

# APPL1 (E-17): sc-55063

## BACKGROUND

The APPL family of proteins are involved in linking, trafficking and signaling downstream of tyrosine kinase receptors. APPL1 (adaptor protein containing pH domain, PTB domain and leucine zipper motif 1, APPL or DCC interacting protein 13 $\alpha$  (DIP13 $\alpha$ )) and APPL2 (adaptor protein containing pH domain, PTB domain and leucine zipper motif 2 or DCC interacting protein 13 $\beta$  (DIP13 $\beta$ )) 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

- Miaczynska, M., et al. 2004. APPL proteins link Rab5 to nuclear signal transduction via an endosomal compartment. *Cell* 116: 445-456.
- 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.
- Du, K., et al. 2005. Regulation of the Akt kinase by interacting proteins. *Oncogene* 24: 7401-7409.
- Mao, X., et al. 2006. APPL1 binds to adiponectin receptors and mediates adiponectin signalling and function. *Nat. Cell Biol.* 8: 516-523.
- 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.
- 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

APPL1 (E-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of APPL1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-55063 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

APPL1 (E-17) is recommended for detection of APPL1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

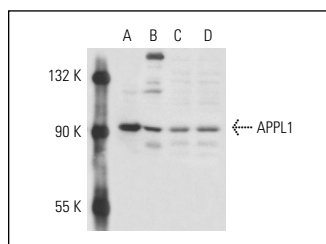
APPL1 (E-17) is also recommended for detection of APPL1 in additional species, including canine, bovine and porcine.

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: PC-12 cell lysate: sc-2250, A-10 cell lysate: sc-3806 or HeLa whole cell lysate: sc-2200

## DATA



APPL1 (E-17): sc-55063. Western blot analysis of APPL1 expression in PC-12 (A), A-10 (B) and HeLa (C) whole cell lysates and rat skeletal muscle tissue extract (D).

## SELECT PRODUCT CITATIONS

- Fu, X., et al. 2011. Retrolinkin cooperates with endophilin A1 to mediate BDNF-TrkB early endocytic trafficking and signaling from early endosomes. *Mol. Biol. Cell* 22: 3684-3698.

## 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.



Try **APPL1 (A-1): sc-271901** or **APPL1 (H-3): sc-271909**, our highly recommended monoclonal alternatives to APPL1 (E-17).