NON-CONVENTIONAL MEDIA FOR ENZYMATIC DECARBOXYLATIONS: TRANSITIONING FROM LAB TO INDUSTRIAL SCALES

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The application of nature's catalysts, "enzymes," for the synthesis of chemicals is a crucial emerging field of industrial biotechnology to meet the current and future needs of our society for sustainable manufacturing of chemicals. Nature uses an elegant and efficient synthetic strategy: Coupling enzymes in multi-step pathways without intermediate isolation and purification steps with precise spatial control of catalysis. Inspired by nature, the design of multi-step biotransformations has been attracting significant attention within the biocatalysis community. The talk will introduce enzymatic decarboxylation reactions (in cascading systems), exploring the use of non-conventional media[1,2], enzyme immobilization, and different operational modes[3] for enhancing the volumetric productivity of these biocatalytic applications. [4,5]

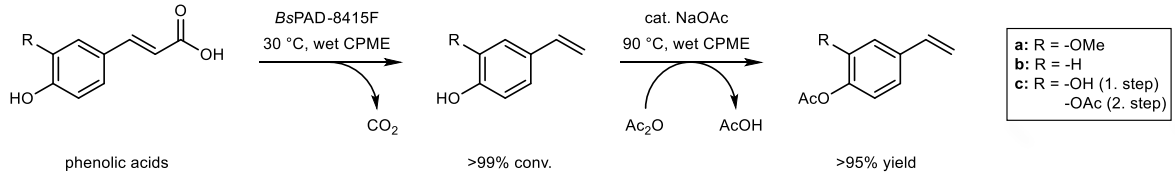

Figure 1: Chemoenzymatic synthesis of acetylated hydroxystyrenes from phenolic acids.

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