

Bacillus thuringiensis HCB6 Amylase Immobilization by Chitosan Beads

Publons ID	17899352
Wos ID	WOS:000399169500068
Doi	10.1088/1757-899X/172/1/012068
Title	<i>Bacillus thuringiensis</i> HCB6 Amylase Immobilization by Chitosan Beads
First Author	Zusfahair; Ningsih, D. R.; Kartika, D.;
Last Author	Zuliana, A. L.
Authors	Zusfahair; Ningsih, DR; Kartika, D; Fatoni, A; Zuliana, AL;
Publish Date	2017
Journal Name	MATERIAL CHEMISTRY DEVELOPMENT FOR FUTURE MEDICINE, INDUSTRY, ENVIRONMENTAL AND BIOMATERIAL APPLICATION
Citation	4
Abstract	The purpose of this study was to optimize the amylase immobilization using a chitosan bead and to characterize immobilized amylase of <i>Bacillus thuringiensis</i> Bacteria HCB6. This study was started of amylase production, continued by immobilization optimization including ratio of chitosan:enzymes, enzyme-matrix contact time, substrate concentration, pH effect, incubation temperature effect, reaction time, and stability of immobilized enzyme. Amylase activity assay was dinitro salicylic (DNS) method. The results showed the optimum chitosan:enzyme ratio was 2.5: 1 (v/v), immobilization contact time of 18 hours and immobilization efficiency of 87.93%. Furthermore, immobilized amylase of <i>B. thuringiensis</i> HCB6 showed optimum substrate concentration of 1.5%, optimum pH of 6, optimum incubation temperature of 37 degrees C, and the reaction time of 30 minutes. The Michaelis-Menten constant K_M value for free and immobilized amylase were 5.30% and 1.33% respectively. Immobilized amylase can be used up to five times with the remaining activity of 43.3%.
Publish Type	Book in series
Publish Year	2017
Page Begin	(not set)
Page End	(not set)
Issn	1757-8981
Eissn	
Url	https://www.webofscience.com/wos/woscc/full-record/WOS:000399169500068
Author	DWI KARTIKA, S.Si, M.Sc.