**Optimization and characterization of lipase catalysed synthesis of xylose caproate ester in organic solvents**

ABSTRACT

The lipase catalysed synthesis of xylose caproate ester was performed by condensation of xylose, an aldopentose and caproic acid in organic solvents. A dual-solvent system containing DMSO and acetone (1:10 v/v) was used to determine the optimal conditions for the reaction. Different reaction parameters (solvent system, reaction time, substrate molar ratio and the amount of enzyme loaded) were studied. The highest conversion rate (64%) was obtained within 24 h with the optimal conditions of 16% (w/v) Novozym 435 and a molar ratio of xylose to caproic acid of 1:4.

**Keyword:** Xylose; Caproic acid; Novozym 435; Xylose caproate; Sugar ester