

Polyclonal Antibody against APPL1

Catalog Number: 11130

Size: 100 µg

APPL1, an adaptor protein containing an NH₂-terminal Bin/Amphiphophysin/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].

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)

Isotype/Preparation:

Rabbit antiserum was purified by affinity APPL1 coupled column

Formulation:

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

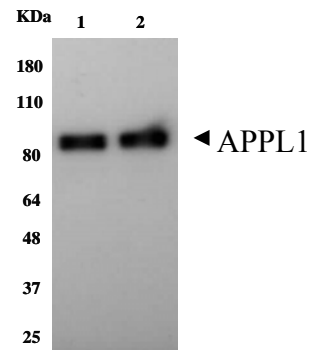
Application/Usage:

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

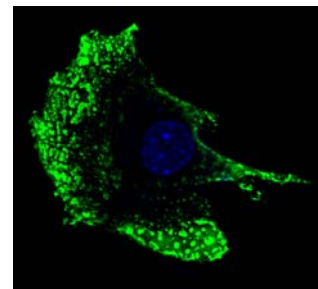
Immunostaining - This antibody can be used at 1.0 -2.0 µg/mL with the appropriate secondary reagents to detect APPL1.

ELISA - This antibody can be used at 0.5 - 1.0 µg/mL with the appropriate secondary reagents to detect APPL1.

Immunoprecipitation – See reference [6], [11]



Western blot analysis of APPL1 in 20µg HEK293 (Lane 1) and C₂C₁₂ (Lane 2) cell lysate using anti-APPL1 followed by goat anti-rabbit antibody.



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

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.
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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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