

Recombinant Mouse PK3CG Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51912

Size: 10ug, 100ug

Protein Name: Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit gamma isoform (PI3-kinase subunit gamma) (PI3K-gamma) (PI3Kgamma) (PtdIns-3-kinase subunit gamma) (EC 2.7.1.137) (EC 2.7.1.153) (EC 2.7.1.154) (Phosphatidylinositol 4,5-bisphosphate 3-kinase 110 kDa catalytic subunit gamma) (PtdIns-3-kinase subunit p110-gamma) (p110gamma) (Phosphoinositide-3-kinase catalytic gamma polypeptide) (Serine/threonine protein kinase PIK3CG) (EC 2.7.11.1) (p120-PI3K)

Synonym: Pik3cg, Pi3kg1

UniProt ID: Q9JHG7

UniProt Link: www.uniprot.org/uniprotkb/Q9JHG7/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1102 AA

Molecular Weight: 126 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MELENYEQPVVLREDNLRRRRRMKPRSAAGSLSSMELIPIEFVLPTSQRISKTPETALLHVAGHGNV
EQMKAQVWLRALETSAAEFYHRLGPDQFLLLYQKKGQWYEIYDRYQVVQTLDCCLHYWKLMMHKSP
GQIHVVQRHVPSEETLAFQKQLTSLIGYDVTDISNVHDDLEFTRRRRLVTPRMAEVAGRDAKLYAMH
PWVTSKPLPDYLSKKIANNCIFIVIRGTTTSQTIKVSADDTPGTILQSFFTKMAKKKSLMNISESQSEQD
FVLRVCGRDEYLVGETPLKNFQWVRQCLKNGDEIHLVLDTPDPALDEVKKEWPLVDDCTGVTGY
HEQLTIHGKDHESVFTVSLWDCDRKFRVKIRGIDIPVLPNTDLTVFVEANIQHGQQVLCQRRRTSPKP
FAEEVLWNVWLEFGIKIKDLPKGALLNLQIYCKTPSLSSKASAETPGSESKGKAQLLYVNLIDHR
FLLRHGDYVLHMWQISGKAEEQGSFNADKLTSATNPDKENSMSISILLDNYCHPIALPKHRPTPDPE
GDRVRAEMPQNLRKQLEAIATDPLNPLTAEDKELLWHFRYESLKHPKAYPKLFSSVKWGGQQEIVAK
TYQLLARREIWDQSALDVGLTMQLLDCNFSDENVRAIAVQKLESLEDDDLHYLLQLVQAVKFEPYH
DSALARFLLKRGLRNKRIGHFLFWFLRSEIAQSRHYQQRFAVILEAYLRGCGTAMLQDFTQQVHVIE
MLQKVTIDIKSLSAEKYDVSSQVISQLKQKLESQNSNLPESFRVPYDPGLKAGTLVIEKCKVMASKK
KPLWLEFKCADPTVLSNETIGIIFKHGDDLRLQDMLILQILRIMESIWETESLDLCLLPYGCISTGDKIGMI
EIVKDATTIAQIQSTVGNTGAFKDEVLNHWLKEKCPIEEKFQAAVERFVYSCAGYCVATFVLGIGDR



HNDNIMISETGNLFHIDFGHILGNYKSFLGINKERVPFVLTPDFLFVMGSSGKKTSPHFQKFQDVCVR
AYLALRHHTNLLIILFSMMLMTGMPQLTSKEDIEYIRDALTVGKSEEDAKKYFLDQIEVCRDKGWTVQ
FNWFLHLVLGIKQGEKHS

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 Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit gamma isoform (PI3-kinase subunit gamma) (PI3K-gamma) (PI3Kgamma) (PtdIns-3-kinase subunit gamma) (EC 2.7.1.137) (EC 2.7.1.153) (EC 2.7.1.154) (Phosphatidylinositol 4,5-bisphosphate 3-kinase 110 kDa catalytic subunit gamma) (PtdIns-3-kinase subunit p110-gamma) (p110gamma) (Phosphoinositide-3-kinase catalytic gamma polypeptide) (Serine/threonine protein kinase PIK3CG) (EC 2.7.11.1) (p120-PI3K) 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: Phosphoinositide-3-kinase (PI3K) that phosphorylates PtdIns(4,5)P₂ (Phosphatidylinositol 4,5-bisphosphate) to generate phosphatidylinositol 3,4,5-trisphosphate (PIP₃) (PubMed:10669418, PubMed:11054537). PIP₃ plays a key role by recruiting PH domain-containing proteins to the membrane, including AKT1 and PDK1, activating signaling cascades involved in cell growth, survival, proliferation, motility and morphology (PubMed:10669416). Links G protein-coupled receptor activation to PIP₃ production (PubMed:10669416). Involved in immune, inflammatory and allergic responses (PubMed:10669416, PubMed:10669418, PubMed:16127437, PubMed:31554793). Modulates leukocyte chemotaxis to inflammatory sites and in response to chemoattractant agents. May control leukocyte polarization and migration by regulating the spatial accumulation of PIP₃ and by regulating the organization of F-actin formation and integrin-based adhesion at the leading edge (PubMed:10669416). Controls motility of dendritic cells (PubMed:15318168). Together with PIK3CD is involved in natural killer (NK) cell development and migration towards the sites of inflammation (PubMed:16116162, PubMed:19297623). Participates in T-lymphocyte migration (PubMed:19297623). Regulates T-lymphocyte proliferation, activation and cytokine production. Together with PIK3CD participates in T-lymphocyte development. Required for B-lymphocyte development and signaling. Together with PIK3CD participates in neutrophil respiratory burst. Together with PIK3CD is involved in neutrophil chemotaxis and extravasation. Together with PIK3CB promotes platelet aggregation and thrombosis (PubMed:17673465). Regulates alpha-IIb/beta-3 integrins (ITGA2B/ ITGB3) adhesive function in platelets downstream of P2Y₁₂ through a lipid kinase activity-independent mechanism (PubMed:17673465). May have also a lipid kinase activity-dependent function in platelet aggregation (PubMed:17673465). Involved in endothelial progenitor cell migration. Negative regulator of cardiac contractility (PubMed:12297047). Modulates cardiac contractility by anchoring protein kinase A (PKA) and PDE3B activation, reducing cAMP levels (PubMed:12297047, PubMed:15294162, PubMed:21474070). Regulates cardiac contractility also by promoting beta-adrenergic receptor internalization by binding to GRK2 and by non-muscle

tropomyosin phosphorylation (PubMed:21474070). Also has serine/threonine protein kinase activity: both lipid and protein kinase activities are required for beta-adrenergic receptor endocytosis (By similarity). May also have a scaffolding role in modulating cardiac contractility. Contribute to cardiac hypertrophy under pathological stress. Through simultaneous binding of PDE3B to RAPGEF3 and PIK3R6 is assembled in a signaling complex in which the PI3K gamma complex is activated by RAPGEF3 and which is involved in angiogenesis (By similarity). In neutrophils, participates in a phospholipase C-activating N-formyl peptide-activated GPCR (G protein-coupled receptor) signaling pathway downstream of RASGRP4-mediated Ras-activation, to promote neutrophil functional responses (PubMed:22728827).

Subcellular Localization: Cytoplasm . Cell membrane .

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.