Special Issue

Use of Hydrolases in Organic Synthesis

Message from the Guest Editors

Among the six classes in which purified enzymes are divided, based on the reaction they catalyze, one is the most widely used by organic chemists: the class of hydrolases. As suggested by its name, this class collect enzymes that in nature are able to catalyze the reaction of cleavage of a very broad range of functional groups (i.e., esters, glycosides, anhydrides, amides, peptides, etc.) via the action of water. In addition to the advantages in common with the enzymes of the other classes, hydrolases have further attractive properties for the synthetic chemist: They do not need cofactors for their catalytic action, accept a broad range of substrates and, for many of them, are commercially available and stable in organic solvents. In conclusion, we can say that, when applicable, catalysis by means of hydrolases may offer attractive alternatives to classical synthetic methods due to its regio-, chemo- and stereoselectivity, low cost, ease of use, and environmentally compatible reaction conditions.

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