LIEBIG LECTURESHIP

der Liebig-Vereinigung für Organische Chemie

in der Gesellschaft Deutscher Chemiker

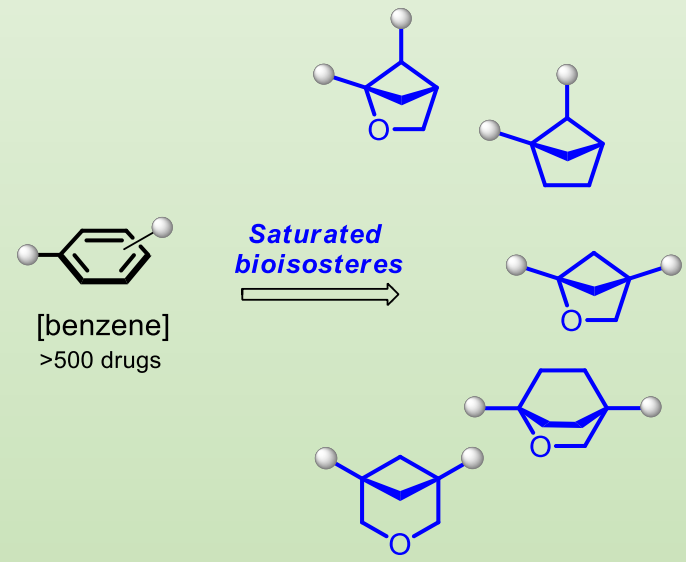
April 2027

Dr. Sci. Pavel Mykhailiuk

Enamine Ltd. & Taras Shevchenko National University of Kyiv / UA

Saturated Bioisosteres of Benzene

In this presentation, I will describe our work on the design, synthesis and validation of saturated benzene bioisosteres: 3D-shaped building blocks that replace flat aromatic rings and common heterocycles in drug candidates. First, I will present oxa-bicycloalkanes as bioisosteres of *ortho*- and *meta*-substituted benzenes.[1,2] Second, I will discuss aza-bicycloalkanes as bioisosteres of pyridine and piperidine.[3,4] Third, I will show how scalable light-enabled reactions give access to bicyclo[1.1.1]pentanes.[5] Finally, I will demonstrate how replacing the piperidine ring in the local anesthetic bupivacaine with an aza-spirocycle gives a patent-free derivative with retained bioactivity.[6]



[1] Angew. Chem. Int. Ed. 2024, 63, e202319831. [2] Angew. Chem. Int. Ed. 2025, 64, e202505519. [3] Angew. Chem. Int. Ed. 2025, 64, e202517814. [4] Angew. Chem. Int. Ed. 2025, 64, e202418850. [5] Nat. Synth. 2024, 3, 1538–1549. [6] J. Med. Chem. 2026, 69, 12291–12306.



Location	Day of the week	Date
Freiburg	Monday	April 19th
Gießen	Tuesday	April 20th
Kaiserslautern	Wednesday	April 21st
Mainz	Thursday	April 22nd
Frankfurt	Friday	April 23rd
Karlsruhe	Monday	April 26th
Wuppertal	Tuesday	April 27th

Pavel Mykhailiuk was born in Kerch (Ukraine). In 2009, he received a PhD in biochemistry from the Karlsruhe Institute of Technology (Germany) with Prof. Anne Ulrich, and a PhD in organic chemistry from the Taras Shevchenko National University of Kyiv with Prof. Igor Komarov. That same year, he joined Enamine Ltd., where he has been Chief Scientific Officer since 2017, the year he also received his Dr. Sci. degree. He was a Fulbright visiting scientist with Prof. Phil Baran (Scripps, USA) in 2018–19. He received an ERC Consolidator Grant in 2020 and the RSC Fluorine Award in 2021. His research focuses on the synthesis of 3D-shaped building blocks and saturated bioisosteres for drug discovery.

Die Liebig-Vereinigung für Organische Chemie richtete 1999 die Vortragsreihe „Liebig-Lectureship“ für herausragende ausländische Vertreter der organischen Chemie ein. Sie wird an exzellente junge Wissenschaftler vergeben und führt die damit Ausgezeichneten an fünf oder mehr Forschungsinstitute ihrer Wahl.