



## Pma1 (γ-75): sc-134480

### BACKGROUND

The yeast plasma membrane H<sup>+</sup>-ATPase (Pma1) generates a membrane electrochemical gradient which is required for the secondary uptake of nutrients. Pma1, located in the yeast plasma membrane and encoded by the PMA1 gene, provides energy for the active transport of nutrients and regulates intracellular pH. The function of the PMA1 gene is essential for cell growth and development because a null mutation is lethal in haploid cells. Pma1 is delivered to the cell surface via the secretory pathway. Pma1 is post-translationally regulated in response to the availability of glucose. PTK2 and HRK1 (YOR267c), encode protein kinases implicated in activation of Pma1 in response to glucose metabolism. The strong homology between the amino acid sequence of Pma1 and those of, Na<sup>+</sup>, K<sup>+</sup> and Ca<sup>2+</sup>-ATPases is consistent with the notion that the family of cation pumps which form a phosphorylated intermediate evolved from a common ancestral ATPase. The gene which encodes Pma1 maps to chromosome VII.

### REFERENCES

1. Serrano, R., Kiehlbrandt, M.C. and Fink, G.R. 1986. Yeast plasma membrane ATPase is essential for growth and has homology with (Na<sup>+</sup> + K<sup>+</sup>), K<sup>+</sup> and Ca<sup>2+</sup>-ATPases. *Nature* 319: 689-693.
2. Capieaux, E., Vignais, M.L., Sentenac, A. and Goffeau, A. 1989. The yeast H<sup>+</sup>-ATPase gene is controlled by the promoter binding factor TUF. *J. Biol. Chem.* 264: 7437-7446.
3. Rao, R., Drummond-Barbosa, D. and Slayman, C.W. 1993. Transcriptional regulation by glucose of the yeast PMA1 gene encoding the plasma membrane H<sup>+</sup>-ATPase. *Yeast* 9: 1075-1084.
4. Luo, W. and Chang, A. 2000. An endosome-to-plasma membrane pathway involved in trafficking of a mutant plasma membrane ATPase in yeast. *Mol. Biol. Cell* 11: 579-592.
5. Goossens, A., de La Fuente, N., Forment, J., Serrano, R. and Portillo, F. 2000. Regulation of yeast H<sup>+</sup>-ATPase by protein kinases belonging to a family dedicated to activation of plasma membrane transporters. *Mol. Cell. Biol.* 20: 7654-7661.

### SOURCE

Pma1 (γ-75) is a rabbit polyclonal antibody raised against amino acids 11-85 mapping within an N-terminal cytoplasmic domain of Pma1 of *Saccharomyces cerevisiae* origin.

### PRODUCT

Each vial contains 200 μg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

### STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

### APPLICATIONS

Pma1 (γ-75) is recommended for detection of Pma1 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of Pma1: 100 kDa.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### RESEARCH USE

For research use only, not for use in diagnostic procedures.