SANTA CRUZ BIOTECHNOLOGY, INC.

Ste2 (yN-19): sc-6780

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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. Stimulation of these receptors leads to the activation of the kinase Ste20, which leads to the activation of the MAPKKK Ste11. Upon phosphorylation, Ste11 activates the MAPKK Ste7, which in turn activates the MAP kinaes 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. Cross-talk between this and other MAP kinase cascades is restricted by Ste5 (also called Nul3), which is thought to bind these components together in a functional complex.

REFERENCES

1. Nakayama, N., et al. 1985. Nucleotide sequences of STE2 and STE3, cell type-specific sterile genes from *Saccharomyces cerevisiae*. EMBO J. 4: 2643-2648.
2. Dietzel, C. and Kurjan, J. 1987. The yeast SCG1 gene: a G α-like protein implicated in the a- and α-factor response pathway. Cell 50: 1001-1010.
3. Whiteway, M., et al. 1989. The STE4 and STE18 genes of yeast encode potential β and γ subunits of the mating factor receptor-coupled G protein. Cell 56: 467-477.
4. 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.
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. Peter, M., et al. 1993. Far1 links the signal transduction pathway to the cell cycle machinery in yeast. Cell 73: 747-760.
7. Ferguson, B., et al. 1994. The yeast pheromone response pathway: new insights into signal transmission. Cell. Mol. Biol. Res. 40: 223-228.
8. Bardwell, L., et al. 1996. Signaling in the yeast pheromone response pathway: specific and high-affinity interaction of the mitogen-activated protein (MAP) kinases Kss1 and Fus3 with the upstream MAP kinase kinase Ste7. Mol. Cell. Biol. 16: 3637-3650.

SOURCE

Ste2 (yN-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Ste2 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.

RESEARCH USE

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

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-6780 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Ste2 (yN-19) is recommended for detection of Ste2 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).

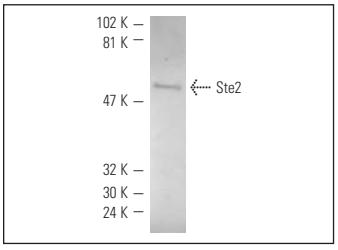
Molecular Weight of Ste2: 52 kDa.

Positive Controls: *S. cerevisiae* whole cell lysate

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



Ste2 (yN-19): sc-6780. Western blot analysis of Ste2 expression in *S. cerevisiae* whole cell lysate.

SELECT PRODUCT CITATIONS

1. Hairfield, M.L., et al. 2001. Phospholipase D1 is required for efficient mating projection formation in *Saccharomyces cerevisiae*. FEMS Yeast Res. 1: 225-232.

PROTOCOLS

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