Datasheet for ABIN7142675

anti-PRKAA1 antibody (Catalytic Subunit alpha)

4 Images

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Overview

Quantity:	100 µg
Target:	PRKAA1
Binding Specificity:	AA 325-543, Catalytic Subunit alpha
Reactivity:	Human
Host:	Rabbit
Clonality:	Polyclonal
Conjugate:	This PRKAA1 antibody is un-conjugated
Application:	Western Blotting (WB), Immunohistochemistry (IHC), ELISA, Immunofluorescence (IF)

Product Details

Immunogen:	Recombinant Human 5\\\'-AMP-activated protein kinase catalytic subunit alpha-1 protein (325-543AA)
Isotype:	IgG
Cross-Reactivity:	Human, Mouse
Purification:	>95%, Protein G purified

Target Details

Target:	PRKAA1
Alternative Name:	PRKAA1 (PRKAA1 Products)
Background:	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/ULK1: 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 ATG1/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. Aliases: 5 AMP activated protein kinase alpha 1catalytic subunit antibody, 5 AMP activated protein kinase catalytic alpha 1 chain antibody, 5' AMP activated protein kinase catalytic subunit alpha 1 antibody, 5'-AMP-activated protein kinase catalytic subunit alpha-1 antibody, AAPK1 antibody, AAPK1_HUMAN antibody, ACACA kinase antibody, acetyl CoA carboxylase kinase antibody, AI194361 antibody, AI450832 antibody, AL024255 antibody, AMP -activate kinase alpha 1 subunit antibody, AMP-activate kinase alpha 1 subunit antibody, AMP-activated protein kinase, catalytic, alpha -1 antibody, AMPK 1 antibody, AMPK alpha 1 antibody, AMPK alpha 1 chain antibody, AMPK antibody, AMPK subunit alpha 1 antibody, AMPK subunit alpha-1

Target Details

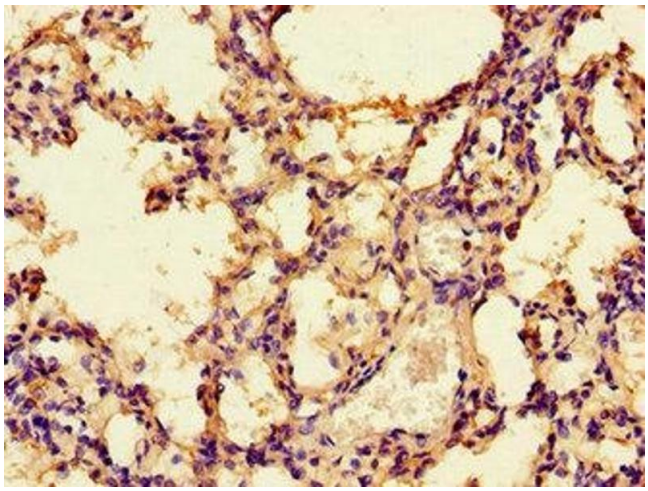
	antibody, AMPK1 antibody, AMPKa1 antibody, AMPKalpha1 antibody, C130083N04Rik antibody, cb116 antibody, EC 2.7.11.1 antibody, HMG CoA reductase kinase antibody, HMGCR kinase antibody, hormone sensitive lipase kinase antibody, Hydroxymethylglutaryl CoA reductase kinase antibody, im:7154392 antibody, kinase AMPK alpha1 antibody, MGC33776 antibody, MGC57364 antibody, OTTHUMP00000161795 antibody, OTTHUMP00000161796 antibody, PRKAA 1 antibody, PRKAA1 antibody, Protein kinase AMP activated alpha 1 catalytic subunit antibody, SNF1-like protein AMPK antibody, SNF1A antibody, Tau protein kinase PRKAA1 antibody, wu:fa94c10 antibody
UniProt:	Q13131
Pathways:	AMPK Signaling, Carbohydrate Homeostasis, Regulation of Carbohydrate Metabolic Process, Warburg Effect

Application Details

Application Notes:	Recommended dilution: WB:1:1000-1:5000, IHC:1:20-1:200, IF:1:50-1:200,
Restrictions:	For Research Use only

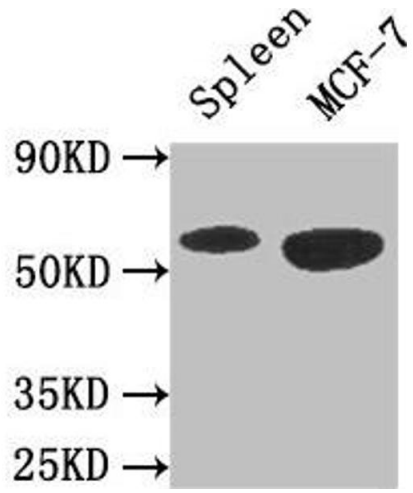
Handling

Format:	Liquid
Buffer:	Preservative: 0.03 % Proclin 300 Constituents: 50 % Glycerol, 0.01M PBS, PH 7.4
Preservative:	ProClin
Precaution of Use:	This product contains ProClin: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.
Storage:	-20 °C,-80 °C
Storage Comment:	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.



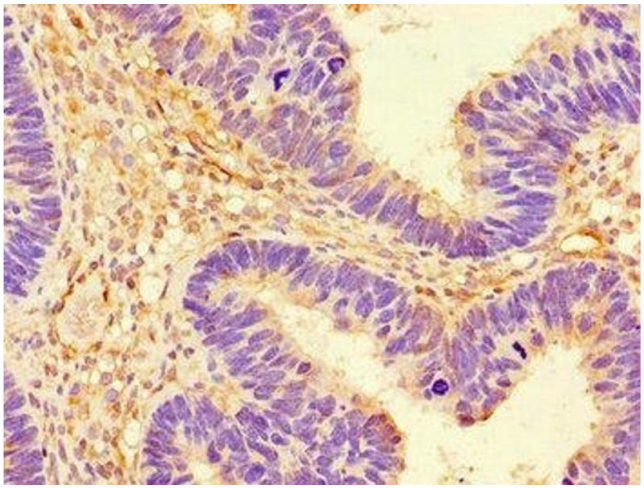
Immunohistochemistry

Image 1. Immunohistochemistry of paraffin-embedded human lung tissue using ABIN7142675 at dilution of 1:100



Western Blotting

Image 2. Western Blot Positive WB detected in: Mouse spleen tissue, MCF-7 whole cell lysate All lanes: AMPK1 antibody at 3 µg/mL Secondary Goat polyclonal to rabbit IgG at 1/50000 dilution Predicted band size: 65, 66 kDa Observed band size: 65 kDa



Immunohistochemistry

Image 3. Immunohistochemistry of paraffin-embedded human ovarian cancer using ABIN7142675 at dilution of 1:100

Please check the product details page for more images. Overall 4 images are available for ABIN7142675.