

APPL1 (H-3): sc-271909

BACKGROUND

The APPL family of proteins are involved in linking, trafficking and signaling downstream of tyrosine kinase receptors. APPL1, also designated adaptor protein containing pH domain, PTB domain and leucine zipper motif 1; APPL or DCC-interacting protein 13 α (DIP13 α) and APPL2, also designated adaptor protein containing pH domain, PTB domain and leucine zipper motif 2 or DCC interacting protein 13 β (DIP13 β), are involved in the coupling of epidermal growth factor (EGF) signaling and chromatin remodeling in the nucleus. They associate with GTPase Rab 5 and are released from the plasma membrane and translocated to the nucleus. In the nucleus, APPL1 and APPL2 associate with NuRD/MeCP1 and are essential for cell growth and proliferation. APPL1 is also involved in Akt regulation, binding the kinase domains of Akt1 and Akt2; neurotrophin receptor signaling via association with GIPC and Trk A; and it associates with follicle-stimulating hormone receptor (FSHR) and the catalytic subunit of type 1A PI 3-kinase. APPL1 is highly expressed in heart, ovary, skeletal muscle and pancreas. APPL1 shares 54% homology with APPL2.

REFERENCES

1. Miaczynska, M., et al. 2004. APPL proteins link Rab5 to nuclear signal transduction via an endosomal compartment. *Cell* 116: 445-456.
2. Nechamen, C.A., et al. 2004. Human follicle-stimulating hormone (FSH) receptor interacts with the adaptor protein APPL1 in HEK 293 cells: potential involvement of the PI3K pathway in FSH signaling. *Biol. Reprod.* 71: 629-636.
3. Du, K. and Tschlis, P.N. 2005. Regulation of the Akt kinase by interacting proteins. *Oncogene* 24: 7401-7409.
4. Mao, X., et al. 2006. APPL1 binds to adiponectin receptors and mediates adiponectin signalling and function. *Nat. Cell Biol.* 8: 516-523.
5. Nechamen, C.A., et al. 2006. APPL1, APPL2, Akt2 and FOXO1a interact with FSHR in a potential signaling complex. *Mol. Cell. Endocrinol.* 260-262: 93-99.
6. Lin, D.C., et al. 2006. APPL1 associates with TrkA and GIPC1 and is required for nerve growth factor-mediated signal transduction. *Mol. Cell. Biol.* 26: 8928-8941.
7. Zhu, G., et al. 2007. Structure of the APPL1 BAR-PH domain and characterization of its interaction with Rab5. *EMBO J.* 26: 3484-3493.
8. Li, J., et al. 2007. Crystal structures of the BAR-PH and PTB domains of human APPL1. *Structure* 15: 525-533.

CHROMOSOMAL LOCATION

Genetic locus: APPL1 (human) mapping to 3p14.3; Appl1 (mouse) mapping to 14 A3.

SOURCE

APPL1 (H-3) is a mouse monoclonal antibody raised against amino acids 614-709 mapping at the C-terminus of APPL1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₃ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

APPL1 (H-3) is recommended for detection of APPL1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], 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).

Suitable for use as control antibody for APPL1 siRNA (h): sc-61980, APPL1 siRNA (m): sc-61981, APPL1 shRNA Plasmid (h): sc-61980-SH, APPL1 shRNA Plasmid (m): sc-61981-SH, APPL1 shRNA (h) Lentiviral Particles: sc-61980-V and APPL1 shRNA (m) Lentiviral Particles: sc-61981-V.

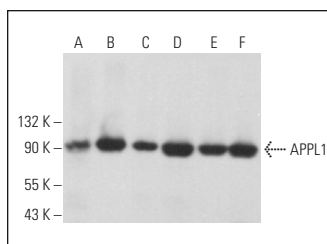
Molecular Weight of APPL1: 100 kDa.

Positive Controls: SK-BR-3 cell lysate: sc-2218, NIH/3T3 whole cell lysate: sc-2210 or L6 whole cell lysate: sc-364196.

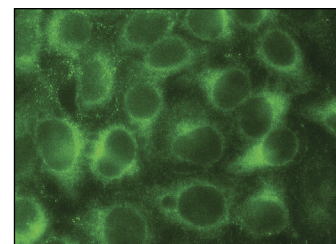
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



APPL1 (H-3): sc-271909. Western blot analysis of APPL1 expression in OVCAR-3 (A), SK-BR-3 (B), Sol8 (C), C2C12 (D), NIH/3T3 (E) and L6 (F) whole cell lysates.



APPL1 (H-3): sc-271909. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

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.