

Rabbit PRKAA1 Polyclonal Antibody | anti-PRKAA1 antibody

PRKAA1 Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA301646	Rabbit	Human, Mouse, Rat	Immunoprecipitation, Immunofluorescence, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

PRKAA1; Polyclonal Antibody; PRKAA1 Antibody; AMPK; AMPKa1; MGC33776; MGC57364; anti-PRKAA1 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Specificity	The antibody detects endogenous level of total PRKAA1 protein.
Purity/Purification	Antibodies were purified by affinity purification using immunogen.
Form/Format	Supplied at 1.0mg/mL in phosphate buffered saline (without Mg ²⁺ and Ca ²⁺), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1.0 mg/ml (varies by lot)
Sequence Length	559
Applicable Applications for anti-PRKAA1 antibody	IP (Immunoprecipitation), IF (Immunofluorescence), IHC (Immunohistochemistry), WB (Western Blot)
Immunogen Type	Recombinant Protein
Immunogen Description	Recombinant protein of human PRKAA1.
Target Name	PRKAA1
Preparation and Storage	Store at -20 degree C

IMAGES



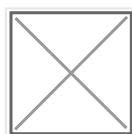
IF (Immunofluorescence)

Immunofluorescence analysis of HeLa cell using PRKAA1 antibody.



IHC (Immunohistochemistry)

Immunohistochemical analysis of paraffin-embedded human prostate cancer, using PRKAA1 antibody.



WB (Western Blot)

Western blot analysis of HeLa cell lysate using PRKAA1 antibody.

ADDITIONAL INFORMATION

Related Product Information for anti-PRKAA1 antibody	AMP-activated protein kinase (AMPK) is highly conserved from yeast to plants and animals and plays a key role in the regulation of energy homeostasis (1). AMPK is a heterotrimeric complex composed of a catalytic α subunit and regulatory β and γ subunits, each of which is encoded by two or three distinct genes ($\alpha 1, 2$; $\beta 1, 2$; $\gamma 1, 2, 3$) (2). The kinase is activated by an elevated AMP/ATP ratio due to cellular and environmental stress, such as heat shock, hypoxia, and ischemia (1). The tumor suppressor LKB1, in association with accessory proteins STRAD and MO25, phosphorylates AMPK α at Thr172 in the activation loop, and this phosphorylation is required for AMPK activation (3-5). AMPK α is also phosphorylated at Thr258 and Ser485 (for $\alpha 1$; Ser491 for $\alpha 2$). The upstream kinase and the biological significance of these phosphorylation events have yet to be elucidated (6). The $\beta 1$ subunit is post-translationally modified by myristoylation and multi-site phosphorylation including Ser24/25, Ser96, Ser101, Ser108, and Ser182 (6,7). Phosphorylation at Ser108 of the $\beta 1$ subunit seems to be required for the activation of AMPK enzyme, while phosphorylation at Ser24/25 and Ser182 affects AMPK localization (7). Several mutations in AMPK γ subunits have been identified, most of which are located in the putative AMP/ATP binding sites (CBS or Bateman domains). Mutations at these sites lead to reduction of AMPK activity and cause glycogen accumulation in heart or skeletal muscle (1,2). Accumulating evidence indicates that AMPK not only regulates the metabolism of fatty acids and glycogen, but also modulates protein synthesis and cell growth through EF2 and TSC2/mTOR pathways, as well as blood flow via eNOS/nNOS (1).
Product Categories/Family for anti-PRKAA1 antibody	Total protein Ab

NCBI AND UNIPROT INFORMATION

NCBI GI #	94557301
NCBI GeneID	5562
NCBI Accession #	NP_006242.5
NCBI GenBank Nucleotide #	NM_006251.5
UniProt Accession #	Q13131; O00286; Q5D0E1; Q86VS1; Q9UNQ4; A8MTQ6; B2R7E1
Molecular Weight	65,523 Da
NCBI Official Full Name	5'-AMP-activated protein kinase catalytic subunit alpha-1 isoform 1
NCBI Official Synonym Full Names	protein kinase, AMP-activated, alpha 1 catalytic subunit
NCBI Official Symbol	PRKAA1
NCBI Official Synonym Symbols	AMPK; AMPK α 1
NCBI Protein Information	5'-AMP-activated protein kinase catalytic subunit alpha-1
UniProt Protein Name	5'-AMP-activated protein kinase catalytic subunit alpha-1
UniProt Gene Name	PRKAA1
UniProt Synonym Gene Names	AMPK1; AMPK subunit alpha-1; ACACA kinase; HMGCR kinase
UniProt Entry Name	AAPK1_HUMAN

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.