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Synthesis and characterization of cross-linked cellulase enzyme aggregates (CLEAs) by ethanol and acetone desolvation technique

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Cellulase is one of most useful enzymes in industry. In the present work, cross linked cellulase enzyme aggregates (CLEA) was synthesized. The influence of several factors on the CLEA synthesis including the pH value, time, Ca^{2+} concentration and incubation time was investigated by response surface methodology (RSM). CLEA-1 and CLEA-II was synthesized with ethanol and acetone desolvation technique respectively. The residual enzyme activity of CLEA was 21.61% and 78.38% with ethanol and acetone respectively. CLEA has better pH and temperature stability than free enzyme. CLEA particles have lower K_m value. For characterizing the CLEA, Zeta sizer and FT-IR was employed. Average diameter of CLEA-I and II was 2575 and 4876 nm respectively, whereas average diameter of free enzyme was 770.4 nm.

Biography

Jagdish Singh has completed his PhD from Punjabi University Patiala. He is currently working as Associate Professor in the Department of Biotechnology, Mata Gujri College, Punjab, India. He has published 16 papers in reputed journals and has been serving as Head of the Department. He has supervised more than 50 research projects of MSc students.

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