SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc3 (yS-20): sc-26294

BACKGROUND

Yeast cell division control (Cdc) genes encode a highly conserved family of protein-serine/threonine/tyrosine kinases and phosphatases that are required for the execution of discrete steps in the cell cycle. In the budding yeast *Saccharomyces cerevisiae*, the Cdc3, Cdc10, Cdc11, Cdc12 and Sep7/Shs1 septins assemble early in the cell cycle in a ring that marks the cytokinetic plane throughout the budding cycle. This ring structure participates in different aspects of morphogenesis, such as selection of cell polarity, localization of chitin synthesis, the switch from hyperpolar to isotropic bud growth after bud emergence and the spatial regulation of septation. The septins are a major structural component of a set of filaments at the mother-bud neck and function in the formation of septa, mating projections, and spores in *S. cerevisiae*. Mutants, defective in any of the four genes (CDC3, CDC10, CDC11, CDC12), lack these septin filaments and display a pleiotropic phenotype that involves abnormal bud growth and an inability to complete cytokinesis. Specifically, the CDC3 and CDC12 septin genes are essential for viability. Cdc3 is a substrate of the cell cycle regulatory cyclin-dependent kinase (Cdk), Cdc28. Two serines near the C-terminus of Cdc3 are phosphorylated in a Cdc28-dependent manner.

REFERENCES

1. Cid, V.J., Adamikova, L., Sanchez, M., Molina, M. and Nombela, C. 2001. Cell cycle control of septin ring dynamics in the budding yeast. Microbiology. 147: 1437-1450.
2. Lee, P.R., Song, S., Ro, H.S., Park, C.J., Lippincott, J., Li, R., Pringle, J.R., De Virgilio, C., Longtine, M.S. and Lee, K.S. 2002. Bni5p, a septin-interacting protein, is required for normal septin function and cytokinesis in *Saccharomyces cerevisiae*. Mol. Cell. Biol. 22: 6906-6920.
3. Jeong, J.W., Kim, D.H., Choi, S.Y. and Kim, H.B. 2001. Characterization of the Cdc10 product and the timing of events of the budding site of *Saccharomyces cerevisiae*. Mol. Cells 12: 77-83.
4. Warenda, A.J. and Konopka, J.B. 2002. Septin function in Candida albicans morphogenesis. Mol. Biol. Cell 13: 2732-2746.
5. Tang, C.S. and Reed, S.I. 2002. Phosphorylation of the septin Cdc3 in G_1 by the Cdc28 kinase is essential for efficient septin ring disassembly. Cell Cycle. 1: 42-49.

SOURCE

Cdc3 (yS-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Cdc3 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-26294 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Cdc3 (yS-20) is recommended for detection of Cdc3 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) 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.

STORAGE

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

PROTOCOLS

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