

## ARG42619 anti-AMPK alpha 1 phospho (Thr183) + AMPK alpha 2 phospho (Thr172) antibody

Package: 100 µl

Store at: -20°C

### Summary

Product Description	Rabbit Polyclonal antibody recognizes AMPK alpha 1 phospho (Thr183) + AMPK alpha 2 phospho (Thr172)
Tested Reactivity	Hu, Ms, Rat
Tested Application	WB
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Target Name	AMPK alpha 1 + AMPK alpha 2
Species	Human
Immunogen	Phosphospecific peptide around Thr183 of Human AMPK alpha 1. (Also around Thr172 of Human AMPK alpha 2)
Conjugation	Un-conjugated
Alternate Names	<p>AMPK alpha 1: AMPK; Acetyl-CoA carboxylase kinase; ACACA kinase; EC 2.7.11.26; EC 2.7.11.31; 5'-AMP-activated protein kinase catalytic subunit alpha-1; EC 2.7.11.27; HMGCR kinase; Tau-protein kinase PRKAA1; EC 2.7.11.1; Hydroxymethylglutaryl-CoA reductase kinase; AMPKa1; AMPK subunit alpha-1</p> <p>AMPK alpha 2: 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; AMPKa2; Hydroxymethylglutaryl-CoA reductase kinase</p>

### Application Instructions

Application table	<table> <tr> <th>Application</th><th>Dilution</th></tr> <tr> <td>WB</td><td>1:500 - 1:2000</td></tr> </table>	Application	Dilution	WB	1:500 - 1:2000
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WB	1:500 - 1:2000				
Application Note	* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.				
Positive Control	Mouse heart				
Observed Size	~ 62 kDa				

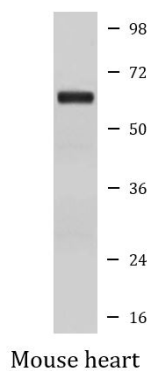
### Properties

Form	Liquid
Purification	Affinity purified.
Buffer	PBS (pH 7.4), 150 mM NaCl, 0.02% Sodium azide and 50% Glycerol.
Preservative	0.02% Sodium azide

Stabilizer	50% Glycerol
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.
Note	For laboratory research only, not for drug, diagnostic or other use.

## Bioinformation

Gene Symbol	PRKAA1; PRKAA2
Gene Full Name	protein kinase AMP-activated catalytic subunit alpha 1 protein kinase AMP-activated catalytic subunit alpha 2
Background	<p>AMPK alpha 1: The protein encoded by this gene belongs to the ser/thr protein kinase family. It is the catalytic subunit of the 5'-prime-AMP-activated protein kinase (AMPK). AMPK is a cellular energy sensor conserved in all eukaryotic cells. The kinase activity of AMPK is activated by the stimuli that increase the cellular AMP/ATP ratio. AMPK regulates the activities of a number of key metabolic enzymes through phosphorylation. It protects cells from stresses that cause ATP depletion by switching off ATP-consuming biosynthetic pathways. Alternatively spliced transcript variants encoding distinct isoforms have been observed. [provided by RefSeq, Jul 2008]</p> <p>AMPK alpha 2: The protein encoded by this gene is a catalytic subunit of the AMP-activated protein kinase (AMPK). AMPK is a heterotrimer consisting of an alpha catalytic subunit, and non-catalytic beta and gamma subunits. AMPK is an important energy-sensing enzyme that monitors cellular energy status. In response to cellular metabolic stresses, AMPK is activated, and thus phosphorylates and inactivates acetyl-CoA carboxylase (ACC) and beta-hydroxy beta-methylglutaryl-CoA reductase (HMGCR), key enzymes involved in regulating de novo biosynthesis of fatty acid and cholesterol. Studies of the mouse counterpart suggest that this catalytic subunit may control whole-body insulin sensitivity and is necessary for maintaining myocardial energy homeostasis during ischemia. [provided by RefSeq, Jul 2008]</p>
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. [UniProt]
Calculated Mw	62 kDa
PTM	<p>AMPK alpha 1: Ubiquitinated.</p> <p>Phosphorylated at Thr-183 by STK11/LKB1 in complex with STE20-related adapter-alpha (STRADA) pseudo kinase and CAB39. Also phosphorylated at Thr-183 by CAMKK2; triggered by a rise in intracellular calcium ions, without detectable changes in the AMP/ATP ratio. CAMKK1 can also phosphorylate Thr-183, but at a much lower level. Dephosphorylated by protein phosphatase 2A and 2C (PP2A and PP2C). Phosphorylated by ULK1 and ULK2; leading to negatively regulate AMPK activity and suggesting the existence of a regulatory feedback loop between ULK1, ULK2 and AMPK. Dephosphorylated by PPM1A and PPM1B. [UniProt]</p> <p>AMPK alpha 2: Ubiquitinated.</p> <p>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). [UniProt]</p>
Cellular Localization	AMPK alpha 1 and 2: Cytoplasm. Nucleus. Note=In response to stress, recruited by p53/TP53 to specific promoters. [UniProt]



ARG42619 anti-AMPK alpha 1 phospho (Thr183) + AMPK alpha 2 phospho (Thr172) antibody WB image

Western blot: Mouse heart lysate stained with ARG42619 anti-AMPK alpha 1 phospho (Thr183) + AMPK alpha 2 phospho (Thr172) antibody.