

Bioactive

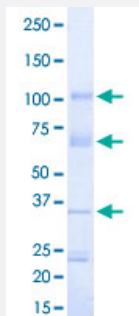
Full-Length

PRKAA2/PRKAB1/PRKAG1 (Human) Recombinant Protein

Catalog # P5493

Size 5 ug

Applications



Result of activity analysis

Result of activity analysis

□

Specification

Product Description

Human PRKAA2 (NP_006243.2, 1 a.a. - 552 a.a.) and PRKAB1(NP_006244.2, 1 a.a. - 270 a.a.) and PRKAG1 (NP_002724.1, 1 a.a. - 331 a.a.) full-length recombinant protein with GST tag expressed in baculovirus infected Sf21 cells.

Host

insect

Theoretical MW (kDa)

89

Form

Liquid

Preparation Method

Baculovirus infected insect cell (Sf21) expression system

Purification

Glutathione sepharose chromatography

Purity	72 % by SDS-PAGE/CBB staining
Activity	The activity was measured by off-chip mobility shift assay. The enzyme was incubated with fluorescence-labeled substrate and Mg(or Mn)/ATP. The phosphorylated and unphosphorylated substrates were separated and detected by LabChip 3000. Substrate: SAMS peptide. ATP: 100 uM.
Quality Control Testing	Loading 1 ug protein in SDS-PAGE
Storage Buffer	In 50 mM Tris-HCl, 150 mM NaCl, pH 7.5 (0.1% CHAPS, 1 mM DTT, 10% glycerol)
Storage Instruction	Store at -80°C. Aliquot to avoid repeated freezing and thawing.
Note	Result of activity analysis Result of activity analysis

Applications

- Functional Study
- SDS-PAGE

Gene Info — PRKAA2

Entrez GeneID	5563
Protein Accession#	NP_006243.2 (Gene ID : 5563);NP_006244.2 (Gene ID : 5564);NP_002724.1 (Gene ID : 5571)
Gene Name	PRKAA2
Gene Alias	AMPK, AMPK2, PRKAA
Gene Description	protein kinase, AMP-activated, alpha 2 catalytic subunit
Omim ID	600497
Gene Ontology	Hyperlink

Gene Summary

The protein encoded by this gene is a catalytic subunit of the AMP-activated protein kinase (AMP K). 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 (HMG CR), key enzymes involved in regulating de novo biosynthesis of fatty acid and cholesterol. Studies of the mouse counterpart suggest that this catalytic subunit may control whole-body insulin sensitivity and is necessary for maintaining myocardial energy homeostasis during ischemia. [provided by RefSeq]

Other Designations

5'-AMP-activated protein kinase, catalytic alpha-2 chain|AMP-activated protein kinase alpha 2 catalytic subunit|AMPK-alpha-2 chain|OTTHUMP00000009993

Gene Info — PRKAB1

Entrez GeneID

[5564](#)

Protein Accession#

[NP_006243.2 \(Gene ID : 5563\);NP_006244.2 \(Gene ID : 5564\);NP_002724.1 \(Gene ID : 5571\)](#)

Gene Name

PRKAB1

Gene Alias

AMPK, HAMPKb, MGC17785

Gene Description

protein kinase, AMP-activated, beta 1 non-catalytic subunit

Omim ID

[602740](#)

Gene Ontology

[Hyperlink](#)

Gene Summary

The protein encoded by this gene is a regulatory subunit of the AMP-activated protein kinase (AMP K). 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 (HMG CR), key enzymes involved in regulating de novo biosynthesis of fatty acid and cholesterol. This subunit may be a positive regulator of AMPK activity. The myristoylation and phosphorylation of this subunit have been shown to affect the enzyme activity and cellular localization of AMPK. This subunit may also serve as an adaptor molecule mediating the association of the AMPK complex. [provided by RefSeq]

Other Designations

5'-AMP-activated protein kinase beta-1 subunit|AMP-activated protein kinase beta 1 non-catalytic subunit|AMP-activated protein kinase beta subunit|AMPK beta -1 chain|AMPK beta 1|protein kinase, AMP-activated, noncatalytic, beta-1

Gene Info — PRKAG1

Entrez GeneID

[5571](#)

Protein Accession#	NP_006243.2 (Gene ID : 5563);NP_006244.2 (Gene ID : 5564);NP_002724.1 (Gene ID : 5571)
Gene Name	PRKAG1
Gene Alias	AMPKG, MGC8666
Gene Description	protein kinase, AMP-activated, gamma 1 non-catalytic subunit
Omim ID	602742
Gene Ontology	Hyperlink
Gene Summary	The protein encoded by this gene is a regulatory subunit of the AMP-activated protein kinase (AM PK). 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. Alternatively spliced transcript variants encoding distinct isoforms have been observed. [provided by RefSeq]
Other Designations	5'-AMP-activated protein kinase, gamma-1 subunit AMP-activated protein kinase, noncatalytic gamma-1 subunit AMPK gamma-1 chain

Pathway

- [Adipocytokine signaling pathway](#)
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- [Adipocytokine signaling pathway](#)
- [Hypertrophic cardiomyopathy \(HCM\)](#)
- [Hypertrophic cardiomyopathy \(HCM\)](#)
- [Hypertrophic cardiomyopathy \(HCM\)](#)
- [Insulin signaling pathway](#)
- [Insulin signaling pathway](#)
- [Insulin signaling pathway](#)
- [mTOR signaling pathway](#)
- [Regulation of autophagy](#)

Disease

- [Alzheimer disease](#)
- [Atherosclerosis](#)
- [Atherosclerosis](#)
- [Atherosclerosis](#)
- [Calcinosis](#)
- [Calcinosis](#)
- [Calcinosis](#)
- [Cardiovascular Diseases](#)
- [Cardiovascular Diseases](#)
- [Cardiovascular Diseases](#)
- [Coronary Artery Disease](#)
- [Coronary Artery Disease](#)
- [Coronary Artery Disease](#)
- [Diabetes Complications](#)
- [Diabetes Mellitus](#)
- [Diabetes Mellitus](#)
- [Diabetes Mellitus](#)
- [Drug Toxicity](#)
- [Drug Toxicity](#)
- [Drug Toxicity](#)
- [Edema](#)
- [Edema](#)
- [Edema](#)
- [Genetic Predisposition to Disease](#)

- [Hypercholesterolemia](#)
- [Hypercholesterolemia](#)
- [Insulin Resistance](#)
- [Metabolic Syndrome X](#)
- [Neoplasms](#)
- [Osteoporosis](#)