

## Effect of carriers on the stability of lipases from *Cercospora kikuchii* during spray drying and storage

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Lipases (E.C. 3.1.1.3) occupy a prominent place among biocatalysts and have a wide spectrum of biotechnological applications. Industrial enzymes are often subject to spray drying because handling is easier and enzyme storage stability is better in a solid product than in a liquid product. In our previous studies lipases produced by the endophytic fungus *Cercospora kikuchii* was dried in presence of various carriers as lactose, maltodextrin 1920, maltodextrin 1910, mannitol, gum Arabic, trehalose,  $\beta$ -ciclodextrin. Among all preparations tested, those containing 10% of lactose with 0,1% of tween 80 showed the best result maintaining 100% of residual activity after drying, followed by  $\beta$ -ciclodextrina (92,43%), maltodextrin 1910 ( 92 %), maltodextrin 1920 (90%), mannitol (87,78%), gum arabic ( 87,15%) and trehalose (63,28 %). The drying of these enzymes without carriers showed no enzymatic activity. In this study, the stabilities of lipases produced by *Cercospora kikuchii* and dried with the same carriers above were determined during storage at various temperatures. After six months at 5°C the preparations using lactose as carrier kept 70,4% of initial activity followed by gum arabic (68,5%),  $\beta$ -ciclodextrin (65,6%), maltodextrin 1910 (65,5%), maltodextrin 1920 (64,7%), trehalose (62,2%) and mannitol (57,3%). These results show that lactose was the best carrier to protect the lipases produced by *C. kikuchii* during spray dryer process and after six months of storage at 5°C.