

GRK5 Antibody (C-term) Blocking Peptide
Synthetic peptide
Catalog # BP7007a**Specification**

GRK5 Antibody (C-term) Blocking Peptide - Product InformationPrimary Accession [P34947](#)**GRK5 Antibody (C-term) Blocking Peptide - Additional Information****Gene ID** 2869**Other Names**

G protein-coupled receptor kinase 5, G protein-coupled receptor kinase GRK5, GRK5, GPRK5

Target/Specificity

The synthetic peptide sequence used to generate the antibody [AP7007a](/product/products/AP7007a) was selected from the C-term region of human GRK5. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

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.

GRK5 Antibody (C-term) Blocking Peptide - Protein Information**Name** GRK5**Synonyms** GPRK5**Function**

Serine/threonine kinase that phosphorylates preferentially the activated forms of a variety of G-protein-coupled receptors (GPCRs). Such receptor phosphorylation initiates beta-arrestin-mediated receptor desensitization, internalization, and signaling events leading to their down-regulation. Phosphorylates a variety of GPCRs, including adrenergic receptors, muscarinic acetylcholine receptors (more specifically Gi-coupled M2/M4 subtypes), dopamine receptors and opioid receptors. In addition to GPCRs, also phosphorylates various substrates: Hsc70-interacting protein/ST13, TP53/p53, HDAC5, and arrestin-1/ARRB1. Phosphorylation of ARRB1 by GRK5 inhibits G-protein independent MAPK1/MAPK3 signaling downstream of 5HT4-receptors. Phosphorylation of HDAC5, a repressor of myocyte enhancer factor 2 (MEF2) leading to nuclear export of HDAC5 and allowing MEF2-mediated transcription. Phosphorylation of

TP53/p53, a crucial tumor suppressor, inhibits TP53/p53-mediated apoptosis. Phosphorylation of ST13 regulates internalization of the chemokine receptor. Phosphorylates rhodopsin (RHO) (in vitro) and a non G-protein-coupled receptor, LRP6 during Wnt signaling (in vitro).

Cellular Location

Cytoplasm. Nucleus. Cell membrane; Peripheral membrane protein. Note=Predominantly localized at the plasma membrane; targeted to the cell surface through the interaction with phospholipids. Nucleus localization is regulated in a GPCR and Ca(2+)/calmodulin-dependent fashion

Tissue Location

Highest levels in heart, placenta, lung > skeletal muscle > brain, liver, pancreas > kidney.

GRK5 Antibody (C-term) Blocking Peptide - Protocols

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

- [Blocking Peptides](#)

GRK5 Antibody (C-term) Blocking Peptide - Images**GRK5 Antibody (C-term) Blocking Peptide - Background**

Protein kinases are enzymes that transfer a phosphate group from a phosphate donor, generally the γ phosphate of ATP, onto an acceptor amino acid in a substrate protein. By this basic mechanism, protein kinases mediate most of the signal transduction in eukaryotic cells, regulating cellular metabolism, transcription, cell cycle progression, cytoskeletal rearrangement and cell movement, apoptosis, and differentiation. With more than 500 gene products, the protein kinase family is one of the largest families of proteins in eukaryotes. The family has been classified in 8 major groups based on sequence comparison of their tyrosine (PTK) or serine/threonine (STK) kinase catalytic domains. The AGC kinase group consists of 63 kinases including the cyclic nucleotide-regulated protein kinase (PKA & PKG) family, the diacylglycerol-activated/phospholipid-dependent protein kinase C (PKC) family, the related to PKA and PKC (RAC/Akt) protein kinase family, the kinases that phosphorylate G protein-coupled receptors family (ARK), and the kinases that phosphorylate ribosomal protein S6 family (RSK).

GRK5 Antibody (C-term) Blocking Peptide - References

Pronin, A.N., et al., J. Biol. Chem. 275(34):26515-26522 (2000). Pronin, A.N., et al., J. Biol. Chem. 273(47):31510-31518 (1998). Nagayama, Y., et al., J. Biol. Chem. 271(17):10143-10148 (1996). Kunapuli, P., et al., J. Biol. Chem. 269(2):1099-1105 (1994). Kunapuli, P., et al., Proc. Natl. Acad. Sci. U.S.A. 90(12):5588-5592 (1993).