SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc4 (A-2): sc-518091

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The Power to Question

BACKGROUND

The F-box protein family is characterized by an approximately 40 amino acid motif known as the F-box. F-box proteins constitute one of the four subunits of ubiquitin protein ligase complex called SCFs (SKP1-cullin-F-box), which function in phosphorylation-dependent ubiquitination. One family member, Cdc4, also known as AGO, FBW7, FBXW7, FBX30, SEL10, and FLJ11071, maps to human chromosome 4q31.3. Alternative splicing of this gene generates four transcript variants. In addition to an F-box, Cdc4 contains seven tandem WD40 repeats. Cdc4 binds directly to cyclin E and targets cyclin E for ubiquitin-mediated degradation. Mutations of the Cdc4 gene are detected in ovarian and breast cancer cell lines, suggesting that the gene may be involved in the pathogenesis of human cancers.

REFERENCES

1. Moberg, K., et al. 2001. Archipelago regulates cyclin E levels in *Drosophilia* and is mutated in human cancer cell lines. Nature 413: 268-269.
2. Strohmaier, H., et al. 2001. Human F-box protein hCdc4 targets cyclin E for proteolysis and is mutated in a breast cancer cell line. Nature 413: 316-322.
3. Koepp, D., et al. 2001. Phosphorylation-dependent ubiquitination of cyclin E by the SCFFbw7 ubiquitin ligase. Science 294: 173-177.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606278. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Tsunematsu, R., et al. 2004. Mouse Fbw7/Sel-10/Cdc4 is required for Notch degradation during vascular development. J. Biol. Chem. 279: 9417-9423.
6. LocusLink Report (LocusID: 55294). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: FBXW7 (human) mapping to 4q31.3.

SOURCE

Cdc4 (A-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 351-375 within an internal region of Cdc4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cdc4 (A-2) is available conjugated to agarose (sc-518091 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-518091 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518091 PE), fluorescein (sc-518091 FITC), Alexa Fluor® 488 (sc-518091 AF488), Alexa Fluor® 546 (sc-518091 AF546), Alexa Fluor® 594 (sc-518091 AF594) or Alexa Fluor® 647 (sc-518091 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518091 AF680) or Alexa Fluor® 790 (sc-518091 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Cdc4 (A-2) is recommended for detection of Cdc4 of human origin by Western Blotting (starting dilution 1:100, 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).

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

Molecular Weight of Cdc4α: 110 kDa.

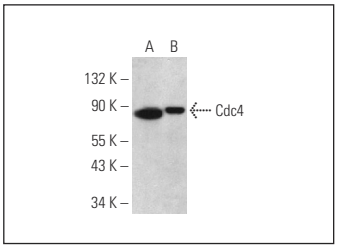
Molecular Weight of Cdc4β: 69 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or Jurkat whole cell lysate: sc-2204.

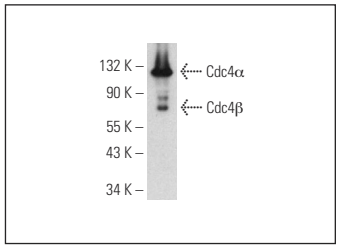
RECOMMENDED SUPPORT REAGENTS

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.

DATA



Cdc4 (A-2): sc-518091. Western blot analysis of Cdc4 expression in Jurkat (**A**) and MCF7 (**B**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM.



Cdc4 (A-2): sc-518091. Western blot analysis of human recombinant Cdc4. Detection reagent used: m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM.

SELECT PRODUCT CITATIONS

1. Chen, Z., et al. 2023. The atypical ubiquitin ligase RNF31 stabilizes c-Myc via epigenetic inactivation of FBXO32 and promotes cancer development. Cell. Signal. 107: 110677.

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.