

Characterisation Of an Antarctic Yeast, *Glaciozyma Antarctica* PI12

ABSTRACT

Glaciozyma antarctica PI12 is a psychrophilic yeast isolated from Antarctica. It has an optimal growth in yeast peptone dextrose (YPD) and yeast mould (YM) broth media but not in potato dextrose (PD) broth medium. Early phase *G. antarctica* PI12 cells had elongated-shape and became oval-shaped as they aged. *G. antarctica* PI12 exhibited bipolar budding and formed a chain of cells during the lag and early exponential phases. The number of chains decreased as the yeast aged. It appeared mainly as a single cell at the stationary phase, and a small number of them still produced buds. Some cells at the stationary phase entered the quiescence state (G0) as a long-term survival strategy. The *G. antarctica* PI12 cell size decreased when they entered the stationary phase. *G. antarctica* PI12 was found to produce hydrolytic enzymes, chitinase, cellulase, mannanase, and xylanase. A higher glucose concentration of 2% in the PD agar medium inhibited the activities of chitinase but not the cellulase, mananase and xylanase.