

COMPARISON OF THERMAL CHARACTERISTICS OF PURIFIED
 β -GLUCOSIDASES FROM A MESOPHILIC *Aureobasidium pullulans* AND A
THERMOPHILIC *Thermoascus aurantiacus*

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The thermophilic fungus *Thermoascus aurantiacus* 179-5 and the mesophilic *Aureobasidium pullulans* ER-16 were cultivated in corn cob by solid state fermentation for β -glucosidase production. After 120 hours of fermentation both enzymes were purified and their thermal characteristics were studied. The β -glucosidases produced by the strains *A. pullulans* and *T. aurantiacus* were most active at temperatures of 80 and 75 °C, respectively. The enzyme produced by the mesophilic *A. pullulans* was more thermostable, 90% after 1 h at 75 °C against 90 % after 1 h at 70 °C, of the enzyme from the thermophilic *T. aurantiacus*. The $t_{(1/2)}$ at 80 °C were 90 and 30 min for *A. pullulans* and *T. aurantiacus* respectively. β -glucosidase thermoinactivation followed first-order kinetics and the energies of denaturation were 414 and 537 KJ mol⁻¹ for *T. aurantiacus* and *A. pullulans*, respectively. Thermodynamic parameters obtained in the present study, such as, ΔH , ΔS and ΔG confirm the largest thermostability of β -glucosidase from the mesophilic microorganism.

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