

Permeabilized cells and biochemical characterization of a novel recombinant trehalose synthase from *Picrophilus torridus*

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ABSTRACT

Trehalose synthase(Tsase) is easy and simple for the pathway in all trehalose synthesis way, used maltose to as substrate for change the bond of two glucose , 1-4 , 1-1 bond, get the one trehalose molecular. Make use of PCR technology for numerous performance of the recombinant enzyme from E.coli. The permeabilization of microbial cells accompany with trehalose synthase activity were used to simplify trehalose production steps, increase its reusability and reduce the production cost for further industrial applications. The PTTS-D41P(*Picrophilus torridus* trehalose synthase -D41P) was a PTTS mutant in the study. Make use of point mutation technology according to the literature. Change the amino acid sequence of the aspartic acid to proline in the 41 site for improve of thermostability. Reduce production of cost and increase the production efficient, increase its for industrial production and business peddle.

Keywords : trehalose、trehalose synthase、permeabilization cells、*Picrophilus torridus*

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