



Datasheet for ABIN680458
anti-PRKAA2 antibody (AA 351-450)



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4 Images

2 Publications

Overview

Quantity:	100 µL
Target:	PRKAA2
Binding Specificity:	AA 351-450
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Conjugate:	This PRKAA2 antibody is un-conjugated
Application:	Western Blotting (WB), ELISA, Flow Cytometry (FACS), Immunohistochemistry (Paraffin-embedded Sections) (IHC (p)), Immunofluorescence (Cultured Cells) (IF (cc)), Immunofluorescence (Paraffin-embedded Sections) (IF (p)), Immunohistochemistry (Frozen Sections) (IHC (fro))

Product Details

Immunogen:	KLH conjugated synthetic peptide derived from human AMPK alpha 2
Isotype:	IgG
Cross-Reactivity:	Human, Mouse, Rat
Predicted Reactivity:	Dog,Cow,Sheep,Pig,Rabbit
Purification:	Purified by Protein A.

Target Details

Target:	PRKAA2
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Target Details

Alternative Name: AMPK alpha 2 ([PRKAA2 Products](#))

Background: Synonyms: AMPK, AMPK2, PRKAA, AMPKa2, 5'-AMP-activated protein kinase catalytic subunit alpha-2, AMPK subunit alpha-2, Acetyl-CoA carboxylase kinase, ACACA kinase, Hydroxymethylglutaryl-CoA reductase kinase, HMGCR kinase, PRKAA2

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.

Gene ID: 5563

UniProt: [P54646](#)

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

Application Details

Application Notes: WB 1:300-5000

Application Details

ELISA 1:500-1000

FCM 1:20-100

IHC-P 1:200-400

IHC-F 1:100-500

IF(IHC-P) 1:50-200

IF(IHC-F) 1:50-200

IF(ICC) 1:50-200

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

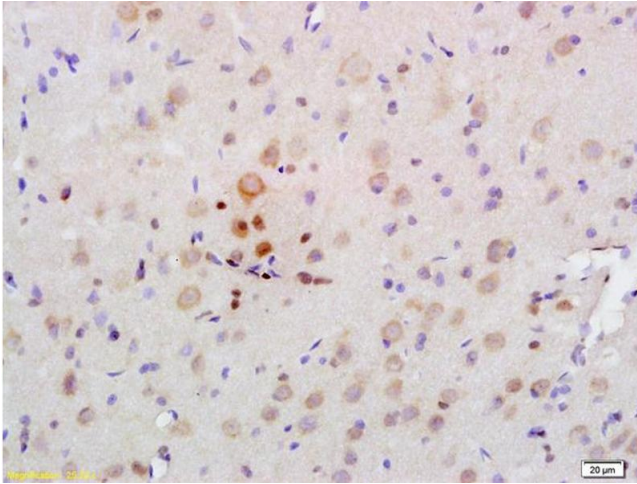
Storage Comment: Shipped at 4°C. Store at -20°C for one year. Avoid repeated freeze/thaw cycles.

Expiry Date: 12 months

Publications

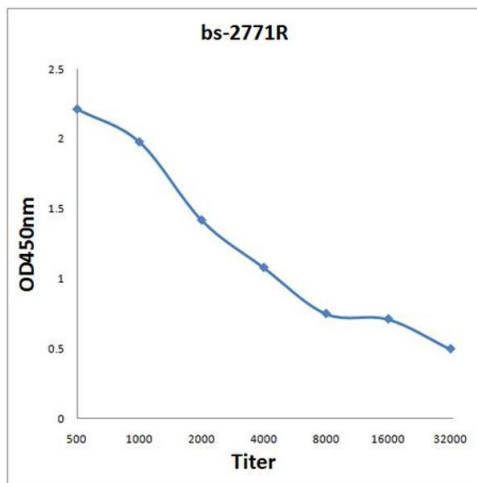
Product cited in: Li, Sharma, Yin, Tan, Xiao: "Metformin ameliorates hepatic steatosis and improves the induction of autophagy in HFD-induced obese mice." in: **Molecular medicine reports**, Vol. 16, Issue 1, pp. 680-686, (2017) ([PubMed](#)).

Fu, Zhu, Dodson, Du: "AMP-activated protein kinase stimulates Warburg-like glycolysis and activation of satellite cells during muscle regeneration." in: **The Journal of biological chemistry**, Vol. 290, Issue 44, pp. 26445-56, (2015) ([PubMed](#)).



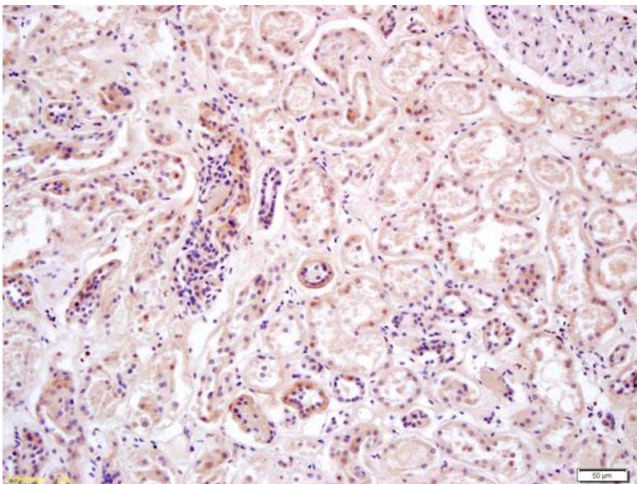
Immunohistochemistry

Image 1. Formalin-fixed and paraffin embedded rat brain labeled with Rabbit Anti PRKAA2/AMPK alpha 2 Polyclonal Antibody, Unconjugated (ABIN680458) at 1:200 followed by conjugation to the secondary antibody and DAB staining



ELISA

Image 2. Antigen: 0.2 µg/100 µL Primary: Antiserum, 1:500, 1:1000, 1:2000, 1:4000, 1:8000, 1:16000, 1:32000; Secondary: HRP conjugated Goat-Anti-Rabbit IgG at 1: 5000; TMB staining; Read the data in MicroplateReader by 450



Immunohistochemistry

Image 3. Formalin-fixed and paraffin embedded human kidney labeled with Anti-PRKAA2/AMPK alpha 2 Polyclonal Antibody, Unconjugated (ABIN680458) at 1:200 followed by conjugation to the secondary antibody and DAB staining

Please check the [product details page](#) for more images. Overall 4 images are available for ABIN680458.