

Mpk1 (E-8): sc-374440

BACKGROUND

Yeasts maintain the integrity of their cell walls via a MAP kinase cascade. This cascade consists of a MAP kinase (mitogen-activated protein kinase, also called ERK, for extracellular regulated kinase) as well as several upstream regulatory kinases (MAPKKs or MEKs, for MAP/ERK kinase). Pkc1 (also designated Sst1), a yeast homolog of the mammalian PKC α , β and γ isoforms, transmits extracellular signals to Bck1, a MAPKKK (also called Slk1, Ssp31 or Las3). Bck1 then activates two MAPKKs, Mkk1 and Mkk2 (also referred to as Ssp32 and Ssp33, respectively). These in turn activate the MAP kinase Mpk1 (also called Stt2). Mutants lacking any component of this cascade exhibit a defect in cell lysis resulting from deficient cell wall synthesis. Bck2 (also designated Ctr7) has been identified as a suppressor of Pkc1 and Mpk1 deletions.

REFERENCES

- Lee, K.S., et al. 1993. A yeast mitogen-activated protein kinase homolog (Mpk1p) mediates signalling by protein kinase C. *Mol. Cell. Biol.* 13: 3067-3075.
- Irie, K., et al. 1993. MKK1 and MKK2, which encode *Saccharomyces cerevisiae* mitogen-activated protein kinase-kinase homologs, function in the pathway mediated by protein kinase C. *Mol. Cell. Biol.* 13: 3076-3083.
- Wu, J., et al. 1993. Identification and characterization of a new mammalian mitogen-activated protein kinase kinase, MKK2. *Mol. Cell. Biol.* 13: 4539-4548.
- Lee, K.S., et al. 1993. A pair of functionally redundant yeast genes (PPZ1 and PPZ2) encoding type 1-related protein phosphatases function within the PKC1-mediated pathway. *Mol. Cell. Biol.* 13: 5843-5853.
- Levin, D.E., et al. 1994. Dissecting the protein kinase c/map kinase signalling pathway of *Saccharomyces cerevisiae*. *Cell. Mol. Biol. Res.* 40: 229-239.
- Watanabe, M., et al. 1994. *Saccharomyces cerevisiae* PKC1 encodes a protein kinase C (PKC) homolog with a substrate specificity similar to that of mammalian PKC. *J. Biol. Chem.* 269: 16829-16836.
- Soler, M., et al. 1995. Characterization of domains in the yeast MAP kinase Stt2 (Mpk1) required for functional activity and *in vivo* interaction with protein kinases Mkk1 and Mkk2. *Mol. Microbiol.* 17: 833-842.
- Paravicini, G. and Friedli, L. 1996. Protein-protein interactions in the yeast PKC1 pathway: Pkc1p interacts with a component of the MAP kinase cascade. *Mol. Gen. Genet.* 251: 682-691.
- Zarzov, P., et al. 1996. The SLT2(Mpk1) MAP kinase is activated during periods of polarized cell growth in yeast. *EMBO J.* 15: 83-91.

SOURCE

Mpk1 (E-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 453-491 near the C-terminus of Mpk1 of *Saccharomyces cerevisiae* origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-374440 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Mpk1 (E-8) is recommended for detection of Mpk1 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

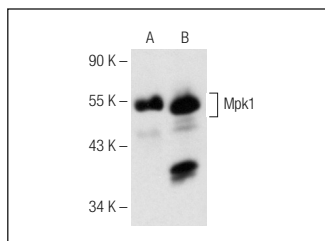
Molecular Weight of Mpk1: 60 kDa.

Positive Controls: *S. cerevisiae* whole cell lysate.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



Mpk1 (E-8): sc-374440. Western blot analysis of yeast recombinant Mpk1 fusion protein (A) and expression in *S. cerevisiae* whole cell lysate (B).

SELECT PRODUCT CITATIONS

- de Oya, I.G., et al. 2022. Manganese stress tolerance depends on Yap1 and stress-activated MAP kinases. *Int. J. Mol. Sci.* 23: 15706.

STORAGE

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