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Synthesis of different sulfoxide from its corresponding sulfide by plant enzyme

Chiral organic sulfoxides are important synthons and chiral auxiliaries in synthetic organic chemistry. Therefore synthesis of chiral sulfoxide is an active area of continuing research interest. The most common method for the preparation of sulfoxide is by the oxidation of their corresponding sulfides. Both the chemical and biological catalysts have been developed for this purpose. Though the reaction conditions for the preparation of chiral organic sulfoxides. With hope that some of them will produce the desired sulfoxidation in a good enantiomeric excess. Being involving biological catalysts are milder and ecofriendly in comparison to those involving chemical catalysts, they are of

limited practical use. This communication reports a crude preparation of chloroperoxidase from plant which can be conveniently prepared and used for the transformation of different sulfide to its sulfoxide. This is the report of sulfoxide formation using a plant enzyme. The method for the preparation of enzyme from plant has been developed. The enzymatic characteristics like K_m for the substrates sulfide and H_2O_2 , pH and temperature optima of the enzyme have been determined. The enzymatic transformation of different sulfide to its sulfoxide has been demonstrated. The results of the above studies will be presented in the conference.

Biography

Pratibha Yadav is working as a PDF in IIT Delhi, New Delhi, India. She has joined IIT Delhi in May 2014. She has been synthesized sulfoxides and epoxides by plant enzyme. She is working on structural and functional studies of plant enzymes in IIT Delhi, India. Use of enzymes in organic synthesis as reagents are preferred because enzyme catalyzed reactions are efficient, specific, occur under milder conditions, ecofriendly and optically pure isomers are obtained which are pharmaceutically important. She has worked as an Assistant Professor in Gurgaon College of Engineering from 2011 to April 2014. She has been joined research for PhD on the topic "Partial Purification & Biotechnological Applications of Some Peroxidases" in the Department of Chemistry DDU Gorakhpur University, Gorakhpur, India, in 2006. During this period, she has isolated, purified and characterized four Peroxidases and one other enzyme Laccase from the plant source.

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