SANTA CRUZ BIOTECHNOLOGY, INC.

APC11 (1B4-1A4): sc-517142

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Comprising more than ten subunits, the anaphase-promoting complex (APC) acts in a cell-cycle dependent manner to promote the separation of sister chromatids during the transition between metaphase and anaphase in mitosis. APC, or cyclosome, accomplishes this progression through the ubiquitination of mitotic cyclins and other regulatory proteins that are targeted for destruction during cell division. APC is phosphorylated, and thus activated, by protein kinases Cdk1/cyclin B and polo-like kinase (Plk). APC is under tight control by a number of regulatory factors, including CDC20, CDH1 and MAD2. Specifically, Cdc20 and CDH1 directly bind to APC and activates APC's cyclin-ubiquitination activity. In contrast, MAD2 inhibits APC by forming a ternary complex with Cdc20 and APC; thus preventing APC activation. APC11 is a RING-H2 finger protein that allows for the synthesis of multiubiquitin chains in the presence of ubiquitin carrier protein 4 (Ubc4) and ubiquitin conjugating enzyme (E2). In addition, a heterodimeric complex of either Ubc4 or UbcH10 with APC11 and APC2 catalyzes the ubiquitination of human securin and cyclin B1.

REFERENCES

1. Jorgensen, P.M., et al. 1998. A subunit of the anaphase-promoting complex is a centromere-associated protein in mammalian cells. Mol. Cell. Biol. 18: 468-476.
2. Page, A.M., et al. 1999. The anaphase-promoting complex: new subunits and regulators. Annu. Rev. Biochem. 68: 583-609.
3. Peters, J.M. 1999. Subunits and substrates of the anaphase-promoting complex. Exp. Cell Res. 248: 339-349.
4. Fang, G., et al. 1999. Control of mitotic transitions by the anaphase-promoting complex. Philos. Trans. R. Soc. Lond., B, Biol. Sci. 354: 1583-1589.
5. Gmachl, M., et al. 2000. The RING-H2 finger protein APC11 and the E2 enzyme Ubc4 are sufficient to ubiquitinate substrates of the anaphase-promoting complex. Proc. Natl. Acad. Sci. USA 97: 8973-8978.
6. Tang, Z., et al. 2001. APC2 cullin protein and APC11 RING protein comprise the minimal ubiquitin ligase dodule of the anaphase-promoting complex. Mol. Biol. Cell 12: 3839-3851.
7. Bolte, M., et al. 2002. Inhibition of APC-mediated proteolysis by the meiosis-specific protein kinase Ime2. Proc. Natl. Acad. Sci. USA 99: 4385-4390.
8. Golan, A., et al. 2002. The cyclin-ubiquitin ligase activity of cyclosome/APC is jointly activated by protein kinases Cdk1/cyclin B and Plk. J. Biol. Chem. 277: 15552-15557.

CHROMOSOMAL LOCATION

Genetic locus: ANAPC11 (human) mapping to 17q25.3.

SOURCE

APC11 (1B4-1A4) is a mouse monoclonal antibody raised against amino acids 1-54 representing full length APC11 of human origin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

APC11 (1B4-1A4) is recommended for detection of APC11 of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

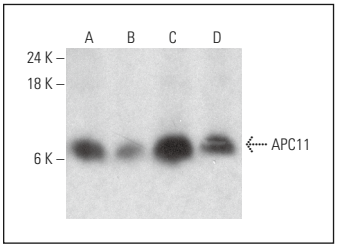
Suitable for use as control antibody for APC11 siRNA (h): sc-37534, APC11 shRNA Plasmid (h): sc-37534-SH and APC11 shRNA (h) Lentiviral Particles: sc-37534-V.

Positive Controls: A549 cell lysate: sc-2413, PC-3 cell lysate: sc-2220 or HEK293 whole cell lysate: sc-45136.

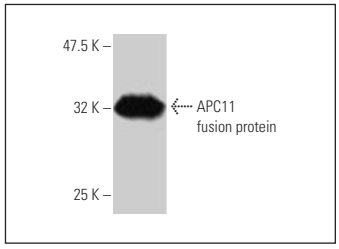
RECOMMENDED SUPPORT REAGENTS

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).

DATA



APC11 (1B4-1A4): sc-517142. Western blot analysis of APC11 expression in A549 (**A**), PC-3 (**B**), HEK293 (**C**) and MCF7 (**D**) whole cell lysates.



APC11 (1B4-1A4): sc-517142. Western blot analysis of human recombinant APC11 fusion protein.

SELECT PRODUCT CITATIONS

1. Wang, F., et al. 2019. Degradation of CCNB1 mediated by APC11 through UBA52 ubiquitination promotes cell cycle progression and proliferation of non-small cell lung cancer cells. Am. J. Transl. Res. 11: 7166-7185.
2. Xu, X., et al. 2023. DNA replication initiation factor RECQ4 possesses a role in antagonizing DNA replication initiation. Nat. Commun. 14: 1233.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.