

Recombinant Mouse DP13B Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51778

Size: 10ug, 100ug

Protein Name: DCC-interacting protein 13-beta (Dip13-beta) (Adapter protein containing PH domain, PTB domain and leucine zipper motif 2)

Synonym: Appl2, Dip13b, Dip3b

UniProt ID: Q8K3G9

UniProt Link: www.uniprot.org/uniprotkb/Q8K3G9/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 662 AA

Molecular Weight: 74 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MPAVDKLLLEEALQDSPQARSLLSVFEEDAGTLTDYTNQLLQAMQRVYGAQNEMCLATQQLSRQLL
AYEKQNFALGKGDEEVISTLHYFSKVMDELNGLHTELAKQLADTMVLPVIQFREKDLTEVSTLKDLFG
LASSEHDLSMAKYSRLPKKKENAKTEIVKEVAAARRKQHLSSLQYYCALNALQYRKRAAMMEPLI
GFAHGQINFFKRGAEAFSKSMDGFLSSVKDMVQSIQVELEAEADKMRVSQQELLSVSESVYTPDID
VATAQINRNLIQKTGYLNLRNKTGLVTTTWERLYFFTQGGNLMCQPRGAVAGGLIQDLDNCSVMV
DCEDRRYCFQISTPSGKPGIILQAESRKEYEEWICAVNNISRQIYLTDNPEAVAIAIKLNQTALQAVTPITS
FGKKQESSCSSQNIKNSDIEDDNIVPKATASIPETEELIAPGTPIQFDIVLPATEFLDQNRGGRRTNPF
GETEDGSFPEAEDSLLQQMFIVRFLGSMVKTGSTAEVIYEAMRQVLAARAIHNIFRMTESHLMTS
QTLRLIDPQTQVSRACFELTSVTQFAAHQENKRLVGFVIRVPESTGEESLSTYIFESNSEGEKICYAIN
LGKEIIEVQKDPEALARLMLSVPLTNDGKYVLLNDQADDGGSSENARGAESEA

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.



Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant DCC-interacting protein 13-beta (Dip13-beta) (Adapter protein containing PH domain, PTB domain and leucine zipper motif 2) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein 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:19661063, PubMed:25328665, PubMed:25568335, PubMed:27219021, PubMed:29467283). Regulates signaling pathway leading to cell proliferation through interaction with RAB5A and subunits of the NuRD/MeCP1 complex (By similarity). Plays a role in immune response by modulating phagocytosis, inflammatory and innate immune responses (PubMed:25328665, PubMed:25568335, PubMed:27219021). In macrophages, enhances Fc-gamma receptor-mediated phagocytosis through interaction with RAB31 leading to activation of PI3K/Akt signaling (PubMed:25568335). 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 (PubMed:27219021). Also functions as a negative regulator of innate immune response via inhibition of AKT1 signaling pathway by forming a complex with APPL1 and PIK3R1 (PubMed:25328665). Plays a role in endosomal trafficking of TGFBR1 from the endosomes to the nucleus (By similarity). Plays a role in cell metabolism by regulating adiponectin and insulin signaling pathways and adaptive thermogenesis (By similarity) (PubMed:19661063, PubMed:29467283). In muscle, negatively regulates adiponectin-stimulated glucose uptake and fatty acid oxidation by inhibiting adiponectin signaling pathway through APPL1 sequestration thereby antagonizing APPL1 action (PubMed:19661063). In muscles, negatively regulates insulin-induced plasma membrane recruitment of GLUT4 and glucose uptake through interaction with TBC1D1 (By similarity). 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 browning and cold tolerance (PubMed:29467283). Also plays a role in other signaling pathways namely Wnt/beta-catenin, HGF and glucocorticoid receptor signaling (PubMed:26445298, PubMed:28965332, PubMed:29675572). 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 (By similarity). May affect adult neurogenesis in hippocampus and olfactory system via regulating the sensitivity of glucocorticoid receptor (PubMed:28965332, PubMed:29675572). Required for fibroblast migration through HGF cell signaling (PubMed:26445298).

Subcellular Localization: Early endosome membrane ; Peripheral membrane protein . Nucleus . Cell membrane . Endosome membrane . Cytoplasm . Cytoplasmic vesicle, phagosome . Cell projection, ruffle . Cell projection, ruffle membrane . Cell membrane . Cytoplasmic vesicle, phagosome membrane . Note=Early endosomal membrane-bound and nuclear. Translocated into the nucleus upon release from endosomal membranes following internalization of EGF (By similarity). Associates dynamically with cytoplasmic membrane structures that undergo changes in shape, movement, fusion and fission events. PI(4,5)P2 levels are important for membrane association of APPL2 (By similarity). Absent of endosome in macrophage. Colocalized with RAB31 at early-stage

phagosome (PubMed:25568335). 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 (PubMed:27219021).

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.