

Microemulsion- based gels for lipase-catalysed ester synthesis in organic solvents

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Abstract. Microemulsions are clear, stable, isotropic mixtures of oil, water and surfactant, frequently in combination with a cosurfactant. These systems are currently of interest to the pharmaceutical scientist because of their considerable potential to act as drug delivery vehicles by incorporating a wide range of drug molecules. The purpose of this work was to solubilise in AOT [sodium bis(2-ethylhexyl)sulphosuccinate] water-in-oil microemulsions at two different R-values the *Chromobacterium viscosum* (CV) lipase and lipoprotein lipase ex *Pseudomonas* and to use them to catalyse the lactonisation of 16-hydroxyhexadecanoic acid at 40°C. CV lipase has also been immobilised in gelatin-containing microemulsionbased gels (MBGs) with retention of catalytic activity. These lipase-containing MBGs prove to be novel solid-phase catalysts for use in apolar organic solvents. CV lipase-containing MBGs have been used to synthesize, on a preparative scale, a variety of different esters under mild conditions.