Lipases: Sources, Characteristics and application in Food industry

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Lipases are used in various sectors, as pharmaceutical, food or detergency industry. Their advantage versus classical chemical catalysts is that they exhibit a better selectivity and operate in milder reaction conditions. Theses enzymes can also be used in lipophilization reactions corresponding to the grafting of a lipophilic moiety to a hydrophilic one such as sugar, amino acids and proteins, or phenolic compounds. Lipases are the most widely used class of enzymes in organic synthesis. Availability of large number of commercial preparations, their broad specificity and relatively better stability (as compared to other enzymes) in media containing organic solvents have all been contributing factors for this. This review has a sharp focus on their specificity. The recent results with catalytic promiscuity have shown that lipases are even more versatile than thought so far. These results have also prompted workers to rationalize the classification of specificity in terms of substrate promiscuity, condition promiscuity and catalytic promiscuity. The review also attempts to recast the known information on specificity of lipases in the context of enzyme promiscuity.

Keywords Lipases; Lipophilization; Application of lipases; Biotechnology