Revision 1

Store at -20C

#12530

APC3 (D3I1V) Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R Mk	Endogenous	97	Rabbit IgG	#P30260	996

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

APC3 (D3I1V) Rabbit mAb recognizes endogenous levels of total APC3 protein. This antibody does not cross-react with either APC8/CDC23 or APC6/CDC16.

Species predicted to react based on 100% sequence homology

Hamster, Bovine, Dog, Pig, Horse

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human APC3 protein.

Background

Cell proliferation in all eukaryotic cells depends strictly upon the ubiquitin ligase (E3) activity of the anaphase promoting complex/cyclosome (APC/C), whose main function is to trigger the transition of the cell cycle from metaphase to anaphase. APC/C performs its various functions by promoting the assembly of polyubiquitin chains on substrate proteins, which targets these proteins for degradation by the 26S proteasome (1,2). In humans, twelve different APC/C subunits have been identified. Like all E3 enzymes, APC/C utilizes ubiquitin residues that have been activated by E1 enzymes and then transferred to E2 enzymes. Indeed, APC/C has been shown to interact with UBE2S and UBE2C E2 enzymes, in part, via the RING-finger domain-containing subunit, APC11 (3-5). APC/C activity is also strictly dependent upon its association with multiple cofactors. For example, the related proteins, Cdc20 and Cdh1/FZR1, participate in the recognition of APC/C substrates by interacting with specific recognition elements in these substrates (6), called D-boxes (7) and KEN-boxes (8).
Anaphase-promoting complex subunit 3 (APC3), APC8, and APC6 are components of the tetratricopeptide (TPR) APC/C subcomplex (9). The presence of APC3 is required for binding of Cdh1/FZR1 to the APC/C. This suggests that APC/C is activated by an association between Cdh1/FZR1 with APC3 that enables APC/C to recognize the D-box of substrates (6,10). APC3 localizes to the centrosome and the mitotic spindle, suggesting that APC3 plays a critical role in the transition from metaphase to anaphase (11). Phosphorylation of APC3 at multiple sites during mitosis likely leads to structural changes within the APC/C by altering subunit interactions or changing affinity for molecules that transiently associate with the APC/C, such as Cdh1/FZR1 (12,13).

Background References

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4. Gmachl, M. et al. (2000) *Proc Natl Acad Sci U S A* 97, 8973-8.
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6. Kraft, C. et al. (2005) *Mol Cell* 18, 543-53.
7. Glotzer, M. et al. (1991) *Nature* 349, 132-8.
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9. Tugendreich, S. et al. (1993) *Proc Natl Acad Sci U S A* 90, 10031-5.
10. Vodermaier, H.C. et al. (2003) *Curr Biol* 13, 1459-68.
11. Tugendreich, S. et al. (1995) *Cell* 81, 261-8.
12. Topper, L.M. et al. *Cell Cycle* 1, 282-92.
13. Kraft, C. et al. (2003) *EMBO J* 22, 6598-609.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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Limited Uses