

**RELATIONSHIP BETWEEN CALCIUM METABOLISM AND SUGAR-INDUCED
ACTIVATION OF PLASMA MEMBRANE H⁺- ATPASE IN THE YEAST
*SACCHAROMYCES CEREVISIAE***

Cardoso, A. S.¹; Trópia, M. J. M.¹; Fietto, L. G.²; Pereira, R. R.¹, França, M. M.¹
Castro, I. M.¹ and Brandão, R. L.¹

¹Laboratório de Biologia Celular e Molecular, NUPEB, UFOP, MG – Brazil.

²Departamento de Bioquímica, UFV, MG – Brazil

The plasma membrane H⁺- ATPase of yeast cells is a predominant membrane protein that is essential for nutrient uptake by secondary active transport systems. Glucose, the external signal more studied in yeast, triggers post-translational modifications that increase the H⁺- ATPase activity. We have demonstrated that this activation is strongly dependent on calcium metabolism and that several proteins are directly involved in this activation (Trópia *et al. Biochem. Biophys. Res. Comm.* 343: 1234-124, 2006). In this work, we show that activation of the enzyme is dependent of the calcium availability in the cytosol. We have measured the levels of total cellular calcium in a strain lacking the phospholipase C and our results indicated that the vacuolar Ca²⁺- ATPase, Pmc1 p, is involved with the reduction of the activity ATPase in the mutant *plc1D*, as already observed in mutants *snf3D* e *pgm2D*. Thus, and by using different mutants, our results indicate a relationship between the activation of the H⁺- ATPase and calcium signaling in *Saccharomyces cerevisiae* cells. Together all these results permit us to propose an entire pathway involved in the sugar-induced activation of this enzyme.

Supported by CNPq and FAPEMIG.