SANTA CRUZ BIOTECHNOLOGY, INC.

Hog1 (A-8): sc-165977

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Yeast cells regulate their internal osmolarity in response to the environment via a MAP kinase cascade. MAP kinase cascades, which transmit extracellular signals to the cytoplasm or nucleuscomprise, comprise an essential branch of signal transduction. 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 upstream 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. Hog1 (also called Ssk3) is thought to activate a transcription factor that upregulates the production of osmo-regulatory proteins.

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 SIn1-YPD1-SSK1 "two-component" osmosensor. Cell 86: 865-875.

SOURCE

Hog1 (A-8) is a mouse monoclonal antibody raised against amino acids 291-408 of Hog1 of *Saccharomyces cerevisiae* origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain 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 for detailed protocols and support products.

APPLICATIONS

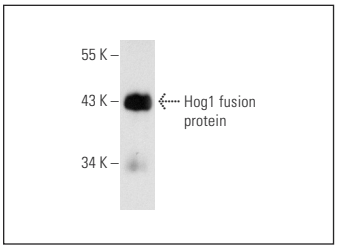
Hog1 (A-8) is recommended for detection of Hog1 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein(1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of Hog1: 50 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Hog1 (A-8): sc-165977. Western blot analysis of yeast recombinant Hog1 fusion protein.

SELECT PRODUCT CITATIONS

1. Husain, F., Pathak, P., Román, E., Pla, J. and Panwar, S.L. 2021. Adaptation to endoplasmic reticulum stress in *Candida albicans* relies on the activity of the Hog1 mitogen-activated protein kinase. Front. Microbiol. 12: 794855.

RESEARCH USE

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