

AMPK α 1/2 (Phospho Thr183/172) Rabbit pAb

CatalogNo: YP0575

Orthogonal Validated 

Key Features

Host Species

- Rabbit

Reactivity

- Human, Mouse, Rat, Monkey, Pig, Marsupenaeus japonicus

Applications

- IF, WB, IHC, ELISA

MW

- 63kD
(Observed)

Isotype

- 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.

Basic Information

Clonality

Polyclonal

Immunogen Information

Immunogen

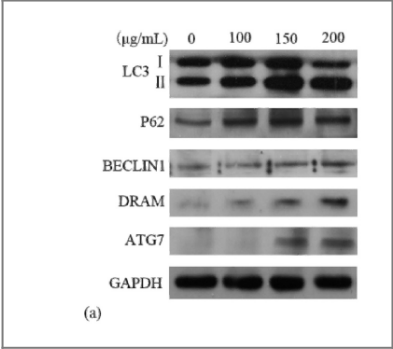
The antiserum was produced against synthesized peptide derived from human AMPK alpha around the phosphorylation site of Thr172. AA range:140-189

Specificity This antibody detects endogenous AMPKα1 only when phosphorylated at threonine 183 and endogenous AMPKα2 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 When naming, we will use the "numbers" in historical reference to keep the sites consistent with the reports.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

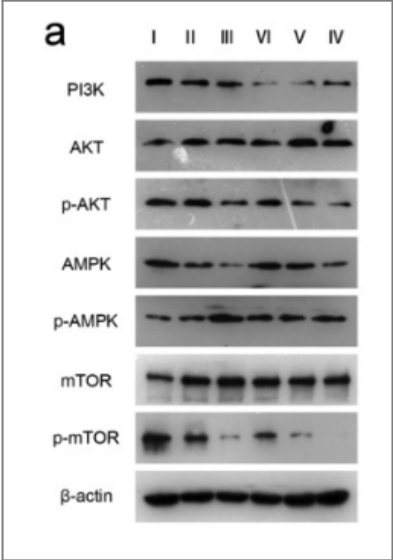
| Target Information

Gene name	AAPK1/AAPK2		
Protein Name	5'-AMP-activated protein kinase catalytic subunit alpha-1/2		
	Organism	Gene ID	UniProt ID
	Human	5562 ; 5563 ;	Q13131 ; P54646 ;
	Mouse	105787 ; 108079 ;	
	Rat	65248 ; 78975 ;	P54645 ; Q09137 ;
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.,		

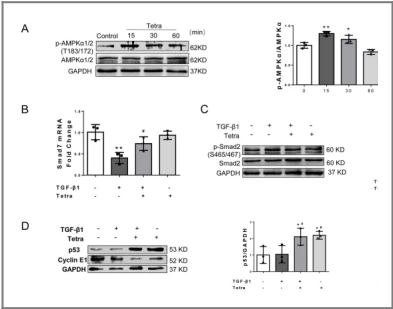
| Validation Data



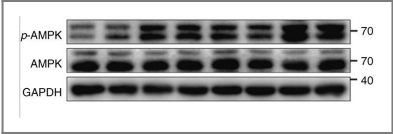
New fungal protein from *Pleurotus ferulae lanzi* induces AMPK-mediated autophagy and G1-phase cell cycle arrest in A549 lung cancer cells. Zhao-Kun Liu WB Human 1:250 A549 cell



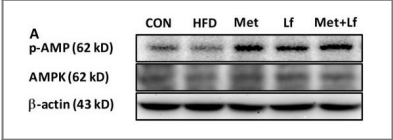
Kang, Min, et al. "Autophagy was activated against the damages of placentas caused by nano-copper oral exposure." *Ecotoxicology and Environmental Safety* 220 (2021): 112364.



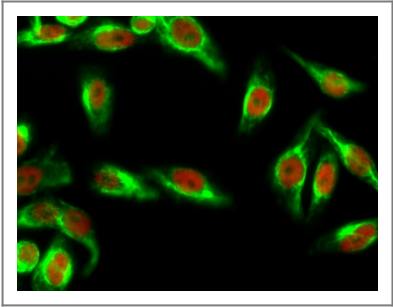
Gao, L., Wang, Ly., Liu, Zq. et al. TNAP inhibition attenuates cardiac fibrosis induced by myocardial infarction through deactivating TGF-β1/Smads and activating P53 signaling pathways. *Cell Death Dis* 11, 44 (2020)



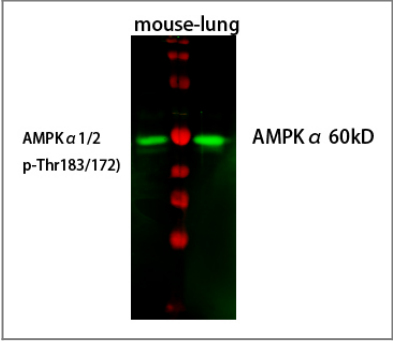
Guo, Hui-Hui, et al. "Liver-target nanotechnology facilitates berberine to ameliorate cardio-metabolic diseases." *Nature communications* 10.1 (2019): 1981.



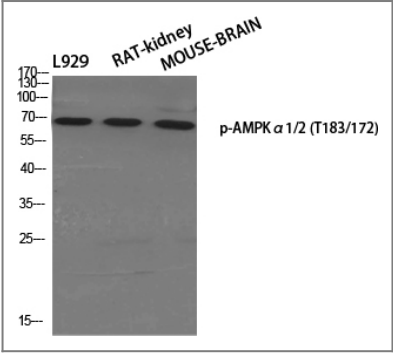
Min, Qing-Qing, et al. "Effects of Metformin Combined with Lactoferrin on Lipid Accumulation and Metabolism in Mice Fed with High-Fat Diet." *Nutrients* 10.11 (2018): 1628.



Immunofluorescence analysis of Hela cell. 1,AMPKα1/2 (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).



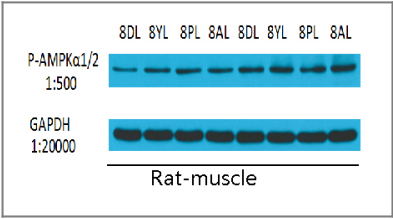
Western Blot analysis of mouse-lung cells using primary antibody diluted at 1:1000(4°C overnight). Secondary antibody:Goat Anti-rabbit IgG IRDye 800(diluted at 1:5000, 25°C, 1 hour). Cell lysate was extracted by Minute™ Plasma Membrane Protein Isolation and Cell Fractionation Kit(SM-005, Inventbiotech,MN,USA).



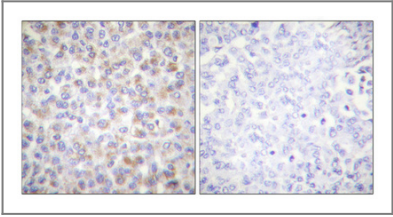
Western Blot analysis of various cells using Phospho-AMPKα1/2 (T183/172) Polyclonal Antibody diluted at 1:500



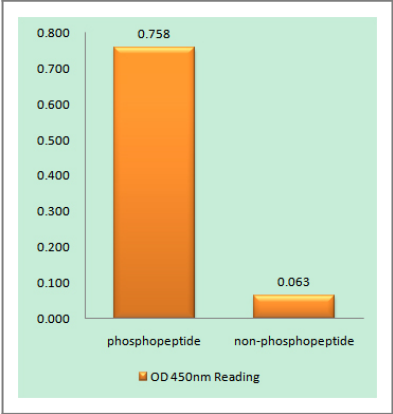
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Immunohistochemical analysis of paraffin-embedded Human breast cancer. Antibody was diluted at 1:100(4° overnight). High-pressure and temperature Tris-EDTA,pH8.0 was used for antigen retrieval. Negative contrl (right) obtained from antibody was pre-absorbed 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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Thr183/172) Rabbit
pAb**

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