Immobilization of Lipase From Azospirillum sp. PRD1 Using Chitosan Alginate as Supporting Agent

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Abstract	Immobilization of lipase from Azospirillum sp. PRD1 bacteria with trapping method using chitosan alginate has been successfully performed in this study. The study was started by manufacture of the inoculum, followed by the production of enzymes and extraction with centrifugation method. The crude extract obtained was fractionated using ammonium sulphate and the 60% fraction was used for the immobilization of enzymes and determination of its molecular weight. The preparation of chitosan alginate beads were performed using several variations that are chitosan concentration, enzyme volume: chitosan alginate ratio, incubation time and the concentration of TPP. The activity of lipase beads formed was tested using titrimetric methods. The results showed that the fraction of 60% was more pure than the crude extract. The chitosan used has de-acetylation degree of 74.57%. The synthesis of the immobilized lipase beads was optimum at 8.5% chitosan concentration, ratio of enzyme: chitosan alginate of 1: 10, 150 min incubation time and 2% TPP concentration with activity of 90 U/mL.
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