## SANTA CRUZ BIOTECHNOLOGY, INC.

# Cdc53 (y-300): sc-50444



#### BACKGROUND

Cell cycle progression is controlled at a point late in G<sub>1</sub> designated Start. Passage through Start requires the activity of the cyclin-dependent protein kinase Cdc28. Transition from G<sub>1</sub> to S phase requires the association of Cdc28 with members of the G<sub>1</sub> cyclin family. This progression also requires the destruction of the S-phase cyclin/Cdk inhibitor, Sic1. Sic1 proteolysis is mediated in part by the ubiquitin-conjugating enzyme Cdc34. Cdc4, a potential ubiquitin-protein ligase, is also involved in the degradation of Sic1. Another protein thought to play a role in the ubiquitin-protein ligase complex is Cdc53. This protein binds to Cdc34 and targets phosphorylated G<sub>1</sub> cyclins for ubiquitin-mediated degradation.

## REFERENCES

- Yochem, J. and Byers, B. 1987. Structural comparison of the yeast cell division cycle gene Cdc4 and a related pseudogene. J. Mol. Biol. 195: 233-245.
- 2. Nasmyth, K. 1993. Control of the yeast cell cycle by the Cdc28 protein kinase. Curr. Opin. Cell. Biol. 5: 166-179.
- Sherlock, G. and Rosamond, J. 1993. Starting to cycle: G<sub>1</sub> controls regulating cell division in budding yeast. J. Gen. Microbiol. 139: 2531-2541.
- Knapp, D., Bhoite, L., Stillman, D.J. and Nasmyth, K. 1996. The transcription factor Swi5 regulates expression of the cyclin kinase inhibitor p40Sic1. Mol. Cell. Biol. 16: 5701-5707.
- Levine, K., Huang, K., and Cross, F.R. 1996. Saccharomyces cerevisiae G<sub>1</sub> cyclins differ in their intrinsic functional specificities. Mol. Cell. Biol. 16: 6794-6803.
- Willems, A.R., Lanker, S., Patton, E.E., Craig, K.L., Nason, T.F., Mathias, N., Kobayashi, R., Wittenberg, C. and Tyers, M. 1996. Cdc53 targets phosphorylated G<sub>1</sub> cyclins for degradation by the ubiquitin proteolytic pathway. Cell 86: 453-463.
- Deshaies, R.J. 1997. Phosphorylation and proteolysis: partners in the regulation of cell division in budding yeast. Curr. Opin. Genet. Dev. 7: 7-16.
- Verma, R., Feldman, R.M., and Deshaies, R.J. 1997. Sic1 is ubiquitinated in vitro by a pathway that requires Cdc4, Cdc34, and cyclin/Cdk activities. Mol. Biol. Cell 8: 1427-1437.

## SOURCE

Cdc53 (y-300) is a rabbit polyclonal antibody raised against amino acids 516-815 mapping at the C-terminus of Cdc53 of *Saccharomyces cerevisiae* origin.

#### PRODUCT

Each vial contains 200  $\mu g$  IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## **STORAGE**

Store at 4° C, \*\*D0 NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

#### APPLICATIONS

Cdc53 (y-300) is recommended for detection of Cdc53 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2  $\mu$ g per 100–500  $\mu$ 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 Cdc53: 94 kDa.

### **RECOMMENDED SECONDARY REAGENTS**

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> 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). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

#### **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.