SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc14 (yE-17): sc-12045



BACKGROUND

Cell cycle progression is controlled at a point late in G₁ designated Start. The key cell cycle transitions in *Saccharomyces cerevisiae* are G₁ to S, metaphase to anaphase, and the exit from mitosis, all of which are regulated by a complex network of proteins. The specific set of proteins required for the exit from mitosis include Tem1, Lte1, Cdc15, Dbf2/Dbf20, Cdc5, Mob1 and Cdc14. Cdc14 is a dual specificity protein phosphatase that inactivates mitotic cyclindependent kinases (Cdks). It is tethered to the nucleolus by the action of Net1, but is released in late anaphase/telophase by Tem1, a GTP-binding protein. Mutations in these genes arrest cells in late anaphase/telophase, which indicates that Cdc14 and Tem1 are necessary for the termination of the M phase in the cell cycle.

REFERENCES

- Shirayama, M., Matsui, Y. and Toh-E, A. 1994. The yeast Tem1 gene, which encodes a GTP-binding protein, is involved in termination of M phase. Mol. Cell. Biol. 14: 7476-7482.
- Taylor, G.S., Liu, Y., Baskerville, C. and Charbonneau, H. 1997. The activity of Cdc14p, an oligomeric dual specificity protein phosphatase from *Saccharomyces cerevisiae*, is required for cell cycle progression. J. Biol. Chem. 272: 24054-24063.
- Shou, W., Seol, J.H., Shevchenko, A., Baskerville, C., Moazed, D., Shevchenko, A., Charbonneau, H. and Deshaies, R.J. 1999. Exit from mitosis is triggered by Tem1-dependent release of the protein phosphatase Cdc14 from nucleolar RENT complex. Cell 97: 233-244.
- de Almeida, A., Raccurt, I., Peyrol, S. and Charbonneau, M. 1999. The Saccharomyces cerevisiae Cdc14 phosphatase is implicated in the structural organization of the nucleolus. Biol. Cell 91: 649-663.
- 5. Jaspersen, S.L. and Morgan, D.O. 2000. Cdc14 activates Cdc15 to promote mitotic exit in budding yeast. Curr. Biol. 10: 615-618.
- Li, L., Ljungman, M. and Dixon, J.E. 2000. The human Cdc14 phosphatases interact with and dephosphorylate the tumor suppressor protein p53. J. Biol. Chem. 275: 2410-2414.

SOURCE

Cdc14 (yE-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Cdc14 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-12045 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

Cdc14 (yE-17) is recommended for detection of Cdc14 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Molecular Weight of Cdc14: 61 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Cdc14 (yE-17): sc-12045. Western blot analysis of yeast recombinant Cdc14 fusion protein.

SELECT PRODUCT CITATIONS

- 1. Moriya, H., Shimizu-Yoshida, Y. and Kitano, H. 2006. *In vivo* robustness analysis of cell division cycle genes in *Saccharomyces cerevisiae*. PLoS Genetics 2: e111.
- Chiroli, E., Rossio, V., Lucchini, G. and Piatti, S. 2007. The budding yeast PP2ACdc55 protein phosphatase prevents the onset of anaphase in response to morphogenetic defects. J. Cell Biol. 177: 599-611.
- Pablo-Hernando, M.E., Arnaiz-Pita, Y., Nakanishi, H., Dawson, D., del Rey, F., Neiman, A.M. and Vázquez de Aldana, C.R. 2007. Cdc15 is required for spore morphogenesis independently of Cdc14 in *Saccharomyces cerevisiae*. Genetics 177: 281-293.
- 4. Rossio, V. and Yoshida, S. 2011. Spatial regulation of Cdc55-PP2A by Zds1/Zds2 controls mitotic entry and mitotic exit in budding yeast. J. Cell Biol. 193: 445-454.
- Esposito, M., Piatti, S., Hofmann, L., Frontali, L., Delahodde, A. and Rinaldi, T. 2011. Analysis of the rpn11-m1 proteasomal mutant reveals connection between cell cycle and mitochondrial biogenesis. FEMS Yeast Res. 11: 60-71.

RESEARCH USE

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