AL1 CLEA

- ***Alcaligenes species* lipase 1**
- **Immobilized as Cross-Linked Enzyme Aggregate**

***Alcaligenes sp.* lipase 1 (AL1) is a lipase widely available by over expression in a production organism. Lipases catalyze the hydrolysis of triglycerides. The proprietary CLEA methodology has been applied to immobilize this enzyme.**

CLEA Methodology
Our proprietary methodology to immobilize enzymes as Cross-Linked Enzyme Aggregates (CLEAs) consists of covalent cross linking of precipitated enzymes. This efficient and economically attractive method yields immobilized biocatalysts that do not include support material and therefore have a very high activity per unit volume.

Product Properties

Product Type:	Immobilized form of lipase from *Alcaligenes sp.* as a Cross-Linked Enzyme Aggregate (CLEA)
Formulation:	Suspension buffer
Enzyme Type:	Lipase, Triacylglycerol hydrolase, EC 3.1.1.3
Natural Reaction:	Hydrolysis of fats and oils
Substrate Specificity:	Preferentially hydrolysis 1,3 position
Typical activity:	CLEA-ST: 1000 Units/ml*: CLEA-OM: 1000 units/ml*

* 1 unit will catalyse the formation of 1µmol butyric acid from tributyrin at 40°C and pH 7.5

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Specific Product Specification
AL1 CLEA

Applications

Lipases in general are used in a wide variety of applications in the fine chemistry, laundry and food industry. In organic synthesis they are used in the production of enantiopure alcohols, amines or acids via ester hydrolysis in aqeous media or via direct esterification in organic media.

Storage and Stability

The AL1 CLEA® is best stored in a cool and dry environment. Storage at 4 °C is recommended. Under these conditions the AL1 CLEA® retains its activity for at least 12 months. It is recommended to keep the CLEA in suspension upon storage.

Formulations

AL1 CLEA is available in two formulations. The standard CLEA and a formulation that is optimized for use in organic media.

CLEA-ST:
Standard formulation of the CLEA

CLEA-OM:
Formulation optimized for use in organic media

Pricing and Availability

AL1 CLEA is available in two formulations that are described elsewhere. The available quantities range from 10 kU to giga unit scale. Please inquire for availability, lead times and prices.

References

1. Sheldon, Roger A; Sorgedrager, Menno; Janssen, Michiel H. A. **Use of Cross-linked Enzyme aggregates (CLEAs) for performing biotransformations**. Chimica oggi, Chemistry Today 2007, 25(1), 48-52.
2. Sheldon, R. A; Schoevaart, R; Van Langen, L.M. **Cross-linked enzyme aggregates (CLEAs): A novel and versatile method for enzyme immobilization (a review).** Biocatalysis and Biotransformation 2005, 23(3/4), 141-147.
3. Sheldon, Roger A; Schoevaart, R; van Langen, Luuk M. **CLEAs: An effective technique for enzyme immobilization.** Specialty Chem. 2003, July/August, 40-42.
4. Cao, Linqiu; van Langen, Luuk; Sheldon, Roger A. **Immobilised enzymes: carrier-bound or carrier-free?** Curr. Opin. Biotechnol. 2003, 14, 387-394.