BIOCATALYSIS

Summary

The use of enzymes, either derived from natural sources or generated through directed evolution methods, has increased significantly over the past decades. Replacing the aqueous milieu with organic solvents, ionic liquids, supercritical fluids, fluoro-hydrocarbons etc. enables biocatalysis to increase the chemo-, regio- and enantio-specificity and catalytic efficiency of many enzymes. Combinatorial biocatalysis uses enzymes and whole microbial cells to generate libraries of derivatives of many compounds. Enzyme catalytic promiscuity, i.e. capability of catalyzing new reactions of new substrates, has been recognized as a valuable research and synthesis tool. The systematic organization of information pertaining to enzymes' function and structure is of great importance for further development of biocatalysis.