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## *COST ACTION GREENERING – DATA COLLECTION*

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**First name, Family Name: Vladimír Mastihuba**

**Type (Academic or Industrial): Academic**

**Country: Slovakia**

**Leadership position in the COST:**

**Working Group in which you are involved: WG1**

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**Laboratory/Company:**

Laboratory of Biocatalysis and Organic Synthesis (LoBOS)  
Institute of Chemistry, Slovak Academy of Sciences, Bratislava, Slovakia

**Laboratory/Company info (limited to 400 characters):**

LoBOS is a team of organic chemists and biotechnologists oriented on combining processes of biocatalysis and standard organic synthesis synthesis of saccharides and their derivatives. LoBOS operates within the Institute of Chemistry, which deals with all aspects of sugar chemistry (synthesis, isolation, structural characterisation, macromolecular chemistry, material science, microbiology, biochemistry, immunochemistry and glycomics. The Institute has also a pilot plant for production of rare saccharides on commercial basis.

**Link to the home page of the Laboratory/Company:**

<http://www.biocatalysis.sav.sk/>, <http://chem.sk/>

**Fields of expertise (limited to 400 characters):**

- Biocatalysis
  - o synthesis of conjugates of saccharides and natural phenolics,
  - o kinetic resolution of enantiomers,
  - o preparation of rare saccharides and their derivatives
  - o valorisation of natural materials and agroindustrial wastes to rare saccharides
  - o fine chemicals (enzyme probes, chiral building blocks, aroma substances)
- New enzyme assays
- Screenings for new or unusual enzyme activities

**5 Main publications or patents:**

- E. Karnišová Potocká, M. Mastihubová, V. Mastihuba (2021). Transrutinosylation of tyrosol by flower buds of *Sophora japonica*. *Food Chemistry* 336, 127674.
- E. Karnišová Potocká, M. Mastihubová, V. Mastihuba (2019). Enzymatic synthesis of tyrosol and hydroxytyrosol  $\beta$ -D-fructofuranosides. *Biocatalysis and Biotransformation* 37: 18-24.



- V. Hollá, M. Antošová, K. Karkeszová, V. Mastihuba, M. Polakovič (2019). Screening of Commercial Enzymes for Transfructosylation of Tyrosol: Effect of Process Conditions and Reaction Network. *Biotechnology Journal* 14(8): 1800571.
- E. Potocká, M. Mastihubová, V. Mastihuba (2015). Enzymatic synthesis of tyrosol glycosides. *Journal of Molecular Catalysis B: Enzymatic* 113: 23-28.
- A. Chyba, V. Mastihuba, M. Mastihubová (2016). Effective enzymatic caffeoylation of natural glucopyranosides. *Bioorganic and Medicinal Chemistry Letters* 26: 1567-1570.

### **Collaborations:**

Institute of Chemical and Environmental Engineering, Slovak University of Technology, Bratislava, Slovakia

Institute of Biotechnology, Slovak University of Technology, Bratislava, Slovakia

Faculty of Agriculture, University of South Bohemia, České Budějovice, Czech Republic

### **Facilities:**

- Modern laboratory equipment for organic synthesis and biocatalysis, reaction monitoring, product purification and characterisation
- Small volume SC CO<sub>2</sub> extractor
- Small microwave reactor
- Access to 400 and 600 MHz NMR, HRMS, GC-MS, etc.