10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

PRKAG3 Antibody (Center) Blocking Peptide

Synthetic peptide
Catalog # BP7050c

Specification

PRKAG3 Antibody (Center) Blocking Peptide - Product Information

Primary Accession Q9UGI9

PRKAG3 Antibody (Center) Blocking Peptide - Additional Information

Gene ID 53632

Other Names
5'-AMP-activated protein kinase subunit gamma-3, AMPK gamma3, AMPK subunit gamma-3, PRKAG3, AMPKG3

Target/Specificity
The synthetic peptide sequence used to generate the antibody AP7050c was selected from the Center region of human PRKAG3 . 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.

PRKAG3 Antibody (Center) Blocking Peptide - Protein Information

Name PRKAG3

Synonyms AMPKG3

Function
AMP/ATP-binding subunit of AMP-activated protein kinase (AMPK), an energy sensor protein kinase that plays a key role in regulating cellular energy metabolism (PubMed:14722619, PubMed:24563466, PubMed:17878938). In response to reduction of intracellular ATP levels, AMPK activates energy-producing pathways and inhibits energy-consuming processes: inhibits protein, carbohydrate and lipid biosynthesis, as well as cell growth and proliferation. AMPK acts via direct phosphorylation of metabolic enzymes, and by longer-term effects via phosphorylation of transcription regulators. AMPK also acts as a regulator

of cellular polarity by remodeling the actin cytoskeleton; probably by indirectly activating myosin. The AMPK gamma3 subunit is a non-catalytic subunit with a regulatory role in muscle energy metabolism (PubMed:17878938). It mediates binding to AMP, ADP and ATP, leading to AMPK activation or inhibition: AMP-binding results in allosteric activation of alpha catalytic subunit (PRKAA1 or PRKAA2) both by inducing phosphorylation and preventing dephosphorylation of catalytic subunits. ADP also stimulates phosphorylation, without stimulating already phosphorylated catalytic subunit. ATP promotes dephosphorylation of catalytic subunit, rendering the AMPK enzyme inactive.

Tissue Location
Skeletal muscle, with weak expression in heart and pancreas

PRKAG3 Antibody (Center) Blocking Peptide - Protocols

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

- Blocking Peptides

PRKAG3 Antibody (Center) Blocking Peptide - Images

PRKAG3 Antibody (Center) Blocking Peptide - Background

PRKAG3 is a regulatory subunit of the AMP-activated protein kinase (AMPK). AMPK is a heterotrimer consisting of an alpha catalytic subunit, and non-catalytic beta and gamma subunits. AMPK is an important energy-sensing enzyme that monitors cellular energy status. In response to cellular metabolic stresses, AMPK is activated, and thus phosphorylates and inactivates acetyl-CoA carboxylase (ACC) and beta-hydroxy beta-methylglutaryl-CoA reductase (HMGCR), key enzymes involved in regulating de novo biosynthesis of fatty acid and cholesterol. This subunit is one of the gamma regulatory subunits of AMPK. It is dominantly expressed in skeletal muscle. Studies of the pigcounterpart suggest that this subunit may play a key role in the regulation of energy metabolism in skeletal muscle.

PRKAG3 Antibody (Center) Blocking Peptide - References

Milan, D., et al., Science 288(5469):1248-1251 (2000).Cheung, P.C., et al., Biochem. J. 346 Pt 3, 659-669 (2000).