

Candida antarctica Lipase-B Catalyzed Alkaline-Hydrolysis of Some Aryl-Alkyl Acetate in Non-Aqueous Media

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Abstract : Lipases (EC.3.1.1.3) are efficient biotools widely used for their remarkable chemo-, regio- and enantio-selectivity, especially, in kinetic resolution of racemates. They offer access to a large panel of enantiopure building blocks, such as secondary benzylic alcohols, commonly used as synthetic intermediates in pharmaceutical and agrochemical industries. Due to the stability of lipases in both water and organic solvents poor in water, they are able to catalyze both transesterifications of arylalkylcarbinols and hydrolysis of their corresponding acetates. The use of enzymatic hydrolysis in aqueous media still limited. In this presentation, we expose a practical methodology for the preparation of optically enriched acetates using a *Candida antarctica* lipase B-catalyzed hydrolysis in non-aqueous media in the presence of alkaline carbonate salts. The influence of several parameters which can intervene on the enzymatic efficiency such as the impact of the introduction of the carbonates salts, its amount and the nature of the alkaline earth metal are discussed. The obtained results show that the use of sodium carbonate with CAL-B enhances drastically both reactivity and selectivity of this immobilized lipase. In all cases, the resulting alcohols and remaining acetates are obtained in high ee values (up to > 99 %), and the selectivities reach ($E > 500$).

Keywords : alkaline-hydrolysis, enzymatic kinetic resolution, lipases, arylalkylcarbinol, non-aqueous media

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