

Protein Engineering of Lipase CAL-A to Alter its Selectivities

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Protein engineering has developed in the past decade to an important technology to alter the properties of enzymes [1,2]. Whereas initially rational protein design was the method of choice, directed evolution (in essence a random mutagenesis followed by screening or selection of desired mutants) became an important alternative. More recently, researchers use combinations of both methods. We applied protein engineering to alter the selectivities of lipase A from *Candida antarctica* (CAL-A). This resulted in variants with distinct selectivity for *trans*- and saturated fatty acids, which is a very useful feature to remove *trans* fatty acids from partially hydrogenated plant oil [3]. Furthermore, we created mutants of CAL-A, which now can only hydrolyze short to medium chain fatty acids making these variants interesting for the selective enrichment of these fatty acids and for the synthesis of specific triacylglycerides [4].

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