Cdc14 (y-300): sc-33628

BACKGROUND

Cell cycle progression is controlled at a point late in G_1 designated Start. The key cell cycle transitions in Saccharomyces cerevisiae are G_1 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 cyclin-dependent 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

1. 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.

2. 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.

3. 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.

4. 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.

6. 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 (y-300) is a rabbit polyclonal antibody raised against amino acids 252-551 mapping at 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.

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.

APPLICATIONS

Cdc14 (y-300) is recommended for detection of Cdc14 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 Cdc14: 61 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™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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). 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™ Mounting Medium: sc-24941.

DATA
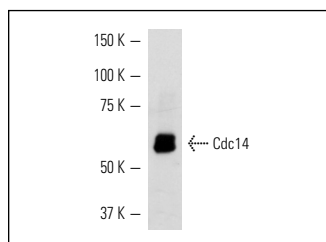
Cdc14 (y-300): sc-33628. Western blot analysis of Cdc14 expression in yeast extract.

SELECT PRODUCT CITATIONS

1. Kerr, G.W., Sarkar, S., Tibbles, K.L., Petronczki, M., Millar, J.B. and Arumugam, P. 2011. Meiotic nuclear divisions in budding yeast require PP2A(Cdc55)-mediated antagonism of Net1 phosphorylation by Cdk. J. Cell Biol. 193: 1157-1166.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.