SANTA CRUZ BIOTECHNOLOGY, INC.

Clb5 (yN-19): sc-6704

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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, including Cln1, Cln2 and Cln3 (also designated Daf1 or Whi1). The G_2 to M phase requires the M phase cyclins, Clb1 (also designated Scb1) and Clb2, as well as the G_2 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 Ubc3 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., et al. 1993. Starting to cycle: G_1 controls regulating cell division in budding yeast. J. Gen. Microbiol. 139: 2531-2541.
3. Amon, A., et al. 1993. Mechanisms that help the yeast cell cycle clock tick: G_2 cyclins transcriptionally activate G_2 cyclins and repress G_1 cyclins. Cell 74: 993-1007.
4. Basco, R.D.,et al. 1995. Negative regulation of G_1 and G_2 by S-phase cyclins of *Saccharomyces cerevisiae*. Mol. Cell. Biol. 15: 5030-5042.
5. Seufert, W., et al. 1995. Role of a ubiquitin-conjugating enzyme in degradation of S- and M-phase cyclins. Nature 373: 78-81.
6. Prendergast, J.A., et al. 1995. Increased ubiquitin expression suppresses the cell cycle defect associated with the yeast ubiquitin conjugating enzyme, Cdc34 (UBC3). Evidence for a non-covalent interaction between Cdc34 and ubiquitin. J. Biol. Chem. 270: 9347-9352.
7. Levine, K., et al. 1996. *Saccharomyces cerevisiae* G_1 cyclins differ in their intrinsic functional specificities. Mol. Cell. Biol. 16: 6794-6803.
8. Blondel, M., et al. 1996. G_2 cyclins are required for the degradation of G_1 cyclins in yeast. Nature 384: 279-282.

SOURCE

Clb5 (yN-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Clb5 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-6704 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Clb5 (yN-19) is recommended for detection of Clb5 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Molecular Weight of Clb5: 50 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. Wasch, R., et al. 2002. APC-dependent proteolysis of the mitotic cyclin Clb2 is essential for mitotic exit. Nature 418: 556-562.
2. Schwickart, M., et al. 2004. Swm1/APC13 is an evolutionarily conserved subunit of the anaphase-promoting complex stabilizing the association of Cdc16 and Cdc27. Mol. Cell. Biol. 24: 3562-3576.
3. Oelschlaegel, T., et al. 2005. The yeast APC/C subunit Mnd2 prevents premature sister chromatid separation triggered by the meiosis-specific APC/C-Ama1. Cell 120: 773-788.
4. Moriya, H., et al. 2006. *In vivo* robustness analysis of cell division cycle genes in *Saccharomyces cerevisiae*. PLoS Genet. 2: e111.
5. López-Avilés, S., et al. 2009. Irreversibility of mitotic exit is the consequence of systems-level feedback. Nature 459: 592-595.
6. Palou, G., et al. 2010. Cyclin regulation by the S phase checkpoint. J. Biol. Chem. 285: 26431-26440.
7. Sadowski, M., et al. 2010. Molecular basis for lysine specificity in the yeast ubiquitin-conjugating enzyme Cdc34. Mol. Cell. Biol. 30: 2316-2329.
8. Robbins, J.A., et al. 2010. Regulated degradation of the APC coactivator Cdc20. Cell Div. 5: 23.

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.