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PI5K Blocking Peptide (C-term Q1513)

Synthetic peptide
Catalog # BP8036b

Specification

PI5K Blocking Peptide (C-term Q1513) - Product Information

Primary Accession	Q9Y2I7
Other Accession	Q9Z1T6

PI5K Blocking Peptide (C-term Q1513) - Additional Information

Gene ID 200576

Other Names
1-phosphatidylinositol 3-phosphate 5-kinase, Phosphatidylinositol 3-phosphate 5-kinase, FYVE finger-containing phosphoinositide kinase, PIKfyve, Phosphatidylinositol 3-phosphate 5-kinase type III, PIPkin-III, Type III PIP kinase, PIKFYVE, KIAA0981, PIP5K3

Target/Specificity
The synthetic peptide sequence is selected from aa 1513~1529 of HUMAN PIKFYVE

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.

PI5K Blocking Peptide (C-term Q1513) - Protein Information

Name PIKFYVE (HGNC:23785)

Synonyms KIAA0981, PIP5K3

Function
Dual specificity kinase implicated in myriad essential cellular processes such as maintenance of endomembrane homeostasis, and endocytic-vacuolar pathway, lysosomal trafficking, nuclear transport, stress- or hormone-induced signaling and cell cycle progression (PubMed:23086417). The PI(3,5)P2 regulatory complex regulates both the synthesis and turnover of phosphatidylinositol 3,5-bisphosphate (PtdIns(3,5)P2). Sole enzyme to catalyze the phosphorylation of phosphatidylinositol 3-phosphate on the fifth hydroxyl of the myo- inositol ring, to form (PtdIns(3,5)P2) (PubMed:17556371). Also catalyzes the phosphorylation of phosphatidylinositol on the fifth hydroxyl of the myo-inositol ring, to form phosphatidylinositol 5- phosphate (PtdIns(5)P)

(PubMed:22621786). Has serine-protein kinase activity and is able to autophosphorylate and transphosphorylate. Autophosphorylation inhibits its own phosphatidylinositol 3-phosphate 5-kinase activity, stimulates FIG4 lipid phosphatase activity and down- regulates lipid product formation (PubMed:33098764). Involved in key endosome operations such as fission and fusion in the course of endosomal cargo transport (PubMed:22621786). Required for the maturation of early into late endosomes, phagosomes and lysosomes (PubMed:30612035). Regulates vacuole maturation and nutrient recovery following engulfment of macromolecules, initiates the redistribution of accumulated lysosomal contents back into the endosome network (PubMed:27623384). Critical regulator of the morphology, degradative activity, and protein turnover of the endolysosomal system in macrophages and platelets (By similarity). In neutrophils, critical to perform chemotaxis, generate ROS, and undertake phagosome fusion with lysosomes (PubMed:28779020). Plays a key role in the processing and presentation of antigens by major histocompatibility complex class II (MHC class II) mediated by CTSS (PubMed:30612035). Regulates melanosome biogenesis by controlling the delivery of proteins from the endosomal compartment to the melanosome (PubMed:29584722). Essential for systemic glucose homeostasis, mediates insulin-induced signals for endosome/actin remodeling in the course of GLUT4 translocation/glucose uptake activation (By similarity). Supports microtubule-based endosome- to-trans-Golgi network cargo transport, through association with SPAG9 and RABEPK (By similarity). Mediates EGFR trafficking to the nucleus (PubMed:17909029).

Cellular Location
Endosome membrane; Peripheral membrane protein {ECO:0000250|UniProtKB:Q9Z1T6}. Early endosome membrane; Peripheral membrane protein. Cytoplasmic vesicle, phagosome membrane; Peripheral membrane protein. Late endosome membrane; Peripheral membrane protein {ECO:0000250|UniProtKB:Q9Z1T6}. Note=Mainly associated with membranes of the late endocytic pathway.

PI5K Blocking Peptide (C-term Q1513) - Protocols

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

- Blocking Peptides

PI5K Blocking Peptide (C-term Q1513) - Images

PI5K Blocking Peptide (C-term Q1513) - Background

PIP5K3 belongs to a large family of lipid kinases that alter the phosphorylation status of intracellular phosphatidylinositol. Signaling by phosphorylated species of phosphatidylinositol regulates diverse cellular processes, including membrane trafficking and cytoskeletal reorganization.

PI5K Blocking Peptide (C-term Q1513) - References

Am. J. Hum. Genet. 77 (1), 54-63 (2005)
J. Biol. Chem. 278 (51), 50863-50871 (2003)
Mol. Biol. Cell 14 (11), 4581-4591 (2003)
J. Biol. Chem. 277 (49), 47276-47284 (2002)
Mol. Cell. Biol. 19 (1), 623-634 (1999)