

# Hog1 (γ-215): sc-9079

## 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 nucleus, comprise an essential branch of signal transduction. The core of these cascades consists 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 (MAPKs or MEKs, for MAP/ERK kinase). High external osmolarity leads to the activation of the MAPK 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., et al. 1993. An osmosensing signal transduction pathway in yeast. *Science* 259: 1760-1763.
3. Schüller, C., et al. 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., et al. 1995. Activation of yeast Pbs2 MAPKK by MAPKKs or by binding of an SH3-containing osmosensor. *Science* 269: 554-558.
6. Posas, F., et al. 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.

## SOURCE

Hog1 (γ-215) is a rabbit polyclonal antibody raised against amino acids 221-435 of Hog1 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.

## APPLICATIONS

Hog1 (γ-215) is recommended for detection of Hog1 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Molecular Weight of Hog1: 50 kDa.

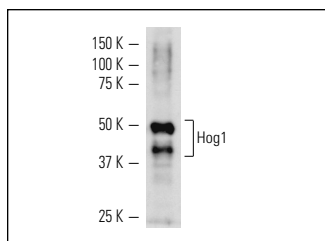
## STORAGE

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

## RESEARCH USE

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

## DATA



Hog1 (γ-215): sc-9079. Western blot analysis of yeast recombinant Hog1 fusion protein.

## SELECT PRODUCT CITATIONS

1. Shitamukai, A., et al. 2004. Evidence for antagonistic regulation of cell growth by the calcineurin and high osmolarity glycerol pathways in *Saccharomyces cerevisiae*. *J. Biol. Chem.* 279: 3651-3661.
2. Marles, J.A., et al. 2004. Protein-protein interaction affinity plays a crucial role in controlling the Sho1p-mediated signal transduction pathway in yeast. *Mol. Cell* 14: 813-823.
3. Eaton, C.J., et al. 2008. Functional analysis of a fungal endophyte stress-activated MAP kinase. *Curr. Genet.* 53: 163-174.
4. Kanetis, L., et al. 2008. Characterization of genetic and biochemical mechanisms of fludioxonil and pyrimethanil resistance in field isolates of *Penicillium digitatum*. *Phytopathology* 98: 205-214.
5. Rodaki, A., et al. 2009. Glucose promotes stress resistance in the fungal pathogen *Candida albicans*. *Mol. Biol. Cell* 20: 4845-4855.
6. Mollapour, M., et al. 2009. Presence of the Fps1p aquaglyceroporin channel is essential for Hog1p activation, but suppresses Slt2(Mpk1)p activation, with acetic acid stress of yeast. *Microbiology* 155: 3304-3311.
7. Román, E., et al. 2009. The Cek1 MAPK is a short-lived protein regulated by quorum sensing in the fungal pathogen *Candida albicans*. *FEMS Yeast Res.* 9: 942-955.
8. Jones, C.A., et al. 2010. Analysis of mitogen-activated protein kinase phosphorylation in response to stimulation of histidine kinase signaling pathways in *Neurospora*. *Meth. Enzymol.* 471: 319-334.
9. Torres-Quiroz, F., et al. 2010. The activity of yeast Hog1 MAPK is required during endoplasmic reticulum stress induced by tunicamycin exposure. *J. Biol. Chem.* 285: 20088-20096.


 MONOS  
Satisfaction  
Guaranteed

Try **Hog1 (D-3): sc-165978** or **Hog1 (F-9): sc-365609**, our highly recommended monoclonal alternatives to Hog1 (γ-215).