SANTA CRUZ BIOTECHNOLOGY, INC.

Sic1 (yN-19): sc-6712

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The Power to Question

BACKGROUND

Cell cycle progression is controlled at a point late in G_1 designated Start. Passage through Start requires the activity of the cyclin-dependent protein kinase Cdc28. Transition from G_1 to S phase requires the association of Cdc28 with members of the G_1 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_1 cyclins for ubiquitin-mediated degradation.

REFERENCES

1. 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.
3. Sherlock, G. and Rosamond, J. 1993. Starting to cycle: G_1 controls regulating cell division in budding yeast. J. Gen. Microbiol. 139: 2531-2541.
4. Levine, K., Huang, K. and Cross, F.R. 1996. *Saccharomyces cerevisiae* G_1 cyclins differ in their intrinsic functional specificities. Mol. Cell. Biol. 16: 6794-6803.
5. 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.
6. 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_1 cyclins for degradation by the ubiquitin proteolytic pathway. Cell 86: 453-463.
7. 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.
8. Deshaies, R.J. 1997. Phosphorylation and proteolysis: partners in the regulation of cell division in budding yeast. Curr. Opin. Genet. Dev. 7: 7-16.

SOURCE

Sic1 (yN-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Sic1 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-6712 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Sic1 (yN-19) is recommended for detection of Sic1 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).

Molecular Weight of Sic1: 32.2 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.

SELECT PRODUCT CITATIONS

1. Kamura, T., et al. 1999. Rbx1, a component of the VHL tumor suppressor complex and SCF ubiquitin ligase. Science 284: 657-661.
2. Varela, E., et al. 2010. Mitotic expression of Spo13 alters M-phase progression and nucleolar localization of Cdc14 in budding yeast. Genetics 185: 841-854.

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.