

ARG51172 anti-AMPK alpha 1 / 2 antibody

Package: 100 µl, 50 µl
Store at: -20°C

Summary

Product Description	Rabbit Polyclonal antibody recognizes AMPK alpha 1 / 2
Tested Reactivity	Hu, Ms, Rat
Tested Application	ICC/IF, IHC-P, WB
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Target Name	AMPK alpha 1 / 2
Species	Human
Immunogen	Peptide sequence around aa. 172~176/170~174 (L-R-T-S-C) derived from Human AMPKα1/AMPKα2.
Conjugation	Un-conjugated
Alternate Names	AMPK; Acetyl-CoA carboxylase kinase; ACACA kinase; 5'-AMP-activated protein kinase catalytic subunit alpha-2; EC 2.7.11.31; EC 2.7.11.27; HMGCR kinase; PRKAA; AMPK2; EC 2.7.11.1; AMPK subunit alpha-2; AMPKα2; Hydroxymethylglutaryl-CoA reductase kinase

Application Instructions

Application table	Application	Dilution
	ICC/IF	1:100 - 1:200
	IHC-P	1:50 - 1:100
	WB	1:500 - 1:1000
Application Note	* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.	

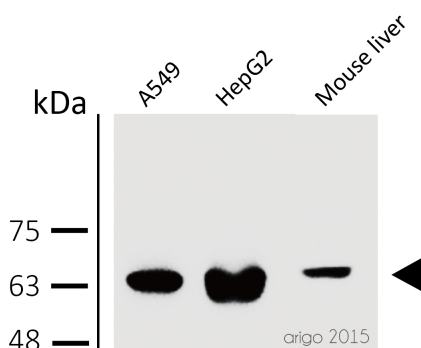
Properties

Form	Liquid
Purification	Antibodies were produced by immunizing rabbits with KLH-conjugated synthetic peptide. Antibodies were purified by affinity-chromatography using epitope-specific peptide.
Buffer	PBS (without Mg ²⁺ and Ca ²⁺ , pH 7.4), 150mM NaCl, 0.02% Sodium azide and 50% Glycerol.
Preservative	0.02% Sodium azide
Stabilizer	50% Glycerol
Concentration	1 mg/ml
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.

Bioinformation

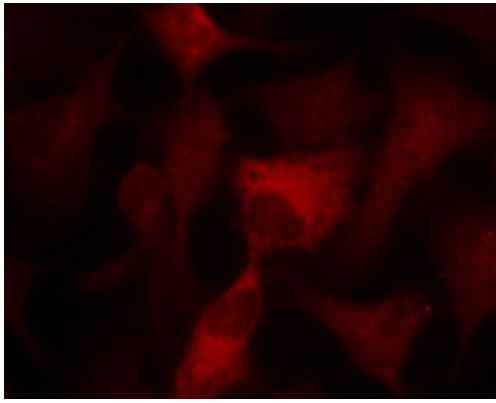
Gene Symbol	PRKAA2
Gene Full Name	protein kinase, AMP-activated, alpha 2 catalytic subunit
Background	Responsible for the regulation of fatty acid synthesis by phosphorylation of acetyl-CoA carboxylase. It also regulates cholesterol synthesis via phosphorylation and inactivation of hormone-sensitive lipase and hydroxymethylglutaryl-CoA reductase. Appears to act as a metabolic stress-sensing protein kinase switching off biosynthetic pathways when cellular ATP levels are depleted and when 5'-AMP rises in response to fuel limitation and/or hypoxia. This is a catalytic subunit.
Function	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. [UniProt]
Highlight	Related Antibody Duos and Panels: ARG30182 AMPK-ACC pathway Antibody Panel Related products: AMPK alpha antibodies ; AMPK alpha Duos / Panels ; Anti-Rabbit IgG secondary antibodies ;
Research Area	Cancer antibody; Cell Biology and Cellular Response antibody; Metabolism antibody; Neuroscience antibody; Signaling Transduction antibody; AMPK-ACC pathway antibody
Calculated Mw PTM	62 kDa Ubiquitinated. Phosphorylated at Thr-172 by STK11/LKB1 in complex with STE20-related adapter-alpha (STRADA) pseudo kinase and CAB39. Also phosphorylated at Thr-172 by CAMKK2; triggered by a rise in intracellular calcium ions, without detectable changes in the AMP/ATP ratio. CAMKK1 can also phosphorylate Thr-172, but at much lower level. Dephosphorylated by protein phosphatase 2A and 2C (PP2A and PP2C). Phosphorylated by ULK1; leading to negatively regulate AMPK activity and suggesting the existence of a regulatory feedback loop between ULK1 and AMPK. Dephosphorylated by PPM1A and PPM1B at Thr-172 (mediated by STK11/LKB1).

Images



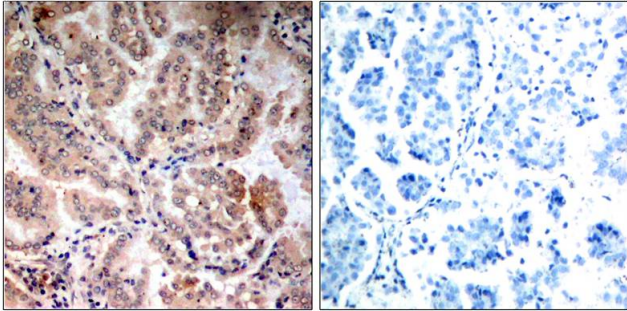
ARG51172 anti-AMPK alpha 1/2 antibody WB image

Western blot: 30 µg of A549, HepG2, and Mouse liver cell line lysates stained with ARG51172 anti-AMPK alpha 1/2 antibody at 1:500 dilution.



ARG51172 anti-AMPK alpha 1/2 antibody ICC/IF image

Immunofluorescence: methanol-fixed HeLa cells stained with ARG51172 anti-AMPK alpha 1/2 antibody.



ARG51172 anti-AMPK alpha 1/2 antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Human breast carcinoma tissue stained with ARG51172 anti-AMPK alpha 1/2 antibody (left) or the same antibody preincubated with blocking peptide (right).