

APPL2 Antibody (N-term) Blocking Peptide
Synthetic peptide
Catalog # BP17460a**Specification**

APPL2 Antibody (N-term) Blocking Peptide - Product InformationPrimary Accession [Q8NEU8](#)**APPL2 Antibody (N-term) Blocking Peptide - Additional Information****Gene ID** 55198**Other Names**

DCC-interacting protein 13-beta, Dip13-beta, Adapter protein containing PH domain, PTB domain and leucine zipper motif 2, APPL2, DIP13B

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

APPL2 Antibody (N-term) Blocking Peptide - Protein Information**Name** APPL2 ([HGNC:18242](#))**Synonyms** DIP13B**Function**

Multifunctional adapter protein that binds to various membrane receptors, nuclear factors and signaling proteins to regulate many processes, such as cell proliferation, immune response, endosomal trafficking and cell metabolism (PubMed:15016378, PubMed:24879834, PubMed:26583432). Regulates signaling pathway leading to cell proliferation through interaction with RAB5A and subunits of the NuRD/MeCP1 complex (PubMed:15016378). Plays a role in immune response by modulating phagocytosis, inflammatory and innate immune responses. In macrophages, enhances Fc-gamma receptor-mediated phagocytosis through interaction with RAB31 leading to activation of PI3K/Akt signaling. In response to LPS, modulates inflammatory responses by playing a key role on the regulation of TLR4 signaling and in the nuclear translocation of RELA/NF-kappa-B p65 and the secretion of pro- and anti-inflammatory cytokines. Also functions as a negative regulator of innate immune response via inhibition of AKT1 signaling pathway by forming a complex with APPL1 and

PIK3R1 (By similarity). Plays a role in endosomal trafficking of TGFBR1 from the endosomes to the nucleus (PubMed:26583432). Plays a role in cell metabolism by regulating adiponectin and insulin signaling pathways and adaptive thermogenesis (By similarity) (PubMed:24879834). In muscle, negatively regulates adiponectin-stimulated glucose uptake and fatty acid oxidation by inhibiting adiponectin signaling pathway through APPL1 sequestration thereby antagonizing APPL1 action (By similarity). In muscles, negatively regulates insulin-induced plasma membrane recruitment of GLUT4 and glucose uptake through interaction with TBC1D1 (PubMed:24879834). Plays a role in cold and diet-induced adaptive thermogenesis by activating ventromedial hypothalamus (VMH) neurons through AMPK inhibition which enhances sympathetic outflow to subcutaneous white adipose tissue (sWAT), sWAT beigeing and cold tolerance (By similarity). Also plays a role in other signaling pathways namely Wnt/beta-catenin, HGF and glucocorticoid receptor signaling (By similarity) (PubMed:19433865). Positive regulator of beta-catenin/TCF-dependent transcription through direct interaction with RUVBL2/reptin resulting in the relief of RUVBL2-mediated repression of beta-catenin/TCF target genes by modulating the interactions within the beta-catenin-reptin-HDAC complex (PubMed:19433865). May affect adult neurogenesis in hippocampus and olfactory system via regulating the sensitivity of glucocorticoid receptor. Required for fibroblast migration through HGF cell signaling (By similarity).

Cellular Location

Early endosome membrane; Peripheral membrane protein. Nucleus. Cell membrane. Endosome membrane. Cytoplasm {ECO:0000250|UniProtKB:Q8K3G9}. Cytoplasmic vesicle, phagosome {ECO:0000250|UniProtKB:Q8K3G9}. Cell projection, ruffle {ECO:0000250|UniProtKB:Q8K3G9}. Cell projection, ruffle membrane {ECO:0000250|UniProtKB:Q8K3G9}. Cell membrane {ECO:0000250|UniProtKB:Q8K3G9}. Cytoplasmic vesicle, phagosome membrane {ECO:0000250|UniProtKB:Q8K3G9}. Note=Early endosomal membrane-bound and nuclear (PubMed:15016378). Translocated into the nucleus upon release from endosomal membranes following internalization of EGF (PubMed:15016378). Associates dynamically with cytoplasmic membrane structures that undergo changes in shape, movement, fusion and fission events (PubMed:18034774). PI(4,5)P2 levels are important for membrane association of APPL2 (PubMed:18034774). Absent of endosome in macrophage. Colocalized with RAB31 at early-stage phagosome (By similarity). Localized on macropinosomes in LPS-activated macrophages Associated with membrane domains in contact with pathogens and pathogen-derived ligands like LPS. First recruited to the ruffles, and accumulates on macropinosomes (By similarity) {ECO:0000250|UniProtKB:Q8K3G9, ECO:0000269|PubMed:15016378, ECO:0000269|PubMed:18034774}

Tissue Location

High levels in brain, heart, kidney and skeletal muscle.

APPL2 Antibody (N-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

APPL2 Antibody (N-term) Blocking Peptide - Images

APPL2 Antibody (N-term) Blocking Peptide - Background

Required for the regulation of cell proliferation in response to extracellular signals mediated by an early endosomal compartment. Links Rab5 to nuclear signal transduction.

APPL2 Antibody (N-term) Blocking Peptide - References

Chial, H.J., et al. PLoS ONE 5 (8), E12471 (2010) :Rashid, S., et al. J. Biol. Chem. 284(27):18115-18128(2009)Chial, H.J., et al. Traffic 9(2):215-229(2008)Nechamen, C.A., et al. Mol. Cell. Endocrinol. 260-262, 93-99 (2007) :Mao, X., et al. Nat. Cell Biol. 8(5):516-523(2006)