

Project 2.3 Chemoenzymatic cascades of new Cu and Pd reactions of significant application potential

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Unit: research group XX

www: <https://www.icho.edu.pl/en/zespol/ryszard-ostaszewski-group/>

Background:

Reports preparation, publications preparation, synthesis of organic compounds using copper catalyzed organic reactions and enzymatic reactions

Aim:

Currently, an increase in the incidence of cancer is observed, thus it is extremely important to eliminate or limit them. One of types of cancer is multidrug resistant (MDR) solid tumors. In order to find a new drug against MDR, we need to design new synthetic protocols providing organic compounds of defined structure, free from any impurities. Therefore, during the realization of project we will study a new type of organic reactions catalyzed by palladium salts, which provide molecules of high activity towards MDR.. To achieve success, we need to know reaction scope and limitations, reaction mechanisms and optimal conditions for successful synthesis. Since the obtained products will be applied for biological and medical studies by specialists, they should be free from impurities including residual metal catalyst. Therefore, in the project special attention will be paid on reaction conditions and catalyst immobilization/inclusion to design experimental procedure providing metal free products.

Requirements:

- An excellent academic background,
- MSc degree in organic chemistry, biotechnology (or close date of MSc thesis defence),
- good knowledge of organic synthesis or biocatalysis,
- good knowledge of databases (Reaxys, SciFinder),
- good knowledge of analytical techniques utilized in organic chemistry (NMR, MS, IR),
- fluency in English.