SANTA CRUZ BIOTECHNOLOGY, INC.

# Fus3 (yC-19): sc-6773

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Map kinase cascades, consisting of a mitogen-activated protein kinase (also called ERK, for extracellular regulated kinase) and one or more upstream regulatory kinases (MAPKKs), play an integral role in signal transduction. The best characterized MAP kinase pathway to date is the yeast pheromone response pathway. Extracellular pheromones bind to the receptors Ste2 and Ste3 on the cell surface. Activation of these receptors eventually leads to stimulation of the MAPKKK Ste11. Upon phosphorylation, Ste11 activates the MAPKK Ste7, which in turn activates the MAP kinases Fus3 (also called Dac2) and Kss1. These MAP kinases activate the transcription factor Ste12, which upregulates mating-specific genes, and Far1, which arrests the cell cycle.

## REFERENCES


1. Teague, M.A., et al. 1986. Nucleotide sequence of the yeast regulatory gene STE7 predicts a protein homologous to protein kinases. Proc. Natl. Acad. Sci. USA 83: 7371-7375.
2. Courchesne, W.E., et al. 1989. A putative protein kinase overcomes pheromone-induced arrest of cell cycling in *S. cerevisiae*. Cell 58: 1107-1119.
3. Dolan, J.W., et al. 1989. The yeast STE12 protein binds to the DNA sequence mediating pheromone induction. Proc. Natl. Acad. Sci. USA 86: 5703-5707.
4. Errede, B., et al. 1989. STE12, a protein involved in cell-type-specific transcription and signal transduction in yeast, is part of protein-DNA complexes. Genes Dev. 3: 1349-1361.
5. Elion, E.A., et al. 1990. FUS3 encodes a cdc2$^{+}$/CDC28-related kinase required for the transition from mitosis into conjugation. Cell 60: 649-664.
6. Rhodes, N., et al. 1990. STE11 is a protein kinase required for cell-type-specific transcription and signal transduction in yeast. Genes Dev. 4: 1862-1874.


## SOURCE

Fus3 (yC-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Fus3 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.

Blocking peptide available for competition studies, sc-6773 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

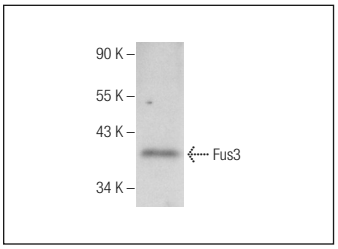
## APPLICATIONS

Fus3 (yC-19) is recommended for detection of Fus3 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)] 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA




Fus3 (yC-19): sc-6773. Western blot analysis of Fus3 expression in *Saccharomyces cerevisiae* yeast whole cell lysate.

## SELECT PRODUCT CITATIONS


1. Rodríguez-Escudero, I., et al. 2006. Inhibition of Cdc42-dependent signalling in *Saccharomyces cerevisiae* by phosphatase-dead SigD/SopB from *Salmonella typhimurium*. Microbiology 152: 3437-3452.
2. Chapman, S.A., et al. 2009. Quantitative effect of scaffold abundance on signal propagation. Mol. Syst. Biol. 5: 313.
3. Chen, R.E., et al. 2010. Systematic epistasis analysis of the contributions of protein kinase A- and mitogen-activated protein kinase-dependent signaling to nutrient limitation-evoked responses in the yeast *Saccharomyces cerevisiae*. Genetics 185: 855-870.
4. Cappell, S.D., et al. 2011. Selective regulation of MAP kinase signaling by an endomembrane phosphatidylinositol 4-kinase. J. Biol. Chem. 286: 14852-14860.
5. Torres, M.P., et al. 2011. Cell cycle-dependent phosphorylation and ubiquitination of a G protein $\alpha$ subunit. J. Biol. Chem. 286: 20208-20216.
6. Lien, E.C., et al. 2013. Proper protein glycosylation promotes mitogen-activated protein kinase signal fidelity. Biochemistry 52: 115-124.


## PROTOCOLS

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