SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc34B (Q-12): sc-167440

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The Power to Question

BACKGROUND

The eukaryotic cell division cycle consists of a number of gene-controlled sequences that involve cyclin dependent kinases (Cdks) and cell division control (Cdc) proteins. Cdc34B, also known as UBE2R2 (ubiquitin-conjugating enzyme E2 R2) or UBC3B, is a 238 amino acid member of the E2 ubiquitin-conjugating enzyme family. Similar to Cdc34, Cdc34B functions to catalytically attach ubiquitin to various proteins, such as β-TrCP (an F-box protein that mediates β-catenin degradation), via an ATP-dependent reaction that yields AMP, a diphosphate and a ubiquitin-tagged protein. Cdc34B can be phosphorylated by the protein kinase CK2 (casein kinase II), thereby allowing Cdc34B to regulate β-TrCP substrate recognition and, ultimately, enhance β-catenin degradation. Due to its ability to control β-TrCP activity, Cdc34B is thought to play a key role in cell cycle progression.

REFERENCES

1. Palmer, R.E., Hogan, E. and Koshland, D. 1990. Mitotic transmission of artificial chromosomes in Cdc mutants of the yeast, *Saccharomyces cerevisiae*. Genetics 125: 763-774.
2. Gautier, J., Solomon, M.J., Booher, R.N., Bazan, J.F. and Kirschner, M.W. 1991. Cdc25 is a specific tyrosine phosphatase that directly activates Cdc2 p34. Cell 67: 197-211.
3. Plon, S.E., Leppig, K.A., Do, H.N. and Groudine, M. 1993. Cloning of the human homolog of the CDC34 cell cycle gene by complementation in yeast. Proc. Natl. Acad. Sci. USA 90: 10484-10488.
4. King, R.W., Peters, J.M., Tugendreich, S., Rolfe, M., Hieter, P. and Kirschner, M.W. 1995. A 20S complex containing Cdc27 and Cdc16 catalyzes the mitosis-specific conjugation of ubiquitin to cyclin B. Cell 81: 279-288.
5. Barinaga, M. 1995. A new twist to the cell cycle. Science 269: 631-632.
6. Stepanova, L., Leng, X., Parker, S.B. and Harper, J.W. 1996. Mammalian p50Cdc37 is a protein kinase-targeting subunit of Hsp90 that binds and stabilizes Cdk4. Genes Dev. 10: 1491-1502.
7. Williams, R.S., Shohet, R.V and Stillman, B. 1997. A human protein related to yeast Cdc6p. Proc. Natl. Acad. Sci. USA 94: 142-147.
8. Barz, T., Ackermann, K. and Pyerin, W. 2006. Control of methionine biosynthesis genes by protein kinase CKII-mediated phosphorylation of Cdc34. Cell. Mol. Life Sci. 63: 2183-2190.
9. Hwang, G.W. 2007. A ubiquitin-proteasome system as a factor that determine the sensitivity to methylmercury. Yakugaku Zasshi 127: 463-468.

CHROMOSOMAL LOCATION

Genetic locus: UBE2R2 (human) mapping to 9p13.3; Ube2r2 (mouse) mapping to 4 A5.

SOURCE

Cdc34B (Q-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Cdc34B of human 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-167440 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Cdc34B (Q-12) is recommended for detection of Cdc34B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with Cdc34.

Cdc34B (Q-12) is also recommended for detection of Cdc34B in additional species, including equine, canine and bovine.

Suitable for use as control antibody for Cdc34B siRNA (h): sc-105193, Cdc34B siRNA (m): sc-142209, Cdc34B shRNA Plasmid (h): sc-105193-SH, Cdc34B shRNA Plasmid (m): sc-142209-SH, Cdc34B shRNA (h) Lentiviral Particles: sc-105193-V and Cdc34B shRNA (m) Lentiviral Particles: sc-142209-V.

Molecular Weight of Cdc34B: 27 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.