

Recombinant Mouse GRB2 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51609

Size: 10ug, 100ug

Protein Name: Growth factor receptor-bound protein 2 (Adapter protein GRB2) (SH2/SH3 adapter GRB2)

Synonym: Grb2

UniProt ID: Q60631

UniProt Link: www.uniprot.org/uniprotkb/Q60631/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 217 AA

Molecular Weight: 25 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MEAIKYDFKATADDELSFKRGDILKVLNEECDQNWYKAELNGKDGFIKPNYIEMKPHPWFFGKIPR
AKAEEMLSKQRHDGAFLIRESESAPGDFSLSVKFGNDVQHFKVLRDGAGKYFLWVVKFNSLNELVD
YHRSTSVSRNQQIFLRDIEQMPQQPTYVQALFDFDPQEDGELGFRRGDFIHVMDNSDPNWWKGAC
HGQTGMFPRNYVTPVNRNV

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 Growth factor receptor-bound protein 2 (Adapter protein GRB2) (SH2/SH3 adapter GRB2) 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: Non-enzymatic adapter protein that plays a pivotal role in precisely regulated signaling cascades from cell surface receptors to cellular responses, including signaling transduction and gene expression (PubMed:28964849). Thus, participates in many biological processes including regulation of innate and adaptive immunity, autophagy, DNA repair or necroptosis. Controls signaling complexes at the T-cell antigen receptor to facilitate the activation, differentiation, and function of T-cells. Mechanistically, engagement of the TCR leads to phosphorylation of the adapter protein LAT, which serves as docking site for GRB2. In turn, GRB2 establishes a connection with SOS1 that acts as a guanine nucleotide exchange factor and serves as a critical regulator of KRAS/RAF1 leading to MAPKs translocation to the nucleus and activation. Also functions a role in B-cell activation by amplifying Ca(2+) mobilization and activation of the ERK MAP kinase pathway upon recruitment to the phosphorylated B-cell antigen receptor (BCR) (PubMed:34697226). Plays a role in switching between autophagy and programmed necrosis upstream of EGFR by interacting with components of necrosomes including RIPK1 and with autophagy regulators SQSTM1 and BECN1. Regulates miRNA biogenesis by forming a functional ternary complex with AGO2 and DICER1. Functions in the replication stress response by protecting DNA at stalled replication forks from MRE11-mediated degradation. Mechanistically, inhibits RAD51 ATPase activity to stabilize RAD51 on stalled replication forks. Additionally, directly recruits and later releases MRE11 at DNA damage sites during the homology-directed repair (HDR) process.; [Isoform 2]: Does not bind to phosphorylated epidermal growth factor receptor (EGFR) but inhibits EGF-induced transactivation of a RAS-responsive element. Acts as a dominant negative protein over GRB2 and by suppressing proliferative signals, may trigger active programmed cell death. Mechanistically, inhibits RAS-ERK signaling and downstream cell proliferation by competing with GRB2 for SOS1 binding and thus by regulating SOS1 membrane recruitment.

Subcellular Localization: Nucleus . Cytoplasm . Endosome . Golgi apparatus .

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.