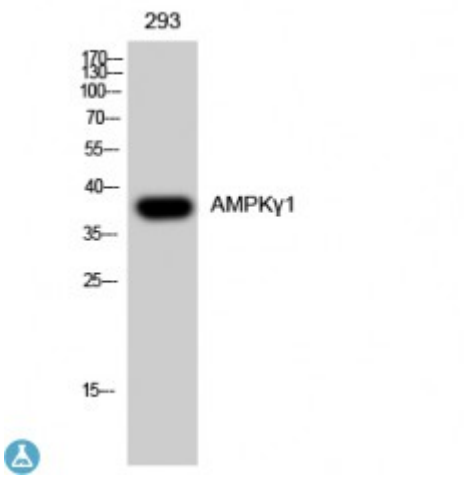
Anti-AMP gamma antibody



Description	Rabbit polyclonal to AMPKgamma1.

Model	STJ91585
Host	Rabbit
Reactivity	Human, Mouse, Rat
Applications	ELISA, WB
Immunogen	Synthesized peptide derived from human AMPKgamma1
Immunogen Region	10-90 aa, N-terminal
Gene ID	5571
Gene Symbol	PRKAG1
Dilution range	WB 1:500-1:2000ELISA 1:5000
Specificity	AMPKgamma1 Polyclonal Antibody detects endogenous levels of AMPKgamma1 protein.
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).
Protein Name	5'-AMP-activated protein kinase subunit gamma-1 AMPK gamma1 AMPK subunit gamma-1 AMPKg
Molecular Weight	38 kDa
Clonality	Polyclonal
Conjugation	Unconjugated

Isotype	IgG
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:9385OMIM:602742
Alternative Names	5'-AMP-activated protein kinase subunit gamma-1 AMPK gamma1 AMPK subunit gamma-1 AMPKg
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.
Sequence and Domain Family	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.
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.

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