

BÁLINT LŐRINCZI



University of Szeged
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RESEARCH AREA

Our research is focused on the preparation of kynurenic acid (KYNA) derivatives with endogenous neuroprotective function by modifying their synthesis or by further transformations of the products (e.g. in modified Mannich reactions or in aza-Friedel-Crafts reactions). Furthermore, via the appropriate modifications of the KYNA synthesis, maleimide-type protein marker molecules and polycyclic phenanthrene derivatives with potential antitumor activity can also be synthesized and together with the production of iodinated benzyloxyalkylamines with antiarrhythmic activity they are also part of our research work.

TECHNIQUES AVAILABLE IN THE LAB

Our main focus is preparative chemistry meaning that by working with us, students can learn to carry out a wide range of organic chemical syntheses. Depending on the topic, students will learn different synthetic procedures (from simple amidations to more complex multicomponent reactions) and several methods to carry them out (e.g. one-batch, microwave-assisted, flow). They will be able to monitor reactions and isolate products using modern separation techniques (column and flash chromatography, HPLC) and learn to characterize the products obtained, including the evaluation of NMR spectra. In addition to the knowledge of organic chemistry, a strong emphasis is also placed on the review of medicinal chemistry, as the bioassay of synthesized derivatives can also be learned.

SELECTED PUBLICATIONS

Lőrinczi, B., Csámpai, A., Fülöp, F., Szatmári, I. (2020) Synthesis of New C-3 Substituted Kynurenic Acid Derivatives. *Molecules* 2020, 25, 937.

Lőrinczi, B., Csámpai, A., Fülöp, F., Szatmári, I. (2021) Synthetic- and DFT modelling studies on regioselective modified Mannich reactions of hydroxy-KYNA derivatives. *RSC Adv* 2021, 11, 543.

Lőrinczi, B., Simon, P., Szatmári, I. (2022) Synthesis of Indole-Coupled KYNA Derivatives via C–N Bond Cleavage of Mannich Bases. *Int J Mol Sci* 2022, 23, 7152.

Simon, P., Lőrinczi, B., Hetényi, A., Szatmári, I. (2023) Novel Eco-friendly, One-Pot Method for the Synthesis of Kynurenic Acid Ethyl Esters. *ACS Omega* 2023, 8, 17966.