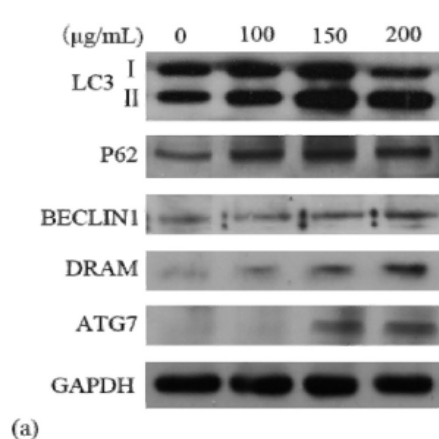


## AMPK $\alpha$ 1/2 (phospho Thr183/172) Polyclonal Antibody

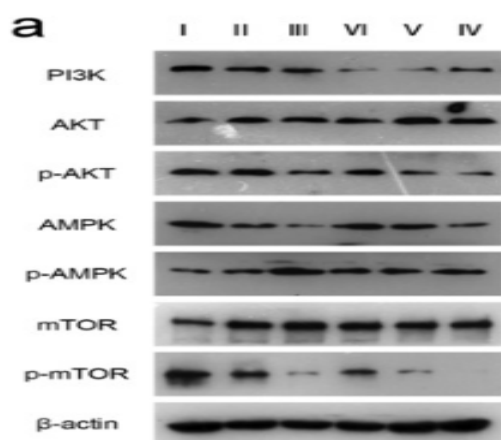
<b>Catalog No :</b>	YP0575
<b>Reactivity :</b>	Human;Mouse;Rat;Monkey;Pig;Marsupenaeus japonicus
<b>Applications :</b>	IF;WB;IHC;ELISA
<b>Target :</b>	AMPK $\alpha$ 1/2
<b>Fields :</b>	>>FoxO signaling pathway;>>Autophagy - animal;>>mTOR signaling pathway;>>PI3K-Akt signaling pathway;>>AMPK signaling pathway;>>Longevity regulating pathway;>>Longevity regulating pathway - multiple species;>>Apelin signaling pathway;>>Tight junction;>>Circadian rhythm;>>Thermogenesis;>>Insulin signaling pathway;>>Adipocytokine signaling pathway;>>Oxytocin signaling pathway;>>Glucagon signaling pathway;>>Insulin resistance;>>Non-alcoholic fatty liver disease;>>Alcoholic liver disease;>>Hypertrophic cardiomyopathy;>>Fluid shear stress and atherosclerosis
<b>Gene Name :</b>	AAPK1/AAPK2
<b>Protein Name :</b>	5'-AMP-activated protein kinase catalytic subunit alpha-1/2
<b>Human Gene Id :</b>	5562/5563
<b>Human Swiss Prot No :</b>	Q13131/P54646
<b>Mouse Gene Id :</b>	105787/108079
<b>Rat Gene Id :</b>	65248/78975
<b>Rat Swiss Prot No :</b>	P54645/Q09137
<b>Immunogen :</b>	The antiserum was produced against synthesized peptide derived from human AMPK alpha around the phosphorylation site of Thr172. AA range:140-189
<b>Specificity :</b>	Phospho-AMPK $\alpha$ 1/2 (T183/172) Polyclonal Antibody detects endogenous levels of AMPK $\alpha$ 1/2 protein only when phosphorylated at T183/172.
<b>Formulation :</b>	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

<b>Source :</b>	Polyclonal, Rabbit,IgG
<b>Dilution :</b>	IF 1:50-200 WB 1:500 - 1:2000. IHC 1:100 - 1:300. ELISA: 1:40000. Not yet tested in other applications.
<b>Purification :</b>	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
<b>Concentration :</b>	1 mg/ml
<b>Storage Stability :</b>	-15°C to -25°C/1 year(Do not lower than -25°C)
<b>Observed Band :</b>	63kD
<b>Cell Pathway :</b>	Insulin Receptor; mTOR; AMPK
<b>Background :</b>	<p>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>
<b>Function :</b>	<p>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 s</p>
<b>Subcellular Location :</b>	Cytoplasm . Nucleus . In response to stress, recruited by p53/TP53 to specific promoters. .
<b>Expression :</b>	Brain,Intestine,Liver,Mammary gland,Platelet,Testis

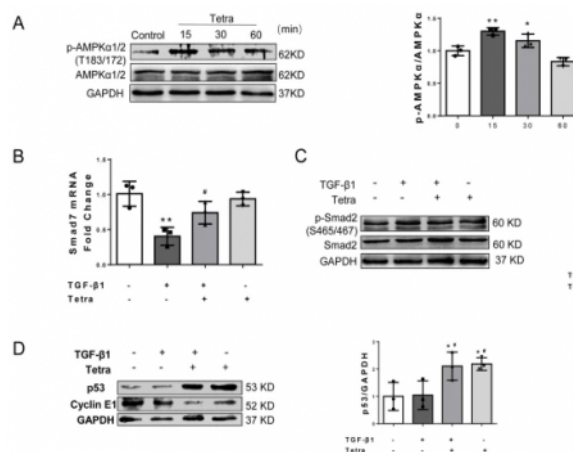
## Products Images



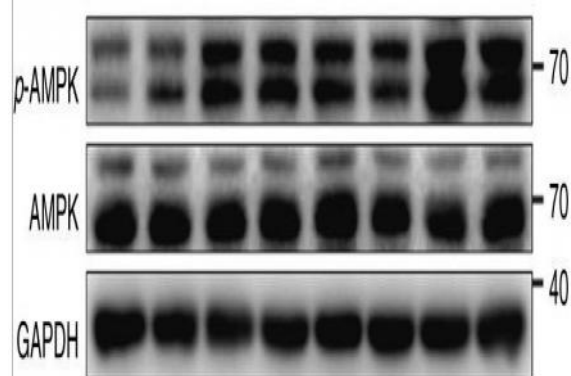
New fungal protein from *Pleurotus ferulae lanzi* induces AMPK-mediated autophagy and G1-phase cell cycle arrest in A549 lung cancer cells. Zhao-Kun Liu WB Human 1:250 A549 cell



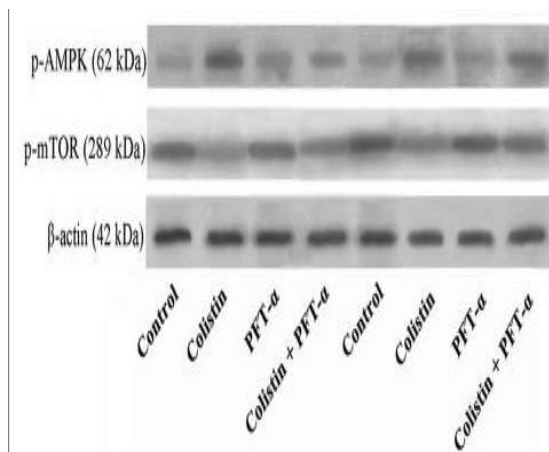
Kang, Min, et al. "Autophagy was activated against the damages of placentas caused by nano-copper oral exposure." *Ecotoxicology and Environmental Safety* 220 (2021): 112364.



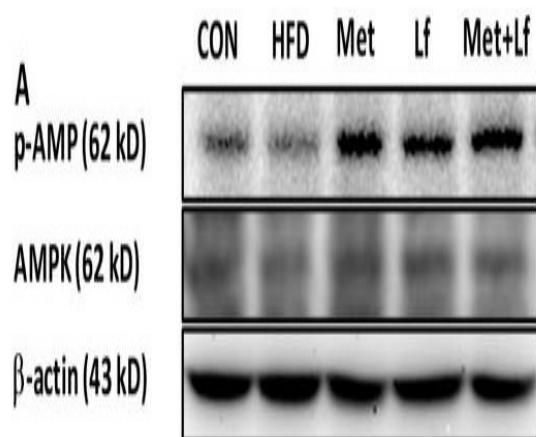
Gao, L., Wang, Ly., Liu, Zq. et al. TNAP inhibition attenuates cardiac fibrosis induced by myocardial infarction through deactivating TGF- $\beta$ 1/Smads and activating P53 signaling pathways. *Cell Death Dis* 11, 44 (2020)



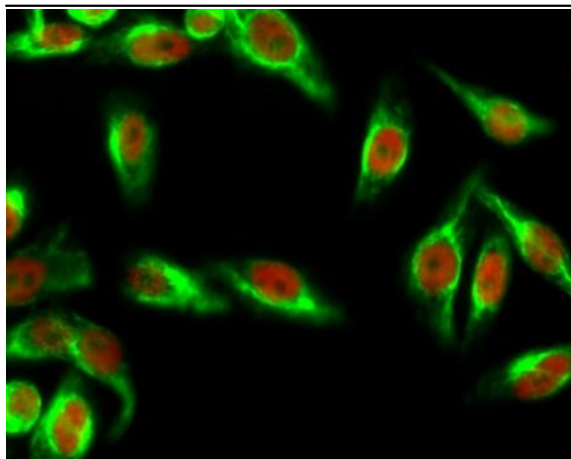
Guo, Hui-Hui, et al. "Liver-target nanotechnology facilitates berberine to ameliorate cardio-metabolic diseases." *Nature communications* 10.1 (2019): 1981.



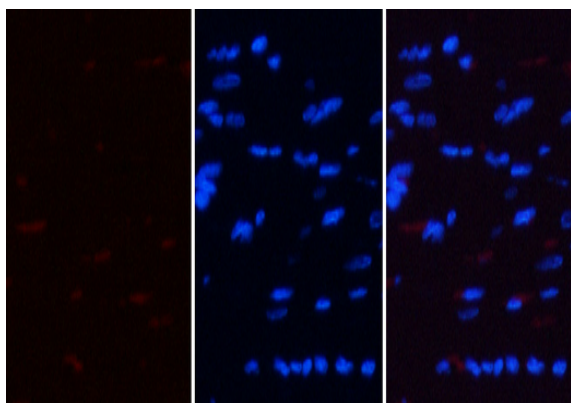
Zhang, Ling, et al. "P53 mediates colistin-induced autophagy and apoptosis in PC-12 cells." *Antimicrobial agents and chemotherapy* (2016): AAC-00641.



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 $\alpha$ 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).

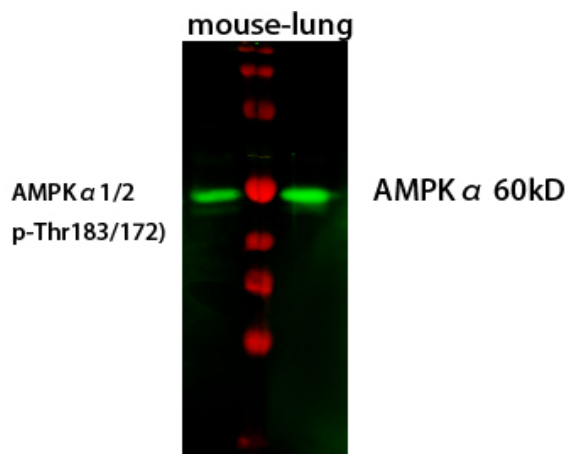


A

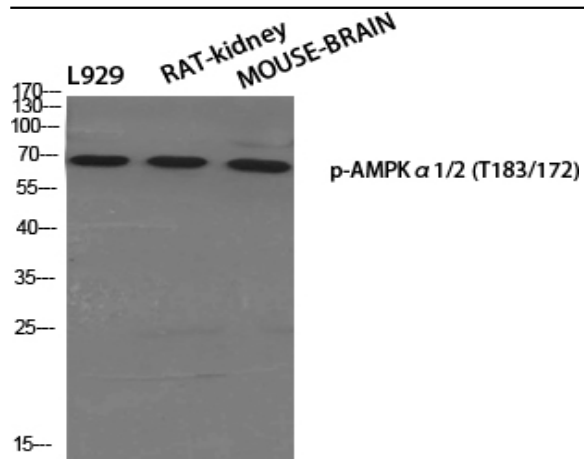
B

C

Immunofluorescence analysis of rat-heart tissue. 1, AMPK $\alpha$ 1/2 (phospho Thr183/172) Polyclonal Antibody (red) was diluted at 1:200 (4°C, overnight). 2, Cy3 labeled Secondary antibody was diluted at 1:300 (room temperature, 50min). 3, Picture B: DAPI (blue) 10min. Picture A: Target. Picture C: merge of A+B

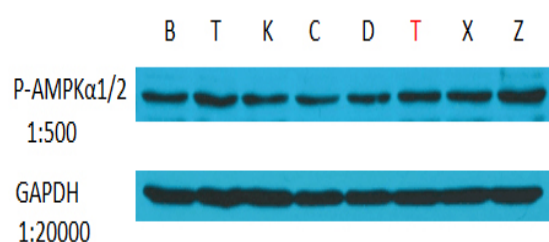


Western Blot analysis of mouse-lung cells using primary antibody diluted at 1:1000 (4°C overnight). Secondary antibody: Goat Anti-rabbit IgG IRDye 800 (diluted at 1:5000, 25°C, 1 hour). Cell lysate was extracted by Minute™ Plasma Membrane Protein Isolation and Cell Fractionation Kit (SM-005, Inventibiotec,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



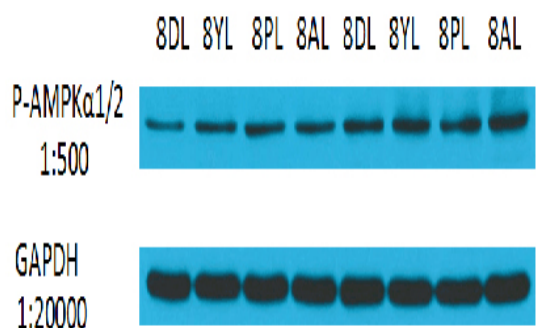
Western Blot analysis of various cells using Phospho-AMPK $\alpha$ 1/2 (T183/172) Polyclonal Antibody diluted at 1:500

The picture was kindly provided by our customer

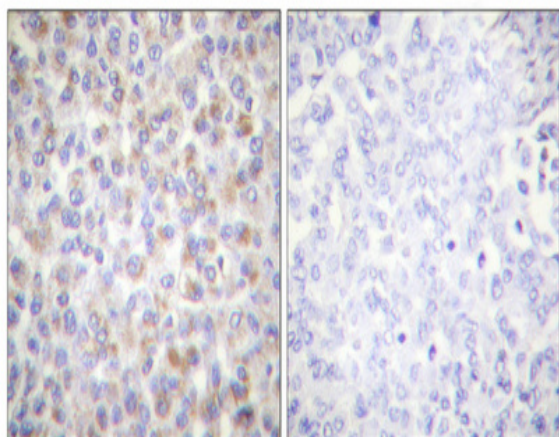


Rat-heart

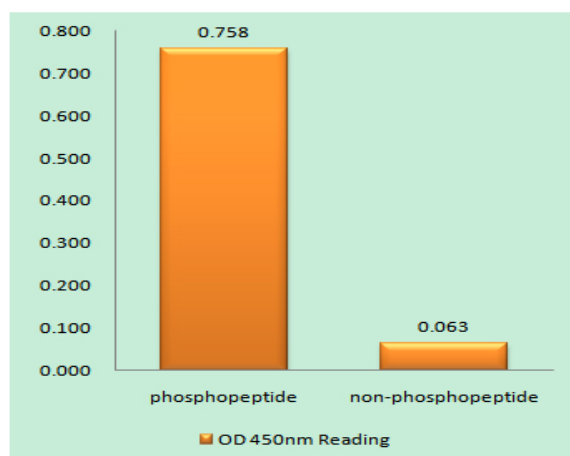
The picture was kindly provided by our customer



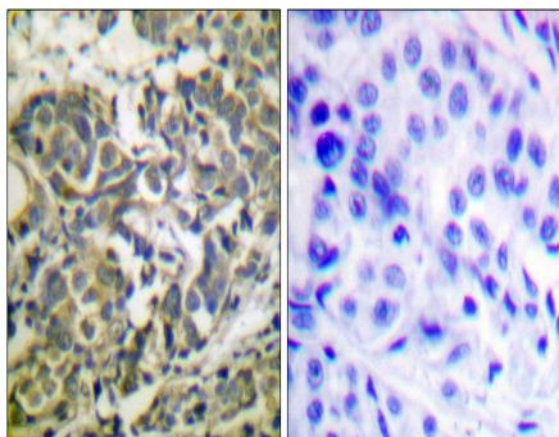
Rat-muscle



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



Immunohistochemistry analysis of paraffin-embedded human breast carcinoma, using AMPK alpha (Phospho-Thr172) Antibody. The picture on the right is blocked with the phosphopeptide.