SANTA CRUZ BIOTECHNOLOGY, INC.

Ste7 (yN-18): sc-6770

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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. 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., Chaleff, D.T. and Errede, B. 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., Kunisawa, R. and Thorner, J. 1989. A putative protein kinase overcomes pheromone-induced arrest of cell cycling in *S. cerevisiae*. Cell 58: 1107-1119.
3. Dolan, J.W., Kirkman, C. and Fields, S. 1989. The yeast Ste12 protein binds to the DNA sequence mediating pheromone induction. Proc. Natl. Acad. Sci. USA 86: 5703-5707.
4. Errede, B. and Ammerer, G. 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. Rhodes, N., Connell, L. and Errede, B. 1990. Ste11 is a protein kinase required for cell-type-specific transcription and signal transduction in yeast. Genes Dev. 4: 1862-1874.
6. Elion, E.A., Grisafi, P.L. and Fink, G.R. 1990. FUS3 encodes a Cdc2+/Cdc28-related kinase required for the transition from mitosis into conjugation. Cell 60: 649-664.
7. Peter, M., Gartner, A., Horecka, J., Ammerer, G. and Herskowitz, I. 1993. Far1 links the signal transduction pathway to the cell cycle machinery in yeast. Cell 73: 747-760.
8. Ferguson, B., Horecka, J., Printen, J., Schultz, J., Stevenson, B.J. and Sprague, G.F., Jr. 1994. The yeast pheromone response pathway: new insights into signal transmission. Cell. Mol. Biol. Res. 40: 223-228.

SOURCE

Ste7 (yN-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Ste7 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-6770 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

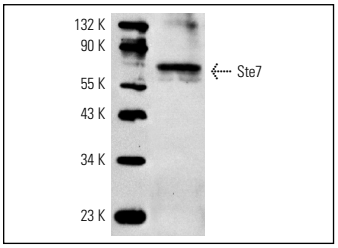
Ste7 (yN-18) is recommended for detection of Ste7 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Molecular Weight of Ste7: 61 kDa.

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.

DATA



Ste7 (yN-18): sc-6770. Western blot analysis of Ste7 expression in yeast extract.

SELECT PRODUCT CITATIONS

1. Wang, Y., et al. 2002. Pheromone-dependent ubiquitination of the mitogen-activated protein kinase kinase Ste7. J. Biol. Chem. 277: 15766.
2. Wang, Y., et al. 2003. Regulation of Ste7 ubiquitination by Ste11 phosphorylation and the Skp1-Cullin-F-box complex. J. Biol. Chem. 278: 22284-22289.

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.

PROTOCOLS

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