SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc4 (3D1): sc-293423

SANTA CRUZ BIOTECHNOLOGY

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.

CHROMOSOMAL LOCATION

Genetic locus: FBXW7 (human) mapping to 4q31.3; Fbxw7 (mouse) mapping to 3 F1.

SOURCE

Cdc4 (3D1) is a mouse monoclonal antibody raised against amino acids 599-707 representing partial length Cdc4 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Cdc4 (3D1) is recommended for detection of Cdc4 of mouse, rat and human 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Cdc4 siRNA (h): sc-37547, Cdc4 siRNA (m): sc-37548, Cdc4 shRNA Plasmid (h): sc-37547-SH, Cdc4 shRNA Plasmid (m): sc-37548-SH, Cdc4 shRNA (h) Lentiviral Particles: sc-37547-V and Cdc4 shRNA (m) Lentiviral Particles: sc-37548-V.

Molecular Weight of Cdc4 α: 110 kDa.

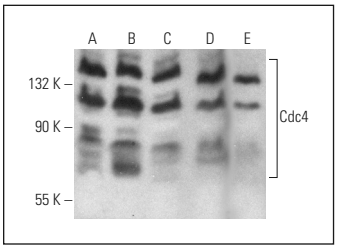
Molecular Weight of Cdc4 β: 69 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Hep G2 cell lysate: sc-2227 or NIH/3T3 whole cell lysate: sc-2210.

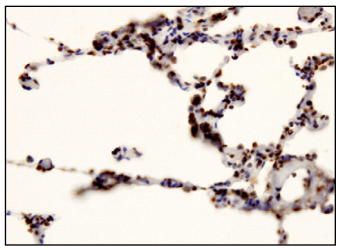
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Cdc4 (3D1): sc-293423. Western blot analysis of Cdc4 expression in Jurkat (**A**), Hep G2 (**B**), PANC-1 (**C**), NIH/3T3 (**D**) and RAT2 (**E**) whole cell lysates.



Cdc4 (3D1): sc-293423. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing nuclear staining of pneumocytes and macrophages.

SELECT PRODUCT CITATIONS

1. Chae, U., et al. 2019. A negative feedback loop between XBP1 and Fbw7 regulates cancer development. Oncogenesis 8: 12.
2. Li, Y., et al. 2020. Scutellarein inhibits the development of colon cancer via Cdc4-mediated RAGE ubiquitination. Int. J. Mol. Med. 45: 1059-1072.
3. Ding, M., et al. 2020. NDRG2 ablation reprograms metastatic cancer cells towards glutamine dependence via the induction of ASCT2. Int. J. Biol. Sci. 16: 3100-3115.

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 for detailed protocols and support products.