ENANTIOSELECTIVE ORGANOCATALYSIS IN THE SYNTHESIS OF BIOLOGICALLY RELEVANT COMPOUNDS

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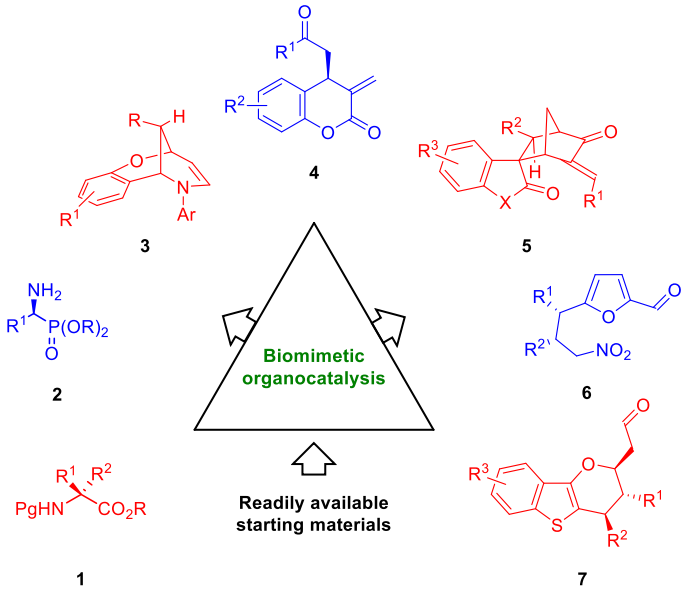
The development of methods for the preparation of biologically relevant compounds in an enantiomerically enriched form constitutes one of the most significant tasks in the contemporary organic chemistry. In particular, enantioselective reactions where prochiral substrates are converted into enantiomerically enriched products in the presence of chiral catalyst are of great importance [1]. Recently, asymmetric organocatalysis, where simple organic molecules are used as catalysts of various enantiodifferentiating reactions, has become a highly useful synthetic tool enabling for the efficient asymmetric induction based on diverse activation modes [2].

Herein, we report our studies on organocatalytic, enantioselective strategies for the synthesis of biologically relevant molecules such as: quaternary α-amino acids **1** and their isoelectronic analogs α-aminophosphonates **2**, benzo[1,5]oxazocines **3**, α-methylidene-δ-lactones **4**, α-alkylidene-ketones **5**, furfural derivatives **6**, and benzothiophenes **7** [3]. The devised approaches utilize readily available chiral organocatalysts to control stereochemical reaction outcomes. Operational simplicity, efficiency and high enantio- and diastereoselectivities are the main benefits of the developed strategies.



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