlorinates Amines Rather than Hydroxylates Them? 15th European Symposium of Organic Reactivity. Kiel, 2015.

PASIVE CONTRIBUTION:

HORIZON 2020 SUMMER SCHOOL 2017. Siena, Italy, 2017.

23rd INTERNATIONAL SYMPOSIUM ON GLYCOCONJUGATES. Split, 2015.

12th International School of Biophysics Greta Pifat - Mrzljak. Primošten, 2014.

MEMBERSHIPS:

- Croatian Chemical Society 2016.- present

OTHER:

- Driver's license, B category
- Member of the speleological department of HPD Željezničar (trainee speleologist)
- Member of the editorial board of the professional journal "Speleologist"
- RYS TT 200 certified yoga teacher