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NEW MONOLITH CONFIGURATION FOR THE IMMOBILIZATION OF LIPASE FROM *Candida antarctica*

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Abstract

Several new siliceous monoliths have been investigated for the immobilization of lipase from *Candida antarctica*. These monoliths present different hydrophobicity due to the different percentage of two kinds of commercial silica used in their formulation, which varies from 100% Aerosil 300 (the most hydrophobic) to 100% Sipernat320 (the most hydrophilic). Depending on the percentage of the hydrophobic compound, the quantity and the activity of the immobilized enzyme differs considerably.
The behavior and the stability in time of the enzyme in the heterogeneous biocatalyst has been also analyzed. The results show that the enzyme is strongly bonded to the inorganic support and, thus, protected from the degradation usually experimented by enzymatic solutions of lipase during a 7 days period. Moreover, the use of the same biocatalyst for 3 to 9 cycles of 10 minutes each for the hydrolyses of p-nitrophenyl dodecanoate to p-nitrophenol shows that the activity maintaines at acceptable values.

Key words: Candida antarctica, enzyme immobilization, lipase, nitrophenyl dodecanoate hydrolyses, silica monoliths

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