abcam

Product datasheet

Anti-AMPK gamma 1 antibody [Y307] - BSA and Azide free ab247251

KO VALIDATED Recombinant RabMAb

4 Images

Overview

Product name	Anti-AMPK gamma 1 antibody [Y307] - BSA and Azide free
Description	Rabbit monoclonal [Y307] to AMPK gamma 1 - BSA and Azide free
Host species	Rabbit
Tested applications	**Suitable for:** ICC, IHC-P, WB
Species reactivity	**Reacts with:** Human
Immunogen	Synthetic peptide within Human AMPK gamma 1 aa 1-100. The exact sequence is proprietary.
Epitope	ab247251 reacts with an epitope located in the N terminal region of AMPK gamma 1.
General notes	ab247251 is the carrier-free version of ab32382 This format is designed for use in antibody labeling, including fluorochromes, metal isotopes, oligonucleotides, enzymes. Our carrier-free formats are supplied in a buffer free of BSA, sodium azide and glycerol for higher conjugation efficiency. Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with <1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold. Ab247251 is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm. *Maxpar® is a trademark of Fluidigm Canada Inc.* Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information. This product is a recombinant monoclonal antibody, which offers several advantages including: - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production For more information see here. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents. Reproducibility is key to advancing scientific discovery and accelerating scientists' next

breakthrough.

Abcam is leading the way with our range of recombinant antibodies, knockout-validated antibodies and knockout cell lines, all of which support improved reproducibility.

We are also planning to innovate the way in which we present recommended applications and species on our product datasheets, so that only applications & species that have been tested in our own labs, our suppliers or by selected trusted collaborators are covered by our Abpromise™ guarantee.

In preparation for this, we have started to update the applications & species that this product is Abpromise guaranteed for.

We are also updating the applications & species that this product has been "predicted to work with," however this information is not covered by our Abpromise guarantee.

Applications & species from publications and Abreviews that have not been tested in our own labs or in those of our suppliers are not covered by the Abpromise guarantee.

Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, as well as customer reviews and Q&As.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C. Do Not Freeze.
Storage buffer	pH: 7.2 Constituent: PBS
Carrier free	Yes
Purity	Protein A purified
Clonality	Monoclonal
Clone number	Y307
Isotype	IgG

Applications

Our Abpromise guarantee covers the use of **ab247251** in the following tested applications.

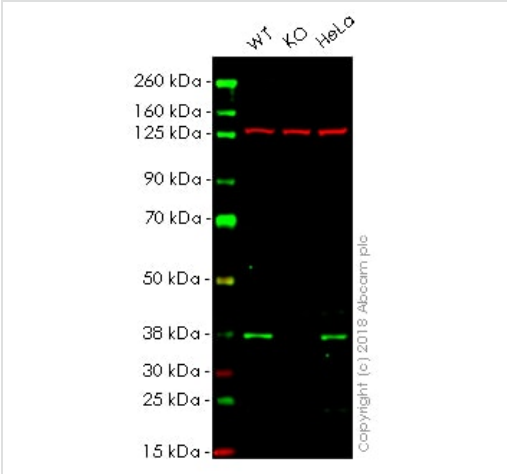
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
ICC		Use at an assay dependent concentration.
IHC-P		Use at an assay dependent concentration. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.
WB		Use at an assay dependent concentration. Predicted molecular weight: 38 kDa.

Target

Function	AMP/ATP-binding 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. Gamma non-catalytic subunit mediates binding to AMP, ADP and ATP, leading to activate or inhibit AMPK: AMP-binding results in allosteric activation of alpha catalytic subunit (PRKAA1 or PRKAA2) both by inducing phosphorylation and preventing dephosphorylation of catalytic subunits. ADP also stimulates phosphorylation, without stimulating already phosphorylated catalytic subunit. ATP promotes dephosphorylation of catalytic subunit, rendering the AMPK enzyme inactive.
Sequence similarities	Belongs to the 5'-AMP-activated protein kinase gamma subunit family. Contains 4 CBS domains.
Domain	The AMPK pseudosubstrate motif resembles the sequence around sites phosphorylated on target proteins of AMPK, except the presence of a non-phosphorylatable residue in place of Ser. In the absence of AMP this pseudosubstrate sequence may bind to the active site groove on the alpha subunit (PRKAA1 or PRKAA2), preventing phosphorylation by the upstream activating kinase STK11/LKB1. The CBS domains mediate binding to AMP, ADP and ATP. 2 sites bind either AMP or ATP, whereas a third site contains a tightly bound AMP that does not exchange. Under physiological conditions AMPK mainly exists in its inactive form in complex with ATP, which is much more abundant than AMP.
Post-translational modifications	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.

Images



Western blot - Anti-AMPK gamma 1 antibody [Y307] - BSA and Azide free (ab247251)

All lanes : Anti-AMPK gamma 1 antibody [Y307] (ab32382) at 1/1000 dilution

Lane 1 : Wild-type HAP1 whole cell lysate

Lane 2 : PRKAG1 (AMPK gamma 1) knockout HAP1 whole cell lysate

Lane 3 : HeLa whole cell lysate

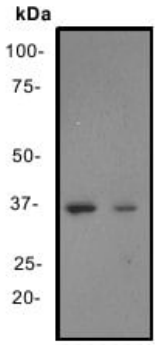
Lysates/proteins at 20 µg per lane.

Predicted band size: 38 kDa

This data was developed using ab32382, the same antibody clone in a different buffer formulation.

Lanes 1 - 3: Merged signal (red and green). Green - ab32382 observed at 38 kDa. Red - loading control, Mouse anti-Vinculin, observed at 125 kDa.

ab32382 was shown to recognize AMPK gamma 1 in wild-type HAP1 cells as signal was lost at the expected MW in PRKAG1 (AMPK gamma 1) knockout cells. Additional cross-reactive bands were observed in the wild-type and knockout cells. Wild-type and PRKAG1 (AMPK gamma 1) knockout samples were subjected to SDS-PAGE. ab32382 and Mouse anti-Vinculin (ab9484 loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.



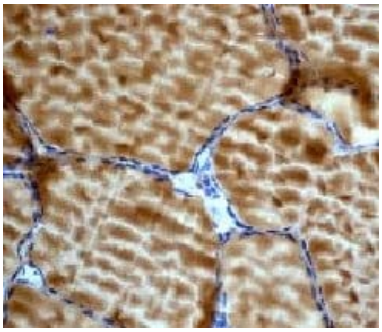
Western blot - Anti-AMPK gamma 1 antibody [Y307] - BSA and Azide free (ab247251)

All lanes : Anti-AMPK gamma 1 antibody [Y307] (ab32382) at 1/2000 dilution

Lane 1 : Jurkat cell lysate
Lane 2 : HeLa cell lysate

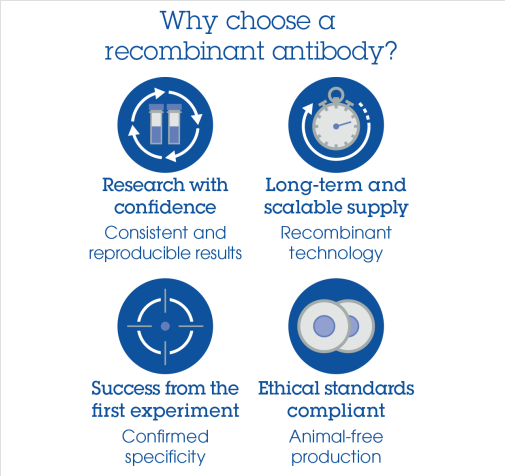
Predicted band size: 38 kDa
Observed band size: 37 kDa
why is the actual band size different from the predicted?

This data was developed using ab32382, the same antibody clone in a different buffer formulation.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-AMPK gamma 1 antibody [Y307] - BSA and Azide free (ab247251)

This data was developed using ab32382, the same antibody clone in a different buffer formulation.This image shows paraffin embedded human skeletal muscle stained with 1/250 ab23282. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Anti-AMPK gamma 1 antibody [Y307] - BSA and Azide free (ab247251)

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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