

AMPKα1/2 (Phospho Thr183/172) Rabbit pAb

CatalogNo: YP0575 Orthogonal Validated [9]

Key Features

Host Species Reactivity **Applications** IF,WB,IHC,ELISA

 Rabbit Human, Mouse, Rat, Monkey, Pig, Marsupenaeus

japonicus

MW Isotype 63kD (Observed) IgG

Recommended Dilution Ratios

IF 1:50-200

WB 1:500-1:2000 IHC 1:100-1:300 **ELISA 1:40000**

Not yet tested in other applications

Storage

Storage* -15°C to -25°C/1 year(Do not lower than -25°C)

Formulation Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

I Basic Information

Clonality Polyclonal

Immunogen Information

The antiserum was produced against synthesized peptide derived from human AMPK **Immunogen**

alpha around the phosphorylation site of Thr172. AA range:140-189

Specificity

This antibody detects endogenous AMPK $\alpha1$ only when phosphorylated at threonine 183 and endogenous AMPK $\alpha2$ only when phosphorylated at threonine 172. The antibody does not detect the regulatory β or γ subunits. The name of modified sites may be influenced by many factors, such as species (the modified site was not originally found in human samples) and the change of protein sequence (the previous protein sequence is incomplete, and the protein sequence may be prolonged with the development of protein sequencing technology). When naming, we will use the "numbers" in historical reference to keep the sites consistent with the reports. The antibody binds to the following modification sequence (lowercase letters are modification sites):LRtSC

| Target Information

Gene name

AAPK1/AAPK2

Protein Name

5'-AMP-activated protein kinase catalytic subunit alpha-1/2

Organism	Gene ID	UniProt ID
Human	<u>5562; 5563;</u>	Q13131; P54646;
Mouse	<u>105787; 108079;</u>	
Rat	<u>65248; 78975</u> ;	<u>P54645; Q09137;</u>

Cellular Localization

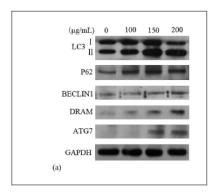
Cytoplasm . Nucleus . In response to stress, recruited by p53/TP53 to specific promoters. .

Tissue specificity Brain,Intestine,Liver,Mammary gland,Platelet,Testis

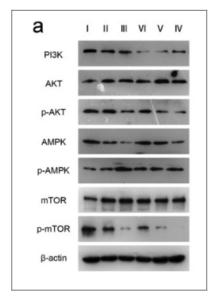
Function

Catalytic activity:ATP + a protein = ADP + a phosphoprotein.,cofactor:Magnesium.,enzyme regulation:Binding of AMP results in allosteric activation, inducing phosphorylation on Thr-174 by STK11 in complex with STE20-related adapter-alpha (STRAD alpha) pseudo kinase and CAB39. Also activated by phosphorylation by CAMKK2 triggered by a rise in intracellular calcium ions, without detectable changes in the AMP/ATP ratio., Function: 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., sequence Caution: Translation N-terminally shortened., similarity: Belongs to the protein kinase superfamily., similarity: Belongs to the protein kinase superfamily. CAMK Ser/Thr protein kinase family. SNF1 subfamily..similarity:Contains 1 protein kinase domain..subunit:Heterotrimer of an alpha catalytic subunit, a beta and a gamma non-catalytic subunits. Interacts with FNIP1 and FNIP2.,

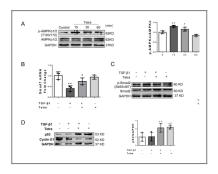
Validation Data



New fungal protein from Pleurotus ferulae lanzi induces AMPK-mediated autophagy and G1-phase cell cycle arrest in A549 lung cancer cells. Zhao-Kun Liu WB Human 1:250 A549 cell



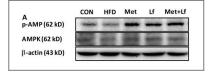
Kang, Min, et al. "Autophagy was activated against the damages of placentas caused by nano-copper oral exposure." Ecotoxicology and Environmental Safety 220 (2021): 112364.



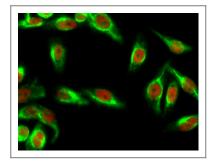
Gao, L., Wang, Ly., Liu, Zq. et al. TNAP inhibition attenuates cardiac fibrosis induced by myocardial infarction through deactivating TGF- β 1/Smads and activating P53 signaling pathways. Cell Death Dis 11, 44 (2020)



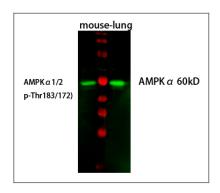
Guo, Hui-Hui, et al. "Liver-target nanotechnology facilitates berberine to ameliorate cardio-metabolic diseases." Nature communications 10.1 (2019): 1981.



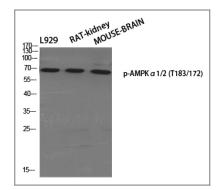
Min, Qing-Qing, et al. "Effects of Metformin Combined with Lactoferrin on Lipid Accumulation and Metabolism in Mice Fed with High-Fat Diet." Nutrients 10.11 (2018): 1628.



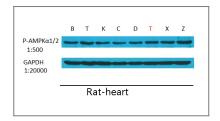
Immunofluorescence analysis of Hela cell. 1,AMPK α 1/2 (phospho Thr183/172) Polyclonal Antibody(green) was diluted at 1:200(4° overnight). (red) was diluted at 1:200(4° overnight). 2, Goat Anti Rabbit Alexa Fluor 488 Catalog:RS3211 was diluted at 1:1000(room temperature, 50min). Goat Anti Mouse Alexa Fluor 594 Catalog:RS3608 was diluted at 1:1000(room temperature, 50min).



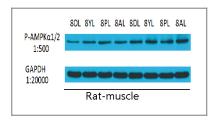
Western Blot analysis of mouse-lung cells using primary antibody diluted at $1:1000(4^{\circ}\text{C overnight})$. Secondary antibody:Goat Anti-rabbit IgG IRDye 800(diluted at 1:5000, 25°C , 1 hour). Cell lysate was extracted by Minute Minute Plasma Membrane Protein Isolation and Cell Fractionation Kit(SM-005, Inventbiotech,MN,USA).



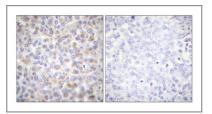
Western Blot analysis of various cells using Phospho-AMPK α 1/2 (T183/172) Polyclonal Antibody diluted at 1:500



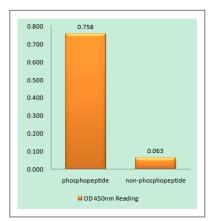
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Immunohistochemical analysis of paraffin-embedded Human breast cancer. Antibody was diluted at 1:100(4° overnight). High-pressure and temperature Tris-EDTA,pH8.0 was used for antigen retrieval. Negetive contrl (right) obtaned from antibody was pre-absorbed by immunogen peptide.



Enzyme-Linked Immunosorbent Assay (Phospho-ELISA) for Immunogen Phosphopeptide (Phospho-left) and Non-Phosphopeptide (Phospho-right), using AMPK alpha (Phospho-Thr172) Antibody

| Contact information

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Please scan the QR code to access additional product information: AMPKα1/2 (Phospho Thr183/172) Rabbit pAb

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