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## Lipase from *Burkholderia cepacia* (BCL) immobilized in Chitosan/EDTA applied to the resolution of rac-1-phenylethanol

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### ABSTRACT

This work evaluated the immobilization between several lipases and chitosan functionalized with EDTA (CHT/EDTA) [1]. Enzymatic activity and stability of different lipases before and after immobilization were analyzed in different conditions (pH and temperature). The results showed better stability for immobilized *Burkholderia cepacia* (BC-CHT/EDTA), for example against the temperature range, which it kept 75% of its activity, while the free form only kept 21%. The biocatalysts BC-CHT/EDTA synthesized was applied to the resolution of 1-phenylethanol (1) with vinyl acetate (2) in different weights of biocatalyst and reaction temperature [2]. The datas were compared with the free lipase applied in the same conditions (table below).

Entry	Lipase	Weight (mg)	Temperature(°C)	$ee_A$ (%)	$ee_E$ (%)	C (%)
1	BCL	5,6	r.t	20	99,9	16,7
2	BCL	5,6	60	11	99,9	10
3	BC-CHI/EDTA	50*	r.t	15,3	99,9	13,3
4	BC-CHIT/EDTA	50*	60	32	99,9	24,2
5	BCL	11,4	r.t	48	99,9	33
6	BCL	11,4	60	44	99,9	30
7	BC-CHIT/EDTA	100*	r.t	46	99,7	31,6
8	BC-CHIT/EDTA	100*	60	82	99,9	45

\* 50 and 100 mg of BC-CHIT/EDTA corresponds to 5,6 and 11,4 mg of BCL, respectively.

Using 100 mg of BC-CHIT/EDTA at 60°C was achieved 100% of enantiomeric excesses of ester ( $ee_E$ ), 82% of enantiomeric excesses of alcohol ( $ee_A$ ), and a 45% of conversion rate. These results demonstrate the potential of BC-CHIT/EDTA for the resolution of racemic compounds.

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