



BIOCATALYSTS IN ORGANIC SYNTHESIS: A GREEN PROTOCOL

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The research of new environment friendly reactions represents an important field in green chemistry. In this context, enzyme catalyzed reactions are of considerable current interest. Enzymes have gained pivotal importance in the production of fine chemicals, pharmaceutical fuels and numerous other manufactured goods¹. These reactions represent new and low cost processes, which allow the use of non-toxic starting materials². Lipases are the most widely used enzymes because they are cheap, easily available, cofactor free and have broader substrate specificity. The extensive research efforts have been dedicated to evaluate the new environmentally friendly redox reaction, which represents an important pre-existing field in industrial chemistry. In this context, enzyme catalyzed oxidation reactions are of considerable current interest. The biocatalyst laccase belongs to a group of enzymes called blue copper oxidases, catalyzes the oxidation of a broad range substrates and frequently exhibit high selectivity in aqua mediated conditions which provide unique green chemistry solution for a variety of redox reactions. The major advantage attributed here to the use of laccase catalyst, is redox activity with the elimination of water as the sole by-product, which makes it ecofriendly³.

1. Mazaahir Kidwai and Roona Poddar, *Catalysis Letters* 2008 (in press).
2. Mazaahir Kidwai, Roona Poddar and Poonam Mothsra, *J. Molecular Catalyst B : Enzymatic* (Communicated).
3. Mazaahir Kidwai, Roona Poddar and Ramesh Chand Kuhad *Chemical Communication* (Communicated).