

Medium Design and Optimization for High B-Galactosidase Producing Microbial Strains from Dairy Waste through Fermentation

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Abstract : This paper investigates the production and optimization of β -galactosidase enzyme using synthetic medium by isolated wild strains (S1, S2) mutated strains (M1, M2) through SSF and SmF. Among the different cell disintegration methods used, the highest specific activity was obtained when the cells were permeabilized using isoamyl alcohol. Wet lab experiments were performed to investigate the effects of carbon and nitrogen substrates present in Vogel's medium on β -galactosidase enzyme activity using S1, S2, and M1, M2 strains through SSF. SmF experiments were performed for effects of carbon and nitrogen sources in YLK2Mg medium on β -galactosidase enzyme activity using S1, S2 and M1, M2 strains. Effect of pH on β -galactosidase enzyme production was also done using S1, S2, and M1, M2 strains. Results were found to be very appreciable in all the cases.

Keywords : β -galactosidase, cell disintegration, permeabilized, SSF, SmF

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