

Recombinant Rat GNA12 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52494

Size: 10ug, 100ug

Protein Name: Guanine nucleotide-binding protein subunit alpha-12 (G alpha-12) (G protein subunit alpha-12)

Synonym: Gna12

UniProt ID: Q63210

UniProt Link: www.uniprot.org/uniprotkb/Q63210/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 379 AA

Molecular Weight: 44 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MSGVVRTL SRCLLPAEAGARERRAGAARDAEREARRRSRDIDALLARERRAVRRLVKILLLGAGESG
KSTFLKQMRIIHGREFDQKALLEFRDTIFDNILKGSRLVDARDKLGIPWQHSENEKHGMFLMAFENK
AGLPVEPATFQLYVPALSALWRDSGIREAFSRRSEFQLGESVKYFLDNLDRIQQLNYFPSKQDILLAR
KATKGIVEHDFVIKKIPFKMVDVGGQRSQRQKWFQCFDGITSILFMVSSSEYDQVLMEDRRTNRLVE
SMNIFETIVNNKLFFNVSIILFLNKMDLLVEKVKSIVSIKKHFPDFKGDPHRLEDVQRYLVQCFDRKRRN
RGKPLFHHFTTAIDTENIRFVFHAVKDTILQENLKDIMLQ

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 Guanine nucleotide-binding protein subunit alpha-12 (G alpha-12) (G protein subunit alpha-12) 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: Guanine nucleotide-binding proteins (G proteins) are involved as modulators or transducers in various transmembrane signaling systems (PubMed:12176367, PubMed:21212405). Activates effector molecule RhoA by binding and activating RhoGEFs (ARHGEF12/LARG) (By similarity). GNA12-dependent Rho signaling subsequently regulates transcription factor AP-1 (activating protein-1) (PubMed:21212405). GNA12-dependent Rho signaling also regulates protein phosphatase 2A activation causing dephosphorylation of its target proteins (By similarity). Promotes tumor cell invasion and metastasis by activating RhoA/ROCK signaling pathway and up-regulating pro-inflammatory cytokine production. Inhibits CDH1-mediated cell adhesion in process independent from Rho activation (By similarity). Together with NAPA promotes CDH5 localization to plasma membrane (By similarity). May play a role in the control of cell migration through the TOR signaling cascade (PubMed:12176367).

Subcellular Localization: Cell membrane ; Peripheral membrane protein ; Cytoplasmic side . Lateral cell membrane ; Peripheral membrane protein ; Cytoplasmic side . Cytoplasm .
Note=Associated to the plasma membrane via lipid-anchor (By similarity). CDH1 enhances cell membrane localization (By similarity).

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.