

Enzymes and Biocatalysis

Enzymes are proteins with biological catalytic function, compared to traditional

- Higher catalytic efficiency
- Mild reaction condition
- Strong selectivity
- No side effects

Therefore, biocatalysis has become an increasingly important tool in the field of food, medicine, synthesis, etc.

Lipases

Lipases are one of the most commonly used classes of enzymes in biocatalysis. Lipases can be used in the water phase or organic phase catalytic hydrolysis, alcoholysis, esterification ester exchange reaction, which are widely used in oil processing, food, medicine, daily chemical and other industries.

Advantages of Immobilized Lipases

Lipases are fixed to an elaborately designed solid phase carrier, so that it would gain superior performance than the original enzyme:

- Better performance in the non-aqueous phases
- All-round stability improvement. Catalytic reactions can be carried out under relatively harsh conditions
- Will not deteriorate or decline rapidly in application effect caused by storage problems or the multiple use
- Easy to separate from reaction system, and to avoid protein pollution
- Recycling and reuse of catalyst and thereby decreases the cost of enzyme
- The protection of solid carrier makes the operation more secure

Chiralzyme IM-100 is a latest immobilized, non-specific lipase developed by LEVEKING. 100 has high degree of substrate specificity with respect to regio- and enantioselectivity. 100 can be used in the resolution of racemic alcohols, amines, and acids, in the preparation of optically active compounds from meso substrates, and in selective acylation of different carbohydrates.

Advantages of 100

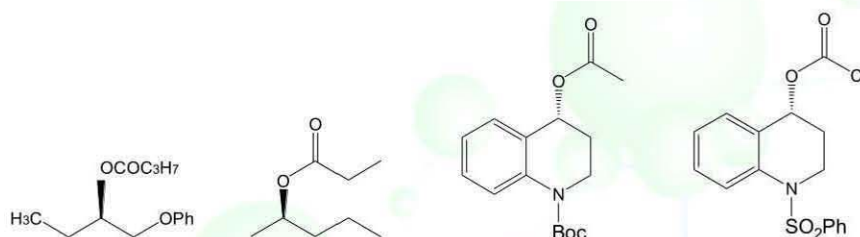
- Mild reaction conditions
- Selectively function on multifunctional substrates
- Active both for bulk liquid substances and in presence of organic co-solvents
- Suitable for both continuous fixed bed reactor and batch mixing tank
- Can be recycled many times without big activity loss
- Suitable for large-scale industrial production
- No residual in final product nor protein pollution
- Can be used together with metal catalyst

Product Name	Form	Activity*	pH Optimum	Temp Optimum
Chiralzyme IM-100	Immobilized	10,000 PLU/g	pH 5-9	30 – 80 °C

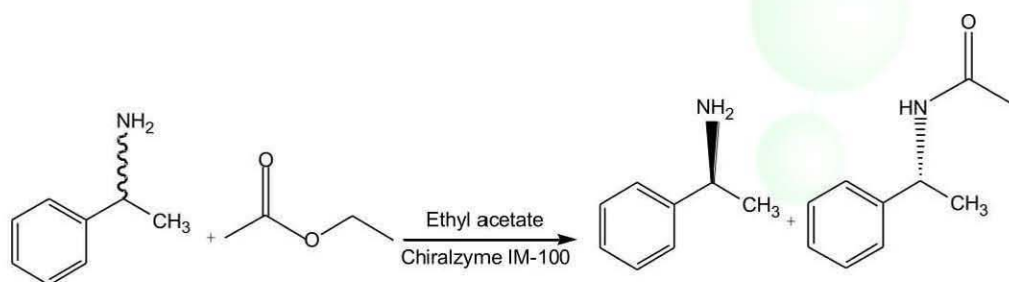
1、 Resolution of racemic alcohols



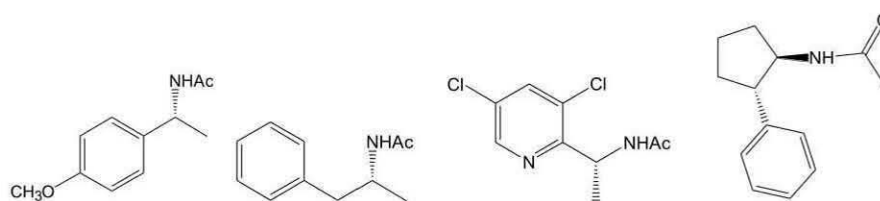
Recycle 15 times without significant activity loss , > 49% conversion rate , >99% ee



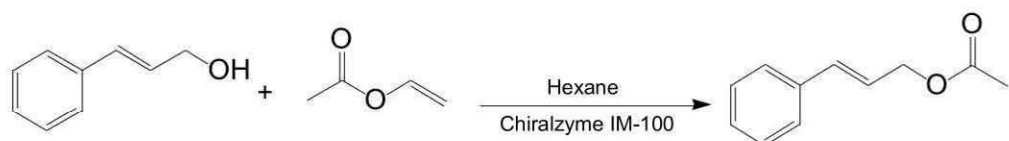
2、 Resolution of racemic amines



Recycle 15 times without significant activity loss , > 49% conversion rate , >99% ee



3、 Synthesis of ester flavoring



Recycle 15 times without significant activity loss , > 99% conversion rate , >99% ee