SANTA CRUZ BIOTECHNOLOGY, INC.

Pbs2 (yN-19): sc-6812

BACKGROUND

Yeast cells regulate their internal osmolarity in response to the environment via a MAP kinase cascade. Map kinase cascades comprise an essential branch of signal transduction, transmitting extracellular signals to the cytoplasm or nucleus. The core of these cascades consist of a MAP kinase (Mitogen Activated Protein Kinase, also called ERK, for Extracellular-Regulated protein Kinase) as well as one or more up-stream regulatory kinases (MAPKKs or MEKs, for MAP/ERK Kinase). High external osmolarity leads to the activation of the MAPKK Pbs2, which activates the MAP kinase Hog1. Sho1 also activates Hog1 in response to oxidative stress, and Hog1 (also called Ssk3) is thought to activate a transcription factor that up-regulates the production of osmo-regulatory proteins. Kex2 is a protease that regulates metabolism by mediating insulin processing.

REFERENCES

1. Boguslawski, G. 1992. PBS2, a yeast gene encoding a putative protein kinase, interacts with the RAS2 pathway and affects osmotic sensitivity of *Saccharomyces cerevisiae*. J. Gen. Microbiol. 138: 2425-2432.
2. Brewster, J.L., de Valoir, T., Dwyer, N.D., Winter, E. and Gustin, M.C. 1993. An osmosensing signal transduction pathway in yeast. Science 259: 1760-1763.
3. Schüller, C., Brewster, J.L., Alexander, M.R., Gustin, M.C. and Ruis, H. 1994. The Hog pathway controls osmotic regulation of transcription via the stress response element (STRE) of the *Saccharomyces cerevisiae* CTT1 gene. EMBO J. 13: 4382-4389.
4. Herskowitz, I. 1995. MAP kinase pathways in yeast: for mating and more. Cell 80: 187-197.
5. Maeda, T., Takekawa, M. and Saito, H. 1995. Activation of yeast Pbs2 MAPKK by MAPKKKs or by binding of an SH3-containing osmosensor. Science 269: 554-558.
6. Posas, F., Wurgler-Murphy, S.M., Maeda, T., Witten, E.A., Thai, T.C. and Saito, H. 1996. Yeast Hog1 MAP kinase cascade is regulated by a multistep phosphorelay mechanism in the SLN1-YPD1-SSK1 "Two-Component" osmosensor. Cell 86: 865-875.
7. Raitt, D.C., Posas, F. and Saito, H. 2000. Yeast Cdc42 GTPase and Ste20 PAK-like kinase regulate Sho1-dependent activation of the Hog1 MAPK pathway. EMBO J. 19: 4623-4631.
8. Zhang, B.Y., Chang, A., Kjeldsen, T.B. and Arvan, P. 2001. Intracellular retention of newly synthesized insulin in yeast is caused by endoproteolytic processing in the golgi complex. J. Cell Biol. 153: 1187-1198.

SOURCE

Pbs2 (yN-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Pbs2 of *Saccharomyces cerevisiae* origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-6812 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Pbs2 (yN-19) is recommended for detection of Pbs2 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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.

SELECT PRODUCT CITATIONS

1. García-Rodriguez, L.J., Durán, A. and Roncero, C. 2000. Calcofluor antifungal action depends on chitin and a functional high-osmolarity glycerol response (HOG) pathway: evidence for a physiological role of the *Saccharomyces cerevisiae* HOG pathway under noninducing conditions. J. Bacteriol. 182: 2428-2437.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.