

## Kinetics Study for the Recombinant Cellulosome to the Degradation of Chlorella Cell Residuals

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**Abstract :** In this study, lipid-deprived residuals of microalgae were hydrolyzed for the production of reducing sugars by using the recombinant *Bacillus cellulosome*, carrying eight genes from the *Clostridium thermocellum* ATCC27405. The obtained cellulosome was found to exist mostly in the broth supernatant with a cellulosome activity of 2.4 U/mL. Furthermore, the Michaelis-Menten constant ( $K_m$ ) and  $V_{max}$  of cellulosome were found to be 14.832 g/L and 3.522 U/mL. The activation energy of the cellulosome to hydrolyze microalgae LDRs was calculated as 32.804 kJ/mol.

**Keywords :** lipid-deprived residuals of microalgae, cellulosome, cellulose, reducing sugars, kinetics

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