



COST ACTION GREENERING – DATA COLLECTION

First name, Family Name: Ryszard, Ostaszewski

Type (Academic or Industrial): Academic

Country: Poland

Leadership position in the COST: no

Working Group in which you are involved: WG1, WG3

E-mail: Ryszard.ostaszewski@icho.edu.pl

Laboratory/Company: Institute of Organic Chemistry, Polish Academy of Sciences

Laboratory/Company info (limited to 400 characters):

The Institute of Organic Chemistry of the Polish Academy of Sciences (IOC PAS) was established in 1964, when the Department of Organic Synthesis of the Polish Academy of Sciences was advanced to the rank of a Research Institute. Soon after, the Warsaw facility of the Institute received its present location on Kasprzaka street. Current research activity of professor Ostaszewski group: biocatalysis, the studies on the new types of enzymatically catalysed reactions (promiscuity); stereocontrolled synthesis – kinetic resolution, dynamic kinetic resolution of racemates; the design of the chemoenzymatic cascade reactions – multicomponent reactions; the synthesis of biologically active compounds; design and synthesis of new hydrogen sulphide donors (in cooperation with prof. M. Ufnal, WUM) and anti-cancer active compounds (in cooperation with prof. J. Malejczyk, prof. J. Gołąb, WUM) – the application of soft matter, micellar systems as an effective medium in chemical and enzymatic reactions.

Link to the home page of the Laboratory/Company:

<https://www.icho.edu.pl/ostaszewski/>

Fields of expertise (limited to 400 characters):

- His scientific interests comprise chemistry and stereochemistry of multicomponent reactions, biocatalytic syntheses of enantiomerically pure peptidemimetics, enzyme immobilization and domino/cascade chemoenzymatic processes. He is an author or coauthor of over 120 publications, including one chapter in book. He has been organizer of three international conferences, devoted to the application of enzymes in organic chemistry. He has supervised ten Ph.D. theses and the next three are pending.

5 Main publications or patents:

- D. Koszlewski, R. Ostaszewski, *ChemCatChem*, **2019**, *10*, 2554-2558 "Biocatalytic promiscuity of lipases in carbon–phosphorus bond formation"
- . Paprocki, A. Madej, D. Koszlewski, A. Brodzka, R. Ostaszewski, *Frontiers in Chemistry*, **2018**, *6*, 502, 1-21 „Multicomponent reactions accelerated by aqueous micelles"
- S. Serrano-Luginbühl, K. Ruiz-Mirazo, R. Ostaszewski, F. Gallou, P. Walde, *Nature Review Chemistry* , **2018**, *2*, 306 - 327 „Soft and dispersed interface- rich aqueous systems that promote and guide chemical reactions",
- A. Żądło-Dobrowolska, D. Koszlewski, D. Paprocki, A. Madej, M. Wilk, R. Ostaszewski, ", *ChemCatChem*,, *9*, **2017**, 3047-3053, „Enzyme-promoted Asymmetric Tandem Passerni Reaction"



- D. Koszelewski, A. Brodzka, A. Żądło, D. Paprocki D., D. Trzepizur, M. Zysk, R. Ostaszewski, *ACS Catal.*, **2016**, 6, 3287–3292, DOI: „Dynamic Kinetic Resolution of 3-aryl-4-Pentenoic Acids”
- S. Kłossowski, B. Wiraszka, S. Berłożecki, R. Ostaszewski *Org. Lett.*, **2013**, 15, 566–569, “Model Studies on the First Enzyme-Catalyzed Ugi Reaction”
- S. Kłossowski, A. Muchowicz, M. Firczuk, M. Świech, A. Redzej, J. Gollab, R. Ostaszewski, *J. Med. Chem.* **55**, **2012**, 55-67 „Studies towards novel peptidomimetic inhibitors of thioredoxin-thioredoxin reductase system”.

Collaborations:

Professor Peter Walde - Laboratory of Polymer Chemistry, Department of Materials
ETH Zurich Vladimir-Prelog-Weg 5, 8093 Zurich, Switzerland

Professor Jakub Gołąb Department of Immunology, Center of Biostructure Research, Medical
University of Warsaw, Banacha 1A, F building, 02-097 Warsaw, Poland

Professor Jacek Malejczyk, Department of Histology and Embryology, The Medical
University of Warsaw, 5 Chalubinskiego Str., 02-004 Warsaw, Poland

Facilities:

- **Laboratory for the Analysis of Bioactive Compounds**
- The laboratory offers comprehensive, high-quality analysis of:
 - nuclear magnetic resonance (NMR),
 - mass spectrometry (MS),
 - optical spectroscopy (UV-VIS-NIR, IR, ECD, VCD, ORD, LD),
 - X-ray crystallography (X-ray),
 - elemental analysis (EA).
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- **Nuclear Magnetic Resonance Lab**
- Instruments:
 - Varian Mercury 400 MHz
 - Bruker DRX 500 MHz
 - Varian VNMRS 500 MH
 - Varian VNMRS 600 MHz
- **Mass Spectrometry Lab**
- AutoSpec Premier (Waters) + HP 7890 (Agilent) gas chromatograph
- SYNAPT G2-S (Waters) + ACQUITY I-Class (Waters) liquid chromatograph
- GCT Premier (Waters) + 6890N gas chromatograph (Agilent)
- 7890A & 5975C GC/MS system (Agilent)
- 4000 Q-TRAP (SCIEX)
- **Optical Spectroscopy Lab**
- Instruments:
 - Spectropolarimeter ECD Jasco J-715
 - Spectropolarimeter ECD Jasco J-815, for solid-phase measurements
 - Spectropolarimeter ORD Jasco J-815
 - Chiral IR-2X DualPEM BioTools spectrometer
 - Jasco V-670 UV-VIS-NIR spectrophotometer
 - UV-VIS Varian spectrophotometer Carry 100E



- Spectrophotometer FTIR Jasco 6200
- Spectrophotometer FTIR Shimadzu IRTracer-100
- **X-ray Crystallography Lab**
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