



Polyclonal Antibody against APPL1

Catalog Number: 11130

Size: 100 ug

Host: Rabbit

Introduction to the Molecule

APPL1, an adaptor protein containing an NH₂-terminal Bin/Amphiphysin/Rvs (BAR) domain, a central pleckstrin homology (PH) domain and a COOH-terminal phosphotyrosine binding (PTB) domain ^[1] was originally identified as an interacting partner of Akt in a yeast two-hybrid assay using Akt2 as a bait ^[2]. APPL1 binds to a number of cell surface receptors (TrkA^[3, 4], DCC^[5], adiponectin ^[6, 7], FSH^[8]) and intracellular signaling molecules (small GTPase Rab5^[9], GIPC^[4] and inositol 5-phosphatase^[10]), suggesting that APPL1 may act as a common relay to coordinate diverse signaling cascades. APPL1 potentiates insulin-mediated Akt activation by counteracting the effect of the Akt inhibitor TRB3 ^[11].

Isotype/Preparation:

Rabbit SPECIFIC IgG was purified by human APPL1 affinity chromatography.

Immunogen:

Recombinant full-length human APPL1 expressed in E. coli

Specificity:

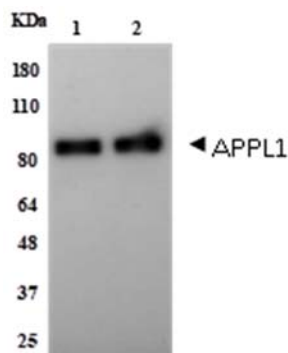
The antibody detects several types of APPL1 in different species such as human, monkey, mouse, rat etc. (about 85kDa).

Formulation:

Solution in PBS. Store at -20°C. For long-term storage, aliquot and freeze at -70°C. Avoid repeated freeze/defrost cycles.

Application/Usage:

Western blot - This antibody can be used at 0.1 - 0.2 µg/mL with the appropriate secondary reagents to detect APPL1.



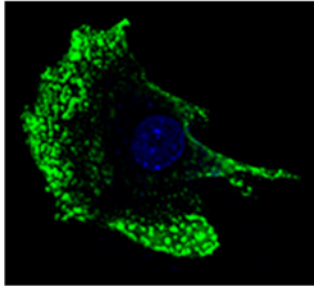
Western blot analysis of APPL1 in 20ug HEK293 (Lane 1) and C₂C₁₂

(Lane 2) cell lysate using anti-APPL1 followed by goat anti-rabbit antibody.





Immunostaining - This antibody can be used at 1.0 -2.0 µg/mL with the appropriate secondary reagents to detect APPL1.



Immunostaining of APPL1 in C₂C₁₂ cells using anti-APPL1 followed by goat anti-rabbit antibody, visualized by confocal microscopy.

ELISA - This antibody can be used at 2.0 - 5.0 µg/mL with the appropriate secondary reagents to detect APPL1.

Immunoprecipitation – See reference [6], [11]

Quality Control Test

BCA to determine quantity of the antibody

Reference:

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2. Mitsuuchi, Y., et al., Identification of a chromosome 3p14.3-21.1 gene, APPL, encoding an adaptor molecule that interacts with the oncoprotein-serine/threonine kinase AKT2. *Oncogene*, 1999. 18(35): p. 4891-8.
3. Lin, D.C., et al., APPL1 associates with TrkA and GIPC1, and is required for NGF-mediated signal transduction. *Mol Cell Biol*, 2006. 25: p. 25.
4. Varsano, T., et al., GIPC is recruited by APPL to peripheral TrkA endosomes and regulates TrkA trafficking and signaling. *Mol Cell Biol*, 2006. 26(23): p. 8942-52.
5. Liu, J., et al., Mediation of the DCC apoptotic signal by DIP13 alpha. *J Biol Chem*, 2002. 277(29): p. 26281-5. Epub 2002 May 14.
6. Cheng, K.K., et al., Adiponectin-induced endothelial nitric oxide synthase activation and nitric oxide production are mediated by APPL1 in endothelial cells. *Diabetes*, 2007. 56(5): p. 1387-94.
7. Mao, X., et al., APPL1 binds to adiponectin receptors and mediates adiponectin signalling and function. *Nat Cell Biol*, 2006. 8(5): p. 516-23. Epub 2006 Apr 16.
8. Nechamen, C.A., et al., 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*, 2004. 71(2): p. 629-36. Epub 2004 Apr 7.
9. Miaczynska, M., et al., APPL proteins link Rab5 to nuclear signal transduction via an endosomal compartment. *Cell*, 2004. 116(3): p. 445-56.
10. Erdmann, K.S., et al., A role of the Lowe syndrome protein OCRL in early steps of the endocytic pathway. *Dev Cell*, 2007. 13(3): p. 377-90.
11. Cheng, K.K., et al., APPL1 potentiates insulin-mediated inhibition of hepatic glucose production and alleviates diabetes via Akt activation in mice. *Cell Metab*, 2009. 9(5): p. 417-27.

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