

BIOTECHNOLOGY & BIOENGINEERING

离子液介质中生物催化与生物转化的研究进展

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摘要 Ionic liquids have negligibly low vapor pressure, high stability and polarity. They are regarded as green solvents. Enzymes, especially lipases, as well as whole-cell of microbe, are catalytically active in ionic liquids or aqueous-ionic liquid biphasic systems. Up to date, there have been many reports on enzyme-exhibited features and enzyme-mediated reactions in ionic liquids. In many cases, remarkable results with respect to yield, catalytic activity, stability and (enantio-, regio-) selectivity were obtained in ionic liquids in comparison with those observed in conventional media. Accordingly, ionic liquids provide new possibilities for the application of new type of solvent in biocatalytic reactions.

关键词 生物催化作用, 生物转化机制, 离子性液体, 极性溶剂, 有机溶液

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Recent Progress on Biocatalysis and Biotransformations in Ionic Liquids

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Abstract Ionic liquids have negligibly low vapor pressure, high stability and polarity. They are regarded as green solvents. Enzymes, especially lipases, as well as whole-cell of microbe, are catalytically active in ionic liquids or aqueous-ionic liquid biphasic systems. Up to date, there have been many reports on enzyme-exhibited features and enzyme-mediated reactions in ionic liquids. In many cases, remarkable results with respect to yield, catalytic activity, stability and (enantio-, regio-) selectivity were obtained in ionic liquids in comparison with those observed in conventional media. Accordingly, ionic liquids provide new possibilities for the application of new type of solvent in biocatalytic reactions.

Key words ionic liquids, biocatalysis and biotransformations, enzymatic catalysis.

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