

#3858 Store at -20C

APPL1 (D83H4) XP® Rabbit mAb



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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:
WB, IP, IF-IC	H M R Mk	Endogenous	82	Rabbit IgG	#Q9UKG1	26060

Product Usage Information

Application

Western Blotting
Immunoprecipitation
Immunofluorescence (Immunocytochemistry)

Dilution

1:2000
1:100
1:100 - 1:400

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

APPL1 (D83H4) XP® Rabbit mAb detects endogenous levels of total APPL1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Thr426 of human APPL1.

Background

The APPL1 multidomain adaptor protein is a BAR-domain protein family member that is involved in membrane trafficking within a number of signal transduction pathways (1). The amino-terminal BAR domain mediates the formation of crescent-shaped APPL1 homodimers (or APPL1 and APPL2 heterodimers) important to lipid binding and membrane curvature sensing (1). The PH domain of APPL1 is required for binding of the adaptor protein to Rab5 GTPase (2). In response to extracellular stimuli, Rab5 GTP hydrolysis releases APPL1 from the endosome and allows translocation of APPL1 to the nucleus where it joins a protein complex that controls chromatin remodeling and gene expression (3). The carboxy-terminal PTB domain of APPL1 enables an interaction between APPL1 and the TrkA neurotrophin receptor. An association between these two proteins and the TrkA-interacting protein GIPC1 within endosomes is required for nerve growth factor mediated signaling (4). APPL1 also binds follicle-stimulating hormone (FSH) receptors, which may provide a relay of FSH signaling to the PI3K/Akt pathway (5). The APPL1 adaptor protein is implicated in insulin signaling, as interaction between APPL1 and Akt2 is required for insulin-stimulated translocation of GLUT4 receptor proteins. Both induced overexpression and knockdown of APPL1 inhibit insulin-stimulated GLUT4 translocation (6). APPL1 binds the adiponectin receptor and acts as a downstream effector in the adiponectin pathway to mediate NO production (7,8). APPL1 interacts with DCC (deleted in colorectal cancer) protein and may play a role in DCC-induced apoptosis (9).

Background References

1. Habermann, B. (2004) *EMBO Rep* 5, 250-5.
2. Zhu, G. et al. (2007) *EMBO J* 26, 3484-93.
3. Miaczynska, M. et al. (2004) *Cell* 116, 445-56.
4. Lin, D.C. et al. (2006) *Mol Cell Biol* 26, 8928-41.
5. Nechamen, C.A. et al. (2004) *Biol Reprod* 71, 629-36.
6. Saito, T. et al. (2007) *J Biol Chem* 282, 32280-7.
7. Mao, X. et al. (2006) *Nat Cell Biol* 8, 516-23.
8. Cheng, K.K. et al. (2007) *Diabetes* 56, 1387-94.
9. Liu, J. et al. (2002) *J Biol Chem* 277, 26281-5.
10. Hennig, J. et al. (2014) *Cell Death Dis* 5, e1199.

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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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