

Rabbit PRKAG1/2/3 Polyclonal Antibody | anti-PRKAG1 antibody

PRKAG1/2/3 Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA323917	Rabbit	Human, Mouse, Rat	ELISA, Immunocytochemistry, Immunofluorescence, Western Blot

PRODUCT SYNONYMS

PRKAG1/2/3; Polyclonal Antibody; PRKAG1/2/3 Antibody; 5' AMP activated protein kinase gamma 1 subunit; 5' AMP activated protein kinase subunit gamma 1; 5"-AMP-activated protein kinase subunit gamma-1; AAKG1_HUMAN; AMP activated protein kinase noncatalytic gamma 1 subunit; AMPK gamma 1 chain; AMPK gamma1; AMPK subunit gamma-1; AMPKg; MGC8666; PRKAG 1; PRKAG1; Protein kinase AMP activated gamma 1 non catalytic subunit; protein kinase; AMP-activated; noncatalytic gamma-1; 5"-AMP-activated protein kinase subunit gamma-2; AAKG; AAKG2; AAKG2_HUMAN; AMPK gamma2; AMPK subunit gamma 2; AMPK subunit gamma-2; CMH6; H91620p; Prkag2; Protein kinase AMP activated gamma 2 non catalytic subunit; WPWS; 5 AMP activated protein kinase subunit gamma 3; 5"-AMP-activated protein kinase subunit gamma-3; AAKG3_HUMAN; AMPK gamma 3 chain; AMPK gamma3; AMPK subunit gamma-3; AMPKG3; PRKAG3; Protein kinase AMP activated gamma 3 non catalytic subunit; anti-PRKAG1 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Isotype	IgG
Specificity	PRKAG1/2/3 antibody detects endogenous levels of total PRKAG1/2/3
Purity/Purification	The antiserum was purified by peptide affinity chromatography using SulfoLink Coupling Resin.
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Sequence Length	340
Applicable Applications for anti-PRKAG1 antibody	ELISA, ICC (Immunocytochemistry), IF (Immunofluorescence), WB (Western Blot)
Immunogen	A synthesized peptide
Predicted Cross Reactivity	Pig, Zebrafish, Bovine, Sheep, Rabbit, Dog, Chicken, Xenopus
Similarity	Pig (100%), Zebrafish (91%), Bovine (100%), Sheep (100%), Rabbit (100%), Dog (100%), Chicken (100%), Xenopus (90%)
Conjugation	Unconjugated
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES



IF (Immunofluorescence)

AAA323917 staining 293 cells by IF/ICC. The sample were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) antibody, diluted at 1/600, was used as secondary antibody.



WB (Western Blot)

Western blot analysis of extracts from Jurkat cells using PRKAG1/2/3 antibody.



WB (Western Blot)

Western blot analysis of extracts from Hela, using PRKAG1/2/3 Antibody. Lane 1 was treated with the antigen-specific peptide.

ADDITIONAL INFORMATION

Related Product Information for anti-PRKAG1 antibody

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. 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. Also acts as a regulator of cellular polarity by remodeling the actin cytoskeleton; probably by indirectly activating myosin. Gamma non-catalytic subunit mediates binding to AMP, ADP and ATP, leading to activate or inhibit AMPK: 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.

Subunit Structure: AMPK is a heterotrimer of an alpha catalytic subunit (PRKAA1 or PRKAA2), a beta (PRKAB1 or PRKAB2) and a gamma non-catalytic subunits (PRKAG1, PRKAG2 or PRKAG3). Interacts with FNIP1 and FNIP2.

Post-translational Modifications: Phosphorylated by ULK1 and ULK2; leading to negatively regulate AMPK activity and suggesting the existence of a regulatory feedback loop between ULK1, ULK2 and AMPK.

Similarity: The AMPK pseudosubstrate motif resembles the sequence around sites phosphorylated on target proteins of AMPK, except the presence of a non-phosphorylatable residue in place of Ser. In the absence of AMP this pseudosubstrate sequence may bind to the active site groove on the alpha subunit (PRKAA1 or PRKAA2), preventing phosphorylation by the upstream activating kinase STK11/LKB1. The 4 CBS domains mediate binding to nucleotides. Of the 4 potential nucleotide-binding sites, 3 are occupied, designated as sites 1, 3, and 4 based on the CBS modules that provide the acidic residue for coordination with the 2'-and 3'-hydroxyl groups of the ribose of AMP. Of these, site 4 appears to be a structural site that retains a tightly held AMP molecule (AMP 3). The 2 remaining sites, 1 and 3, can bind either AMP, ADP or ATP. Site 1 (AMP, ADP or ATP 1) is the high-affinity binding site and likely accommodates AMP or ADP. Site 3 (AMP, ADP or ATP 2) is the weakest nucleotide-binding site on the gamma subunit, yet it is exquisitely sensitive to changes in nucleotide levels and this allows AMPK to respond rapidly to changes in cellular energy status. Site 3 is likely to be responsible for protection of a conserved threonine in the activation loop of the alpha catalytic subunit through conformational changes induced by binding of AMP or ADP. Belongs to the 5'-AMP-activated protein kinase gamma subunit family.

NCBI AND UNIPROT INFORMATION

NCBI GI #	332000015
NCBI GeneID	5571
NCBI Accession #	NP_001193638.1
NCBI GenBank Nucleotide #	NM_001206709.1
UniProt Accession #	P54619; Q8N7V9; B4DDT7

Molecular Weight	Observed: 38 kD Predicted: 38 kDa
NCBI Official Full Name	5'-AMP-activated protein kinase subunit gamma-1 isoform 3
NCBI Official Synonym Full Names	protein kinase AMP-activated non-catalytic subunit gamma 1
NCBI Official Symbol	PRKAG1
NCBI Official Synonym Symbols	AMPKG
NCBI Protein Information	5'-AMP-activated protein kinase subunit gamma-1
UniProt Protein Name	5'-AMP-activated protein kinase subunit gamma-1
UniProt Gene Name	PRKAG1
UniProt Synonym Gene Names	AMPK gamma1; AMPK subunit gamma-1; AMPKg

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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