

Lipase-catalyzed reaction in deep eutectic solvents

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In recent, deep eutectic solvents (DES), eutectic mixtures of an ammonium salt and a hydrogen bond donor such as choline chloride and urea, have gained great interest as reaction media for the lipase-catalyzed reactions, because of their non-volatility, biocompatibility, non-toxicity, and cheap price. In this work, lipase-catalyzed transesterification of benzyl alcohol and vinyl acetate was carried out in various DES. The activity and stability of *Candida antarctica* lipase B in various DES were higher than those in ionic liquids and organic solvents which have similar polarity with DES. The influence of DES properties on the activity of lipase was investigated by correlating the solvatochromic parameters of DES with the lipase activity. In addition, DES mixtures, comprising choline chloride and two hydrogen bond donors, were also used to increase the activity and stability of lipase. DES as reaction media have great potential in the lipase-catalyzed reactions.