CHALLENGES IN ANALYSIS FOR BIOCATALYSIS IN NON CONVENTIONAL MEDIA

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Biocatalysis in nonconventional media offers higher solubility of many industrially important molecules and therefore has garnered a lot of interest[1]. The higher solubility of the substrates and/or products enables high productivity and also eases the downstream processing, thereby helping the process achieve the tight industrial economic targets[2]. Lipases, peroxygenases and oxidoreductases have been used with non conventional media successfully[3]. The selection of solvents is based on the solubility of the substrates/products and the activity/stablity of the enzymes. In many cases, the difference between the solubility of the substrate and the product necessitates the use of biphasic aqueous-solvent systems which complicates the analysis of the reaction system. This makes establishing mass balances or monitoring reaction progress quite difficult. These challenges present themselvesitself during sampling (representation/location), evaporative losses during the reaction, losses during extraction etc. Addressing these challenges is of utmost importance to enable best use of these solvent systems in biocatalysis.

References

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