

## **Novel Microbial Lipases: Versatile Tools for Biotechnology**

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Lipases constitute the most important group of biocatalysts for biotechnological applications. These enzymes are used in various industries such as dairy, food, detergents, textile, pharmaceutical, cosmetic and biodiesel production, and in synthesis of fine chemicals, agrochemicals, and new polymeric materials. Based on their diverse catalytic properties and substrate specificities lipases more and more replace costly and inefficient chemical processes and introduce easily accessible enzymatic reactions. Furthermore, lipases allow entry into green chemistry reducing the ecological footprint of the process by requiring less organic solvents and energy and by applying cheap, biodegradable and non-toxic catalysts.

EUCODIS Bioscience has developed a collection of 25 carefully selected lipases of microbial origin that are well characterised in terms of temperature optimum, fatty acid chain length specificity, enantioselectivity, epoxidation, and modification of high-value oils by hydrolysis and transesterification. All enzymes are either expressed internally in *Escherichia coli* or in secreted form by *Pichia pastoris* or *Bacillus subtilis* (all animal-free). These 25 enzymes can be applied either in immobilized or freeze-dried form and used over a wide temperature range in different aqueous reaction media as well as organic solvents.

Based on this unique lipase collection we present the current data set of the customized enzymes catalyzing a large area of enzymatic reactions with increased activities and completely novel substrate specificities compared to the commonly used lipase Cal B.