



COST ACTION GREENERING – DATA COLLECTION

First name, Family Name: Martina Sudar

Type (Academic or Industrial): Academic

Country: Croatia

Leadership position in the COST:

Working Group in which you are involved:

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Laboratory/Company: Biocatalysis group, Department of Reaction Engineering and Catalysis, Faculty of Chemical Engineering and Technology, University of Zagreb, Croatia

Laboratory/Company info (limited to 400 characters):

The core activities of the Faculty of Chemical Engineering and Technology are research, investigation and high-level education in the fields of Chemical Engineering and Chemistry. Biocatalysis group at the Department of Reaction Engineering and Technology works on the optimization of enzymatic reactions using enzyme reaction engineering approach.

Link to the home page of the Laboratory/Company:

<https://www.fkit.unizg.hr/en>

Fields of expertise (limited to 400 characters):

- biocatalysis
- protein isolation and purification
- mathematical modelling and process optimization

5 Main publications or patents:

- Česnik, M; Sudar, M; Roldan, R; Hernandez, K; Parella, T; Clapés, P; Charnock, S; Vasić- Rački, Đ; Findrik Blažević, Z. Model-based optimization of the enzymatic aldol addition of propanal to formaldehyde; a first step towards enzymatic synthesis of 3-hydroxybutyric acid. *Chem Eng Res Des.* 150 (2019), 140-152.
- Sudar, M; Findrik, Z; Szekrenyi, A; Clapés, P; Vasić-Rački, Đ. Reactor and microreactor performance and kinetics of the aldol addition of dihydroxyacetone to benzyloxycarbonyl-N-3-aminopropanal catalyzed by D-fructose-6-phosphate aldolase variant A129G. *Chem Eng Commun.* 206 (2018), 7; 927-939.
- Sudar, M; Dejanović, I; Müller, M, Vasić-Rački, Đ; Findrik Blažević, Z. Application of chemical engineering methodology in process development: a case study of MenD-catalyzed synthesis of 6-cyano-4-oxohexanoic acid. *Chem Biochem Eng Q.* 32 (2018), 4; 501-510.
- Sudar, M, Vasić-Rački, Đ, Müller, M, Walter, A, Findrik Blažević, Z. Mathematical model of the MenD-catalyzed 1,4-addition (Stetter Reaction) of α -ketoglutaric acid to acrylonitrile. *J Biotechnol.*, 268 (2018) 71-80.
- Sudar, M, Findrik, Z, Vasić-Rački, Đ, Soler, A, Clapes, P. A new concept for production of (3*S*, 4*R*)-6- [(benzyloxycarbonyl)amino]-5,6-dideoxyhex-2-ulose, a precursor of D-fagomine. *RSC Adv.*, 5 (2015) 69819-69828.

**Collaborations:**

Institute for the Advanced Chemistry, CSIC, Barcelona, Spain; Albert-Ludwigs-University of Freiburg, Institute of Pharmaceutical Sciences, Freiburg, Germany; Research Institute on Bioengineering, Membrane Technology and Energetics, Faculty of Engineering, Pannon University, Veszprem, Hungary; Ruđer Bošković Institute, Zagreb, Croatia

Facilities:

- Laboratory equipment for kinetic measurements of enzymatic reactions
- Laboratory equipment for protein isolation and purification