

Cdc34 (H-4): sc-28381

BACKGROUND

Cell cycle events are regulated by the sequential activation and deactivation of cyclin dependent kinases (Cdks) and by the proteolysis of cyclins. The cell division cycle (Cdc) genes are required at various points in the cell cycle. Cdc25A, Cdc25B and Cdc25C protein tyrosine phosphatases function as mitotic activators by dephosphorylating Cdc2 p34 on regulatory tyrosine residues. Cdc6 is the human homolog of *Saccharomyces cerevisiae* Cdc6, which is involved in the initiation of DNA replication. Cdc37 appears to facilitate Cdk4/cyclin D1 complex formation and has been shown to form a stable complex with Hsp90. Cdc34, Cdc27 and Cdc16 function as ubiquitin-conjugating enzymes. Cdc34 is thought to be the structural and functional homolog of *Saccharomyces cerevisiae* Cdc34, which is essential for the G₁ to S phase transition. Cdc16 and Cdc27 are components of the APC (anaphase-promoting complex) which ubiquitinates cyclin B, resulting in cyclin B/Cdk complex degradation.

REFERENCES

- Palmer, R.E., et al. 1990. Mitotic transmission of artificial chromosomes in Cdc mutants of the yeast, *Saccharomyces cerevisiae*. *Genetics* 125: 763-774.
- Gautier, J., et al. 1991. Cdc25 is a specific tyrosine phosphatase that directly activates p34^{cdc2}. *Cell* 67: 197-211.
- Plon, S.E., et al. 1993. Cloning of the human homolog of the Cdc34 cell cycle gene by complementation in yeast. *Proc. Natl. Acad. Sci. USA* 90: 10484-10488.
- King, R.W., et al. 1995. A 20S complex containing Cdc27 and Cdc16 catalyzes the mitosis-specific conjugation of ubiquitin to cyclin B. *Cell* 81: 279-288.
- Barinaga, M. 1995. A new twist to the cell cycle. *Science* 269: 631-632.

CHROMOSOMAL LOCATION

Genetic locus: CDC34 (human) mapping to 19p13.3; Cdc34 (mouse) mapping to 10 C1.

SOURCE

Cdc34 (H-4) is a mouse monoclonal antibody raised against amino acids 144-224 of Cdc34 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cdc34 (H-4) is available conjugated to agarose (sc-28381 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28381 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28381 PE), fluorescein (sc-28381 FITC), Alexa Fluor® 488 (sc-28381 AF488), Alexa Fluor® 546 (sc-28381 AF546), Alexa Fluor® 594 (sc-28381 AF594) or Alexa Fluor® 647 (sc-28381 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-28381 AF680) or Alexa Fluor® 790 (sc-28381 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Cdc34 (H-4) is recommended for detection of Cdc34 of mouse, rat and 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), 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).

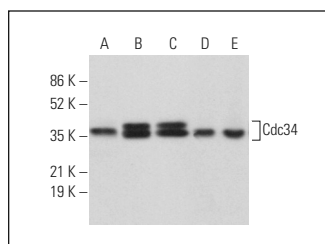
Suitable for use as control antibody for Cdc34 siRNA (h): sc-35042, Cdc34 siRNA (m): sc-37554, Cdc34 shRNA Plasmid (h): sc-35042-SH, Cdc34 shRNA Plasmid (m): sc-37554-SH, Cdc34 shRNA (h) Lentiviral Particles: sc-35042-V and Cdc34 shRNA (m) Lentiviral Particles: sc-37554-V.

Molecular Weight (predicted) of Cdc34: 27 kDa.

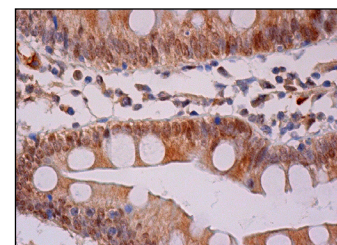
Molecular Weight (observed) of Cdc34: 34 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, HeLa nuclear extract: sc-2120 or Jurkat whole cell lysate: sc-2204.

DATA



Cdc34 (H-4): sc-28381. Western blot analysis of Cdc34 expression in HeLa (A), MOLT-4 (B) and Jurkat (C) whole cell lysates and HeLa (D) and K-562 (E) nuclear extracts. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



Cdc34 (H-4): sc-28381. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing nuclear and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

- Williams, K.M., et al. 2019. Structural insights into E1 recognition and the ubiquitin-conjugating activity of the E2 enzyme Cdc34. *Nat. Commun.* 10: 3296.
- Zhao, X.C., et al. 2020. Systematic identification of Cdc34 that functions to stabilize EGFR and promote lung carcinogenesis. *EBioMedicine* 53: 102689.

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.

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