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Datasheet for ABIN7142660

anti-PRKAA2 antibody (Catalytic Subunit alpha)

3 Images

Overview

Quantity:	100 µg
Target:	PRKAA2
Binding Specificity:	AA 350-400, Catalytic Subunit alpha
Reactivity:	Human
Host:	Rabbit
Clonality:	Polyclonal
Conjugate:	This PRKAA2 antibody is un-conjugated
Application:	Western Blotting (WB), ELISA, Immunohistochemistry (IHC), Immunofluorescence (IF)

Product Details

Immunogen:	Recombinant Human 5'-AMP-activated protein kinase catalytic subunit alpha-2 protein (350-400AA)
Isotype:	IgG
Cross-Reactivity:	Human, Mouse
Purification:	>95%, Protein G purified

Target Details

Target:	PRKAA2
Alternative Name:	PRKAA2 (PRKAA2 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. Involved in insulin receptor/INSR internalization (PubMed:25687571). 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 phosphorylates CFTR, EEF2K, KLC1, NOS3 and SLC12A1. Plays an important role in the differential regulation of pro-autophagy (composed of PIK3C3, BECN1, PIK3R4 and UVRAG or ATG14) and non-autophagy (composed of PIK3C3, BECN1 and PIK3R4) complexes, in response to glucose starvation. Can inhibit the non-autophagy complex by phosphorylating PIK3C3 and can activate the pro-autophagy complex by phosphorylating BECN1 (By similarity). Aliases: 5'-AMP-activated protein kinase catalytic subunit alpha-2 antibody, AAMPK2_HUMAN antibody, ACACA kinase antibody, Acetyl CoA carboxylase kinase antibody, Acetyl-CoA carboxylase kinase antibody, AMPK alpha 2 chain antibody, AMPK subunit alpha-2 antibody, AMPK2 antibody, AMPKa2 antibody, AMPKalpha2 antibody, HMGCR kinase antibody, Hydroxymethylglutaryl CoA reductase kinase antibody, Hydroxymethylglutaryl-CoA reductase

Target Details

kinase antibody, PRKAA antibody, PRKAA2 antibody, Protein kinase AMP activated alpha 2 catalytic subunit antibody, Protein kinase AMP activated catalytic subunit alpha 2 antibody

UniProt: [P54646](#)

Pathways: [AMPK Signaling](#), [Carbohydrate Homeostasis](#), [Chromatin Binding](#), [Regulation of Carbohydrate Metabolic Process](#), [Warburg Effect](#)

Application Details

Application Notes: Recommended dilution: WB:1:2000-1:5000, 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

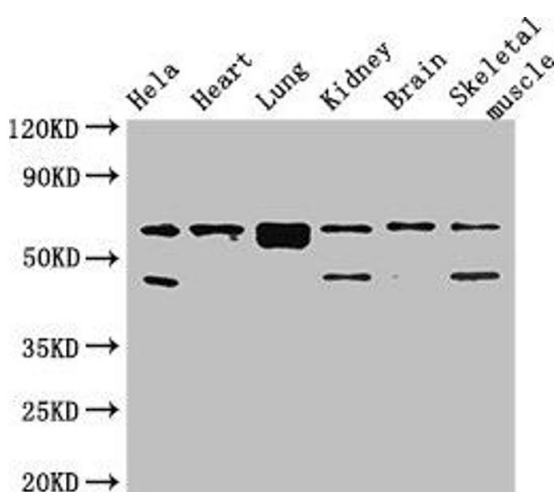
Preservative: ProClin

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

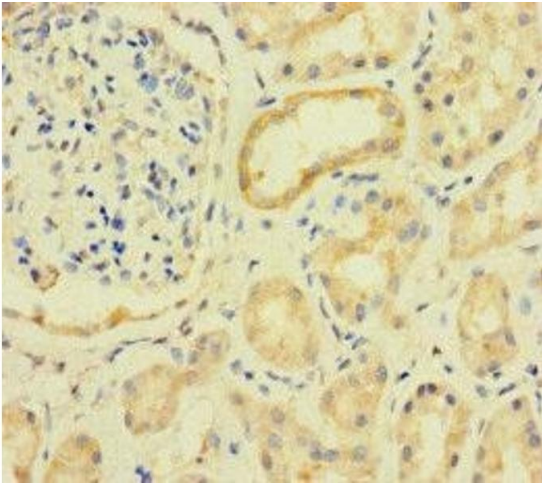
Storage Comment: Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.

Images



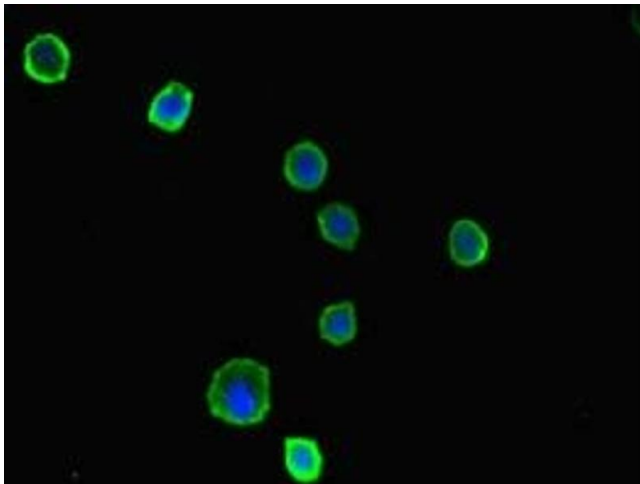
Western Blotting

Image 1. Western Blot Positive WB detected in: HeLa whole cell lysate, Mouse heart tissue, Mouse lung tissue, Mouse kidney tissue, Mouse brain tissue, Mouse skeletal muscle tissue All lanes: PRKAA2 antibody at 2.7 µg/mL Secondary Goat polyclonal to rabbit IgG at 1/50000 dilution Predicted band size: 63 kDa Observed band size: 63, 48 kDa



Immunohistochemistry

Image 2. Immunohistochemistry of paraffin-embedded human kidney tissue using ABIN7142660 at dilution of 1:100



Immunofluorescence

Image 3. Immunofluorescent analysis of MCF-7 cells using ABIN7142660 at dilution of 1:100 and Alexa Fluor 488-conjugated AffiniPure Goat Anti-Rabbit IgG(H+L)