

ABSTRACT

Present study is concerned with the optimization and kinetic evaluation of cultural conditions for the production of enzyme invertase by *Saccharomyces cerevisiae* BRC_{inv}. Five different fermentation media were tested for enzyme production. Out of these media, M-3 medium containing (% w v⁻¹) sucrose, 3.0; Peptone, 0.5 and Yeast extract, 0.3, gave optimum synthesis of invertase (3.86±0.64 U ml⁻¹). The production of enzyme following growth of microorganism was found to be highly significant as the fermentation medium (pH 6.0) was incubated at 30 °C for 72 h. The production of invertase was significantly improved (40.04±0.42 U ml⁻¹) by the addition of sucrose (1.5 mg ml⁻¹) as carbon source, peptone (0.3 %), ammonium sulphate (0.1 %) and dipotassium hydrogen phosphate (0.05 %) as organic, inorganic nitrogen and phosphate source, respectively. The kinetic study indicated that the values of all kinetic parameters like product and growth yield coefficients ($Y_{p/x}$, $Y_{p/s}$, $Y_{x/s}$ and $Y_{s/x}$), volumetric rates (Q_p , Q_x , Q_s) and specific rate constants (q_p , q_x , q_s) were highly significant under above optimized conditions.