

# Cdc28 (yN-19): sc-6708

## 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, including Cln1, Cln2 and Cln3 (also designated DAF1 or WHI1). The G<sub>2</sub> to M phase requires the M phase cyclins, Clb1 (also designated Scb1) and Clb2, as well as the G<sub>2</sub> cyclins, Clb3 and Clb4. The S phase cyclins Clb5 and Clb6 coordinate DNA replication with cytokinesis. Expression of the cyclins is controlled by Ubc9 and Cdc34 (also designated Udc3 or Dna6) via ubiquitin-mediated proteolysis.

## REFERENCES

1. Nasmyth, K. 1993. Control of the yeast cell cycle by the Cdc28 protein kinase. *Curr. Opin Cell Biol.* 5: 166-179.
2. 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.
3. Amon, A., Tyers, M., Futcher, B. and Nasmyth, K. 1993. Mechanisms that help the yeast cell cycle clock tick: G<sub>2</sub> cyclins transcriptionally activate G<sub>2</sub> cyclins and repress G<sub>1</sub> cyclins. *Cell* 74: 993-1007.
4. Basco, R.D., Segal, M.D. and Reed, S.I. 1995. Negative regulation of G<sub>1</sub> and G<sub>2</sub> by S-phase cyclins of *Saccharomyces cerevisiae*. *Mol. Cell. Biol.* 15: 5030-5042.
5. Seufert, W., Futcher, B. and Jentsch, S. 1995. Role of a ubiquitin-conjugating enzyme in degradation of S- and M- phase cyclins. *Nature* 373: 78-81.
6. Prendergast, J.A., Ptak, C., Arnason, T.G. and Ellison, M.J. 1995. Increased ubiquitin expression suppresses the cell cycle defect associated with the yeast ubiquitin conjugating enzyme, CDC34 (UCB3). Evidence for a noncovalent interaction between CDC34 and ubiquitin. *J. Biol. Chem.* 270: 9347-9352.
7. 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.
8. Blondel, M. and Mann, C. 1996. G<sub>2</sub> cyclins are required for the degradation of G<sub>1</sub> cyclins in yeast. *Nature* 384: 279-282.

## SOURCE

Cdc28 (yN-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Cdc28 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-6708 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

Cdc28 (yN-19) is recommended for detection of Cdc28 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.

## SELECT PRODUCT CITATIONS

1. Yeong, F.M., Lim, H.H., Padmashree, C.G. and Surana, U. 2000. Exit from mitosis in budding yeast: biphasic inactivation of the Cdc28-Clb2 mitotic kinase and the role of Cdc20. *Mol. Cell* 5: 501-511.
2. Moriya, H., Shimizu-Yoshida, Y. and Kitano, H. 2006. *In vivo* robustness analysis of cell division cycle genes in *Saccharomyces cerevisiae*. *PLoS Genetics*. 2: e1111.
3. Huertas, P., Cortés-Ledesma, F., Sartori, A.A., Aguilera, A. and Jackson, S.P. 2008. CDK targets Sae2 to control DNA-end resection and homologous recombination. *Nature* 455: 689-692.
4. Blank, H.M., Li, C., Mueller, J.E., Bogomolnaya, L.M., Bryk, M. and Polymenis, M. 2008. An increase in mitochondrial DNA promotes nuclear DNA replication in yeast. *PLoS Genet.* 4: e1000047.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **Cdc28 (G-7): sc-515762**, our highly recommended monoclonal alternative to Cdc28 (yN-19).