

Datasheet for ABIN5675243
anti-PRKAA1 antibody[Go to Product page](#)

1 Image

Overview

Quantity:	100 µL
Target:	PRKAA1
Reactivity:	Human, Mouse, Rat
Host:	Mouse
Clonality:	Monoclonal
Conjugate:	This PRKAA1 antibody is un-conjugated
Application:	Western Blotting (WB), Immunohistochemistry (Paraffin-embedded Sections) (IHC (p))

Product Details

Immunogen:	Recombinant human AMPK alpha-1 Protein
Clone:	11G3
Isotype:	IgG
Cross-Reactivity:	Human, Mouse, Rat
Purification:	Purified by Protein A.

Target Details

Target:	PRKAA1
Alternative Name:	AMPK alpha-1 (PRKAA1 Products)
Background:	Synonyms: AMPK alpha 1, 5 AMP activated protein kinase alpha 1 catalytic subunit, 5 AMP activated protein kinase catalytic alpha 1 chain, 5' AMP activated protein kinase catalytic

subunit alpha 1, AAPK1, acetyl CoA carboxylase kinase, AI194361, AI450832, AL024255, AMP - activate kinase alpha 1 subunit, AMP-activated protein kinase, catalytic, alpha -1, AMPK 1, AMPK alpha 1 chain, AMPK, AMPK1, AMPKa1, AMPKalpha1, C130083N04Rik, cb116, EC 2.7.11.1, HMG CoA reductase kinase, hormone sensitive lipase kinase, im:7154392, kinase AMPK alpha1, MGC33776, MGC57364, PRKAA 1, PRKAA1, Protein kinase AMP activated alpha 1 catalytic subunit, SNF1-like protein AMPK, wu:fa94C10, AAPK1_HUMAN.

Background: Catalytic 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. Regulates lipid synthesis by phosphorylating and inactivating lipid metabolic enzymes such as ACACA, ACACB, GYS1, HMGCR and LIPE, regulates fatty acid and cholesterol synthesis by phosphorylating acetyl-CoA carboxylase (ACACA and ACACB) and hormone-sensitive lipase (LIPE) enzymes, respectively. Regulates insulin-signaling and glycolysis by phosphorylating IRS1, PFKFB2 and PFKFB3. AMPK stimulates glucose uptake in muscle by increasing the translocation of the glucose transporter SLC2A4/GLUT4 to the plasma membrane, possibly by mediating phosphorylation of TBC1D4/AS160. Regulates transcription and chromatin structure by phosphorylating transcription regulators involved in energy metabolism such as CRTC2/TORC2, FOXO3, histone H2B, HDAC5, MEF2C, MLXIPL/ChREBP, EP300, HNF4A, p53/TP53, SREBF1, SREBF2 and PPARGC1A. Acts as a key regulator of glucose homeostasis in liver by phosphorylating CRTC2/TORC2, leading to CRTC2/TORC2 sequestration in the cytoplasm. In response to stress, phosphorylates 'Ser-36' of histone H2B (H2BS36ph), leading to promote transcription. Acts as a key regulator of cell growth and proliferation by phosphorylating TSC2, RPTOR and ATG1: in response to nutrient limitation, negatively regulates the mTORC1 complex by phosphorylating RPTOR component of the mTORC1 complex and by phosphorylating and activating TSC2. In response to nutrient limitation, promotes autophagy by phosphorylating and activating ULK1. AMPK also acts as a regulator of circadian rhythm by mediating phosphorylation of CRY1, leading to destabilize it. May regulate the Wnt signaling pathway by phosphorylating CTNNB1, leading to stabilize it. Also has tau-protein kinase activity: in response to amyloid beta A4 protein (APP) exposure, activated by CAMKK2, leading to phosphorylation of MAPT/TAU, however the relevance of such data remains unclear in vivo. Also phosphorylates CFTR, EEF2K, KLC1, NOS3 and SLC12A1.

Target Details

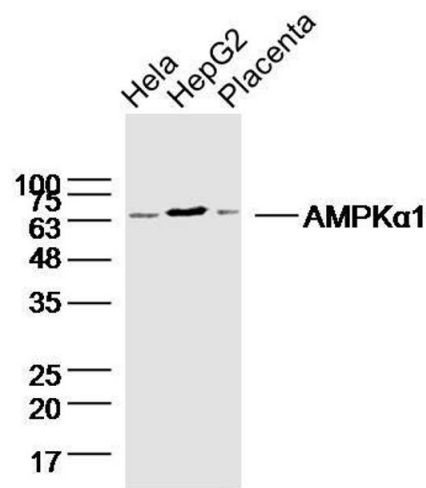
Gene ID:	5562
UniProt:	Q13131
Pathways:	AMPK Signaling , Carbohydrate Homeostasis , Regulation of Carbohydrate Metabolic Process , Warburg Effect

Application Details

Application Notes:	WB 1:300-5000 IHC-P 1:200-400
Restrictions:	For Research Use only

Handling

Format:	Liquid
Concentration:	1 µg/µL
Buffer:	0.01M TBS(pH 7.4) with 1 % BSA, 0.02 % Proclin300 and 50 % Glycerol.
Preservative:	ProClin
Precaution of Use:	This product contains ProClin: a POISONOUS AND HAZARDOUS SUBSTANCE, which should be handled by trained staff only.
Storage:	4 °C,-20 °C
Storage Comment:	Shipped at 4°C. Store at -20°C for one year. Avoid repeated freeze/thaw cycles.
Expiry Date:	12 months



Western Blotting

Image 1. Lane1: HeLa lysates Lane 2: HepG2 lysates Lane 3: mouse placenta lysates probed with AMPK α -1 Polyclonal Antibody, Unconjugated at 1:300 dilution and 4°C overnight incubation. Followed by conjugated secondary antibody incubation at 1:10000 for 60 min at 37°C.