

# AMPK alpha-1 Mouse mAb

AMPK alpha-1 Mouse mAb  
Catalog # AP94097

## Product Information

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<b>Application</b>	WB, IHC-P, IHC-F, IF
<b>Reactivity</b>	Human, Mouse, Rat
<b>Host</b>	Mouse
<b>Clonality</b>	Monoclonal
<b>Calculated MW</b>	64 KDa
<b>Physical State</b>	Liquid
<b>Immunogen</b>	KLH conjugated synthetic peptide derived from human AMPK alpha-1
<b>Isotype</b>	IgG1
<b>Purity</b>	affinity purified by Protein G
<b>Buffer</b>	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
<b>SUBCELLULAR LOCATION</b>	Cytoplasm. Nucleus. Note=In response to stress, recruited by p53/TP53 to specific promoters.
<b>SIMILARITY</b>	Belongs to the protein kinase superfamily. CAMK Ser/Thr protein kinase family. SNF1 subfamily. Contains 1 protein kinase domain.
<b>SUBUNIT</b>	AMPK is a heterotrimer of an alpha catalytic subunit (PRKAA1 or PRKAA2), a beta (PRKAB1 or PRKAB2) and a gamma non-catalytic subunits (PRKAG1, PRKAG2 or PRKAG3). Interacts with FNIP1 and FNIP2.
<b>Post-translational modifications</b>	Ubiquitinated. 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 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.
<b>DISEASE</b>	Defects in CRYAB are the cause of myofibrillar alpha-B crystallin-related (MFM-CRYAB) [MIM:608810]. A neuromuscular disorder that results in weakness of the proximal and distal limb muscles, weakness of the neck, velopharynx and trunk muscles, hypertrophic cardiomyopathy, and cataract in a subset of patients.
<b>Important Note</b>	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
<b>Background Descriptions</b>	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]

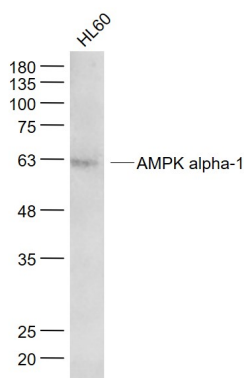
## Additional Information

<b>Target/Specificity</b>	Lens as well as other tissues.
<b>Dilution</b>	WB=1:500-1000,IHC-P=1:200-800,IHC-F=1:200-500,IF=1:200-500
<b>Storage</b>	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

## Background

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]

## Images



### Sample:

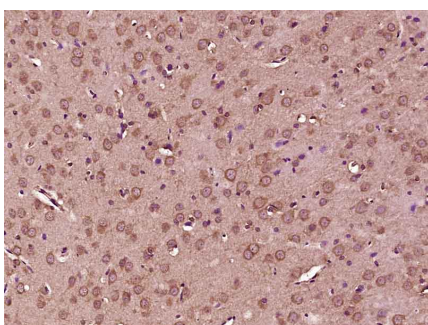
HL60(Human) Cell Lysate at 30 ug

Primary: Anti- AMPK alpha-1 (AP94097) at 1/1000 dilution

Secondary: IRDye800CW Goat Anti-Mouse IgG at 1/20000 dilution

Predicted band size: 64 kD

Observed band size: 64 kD



Paraformaldehyde-fixed, paraffin embedded (Rat brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (AMPK alpha-1) Monoclonal Antibody, Unconjugated (AP94097) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Mouse) (sp-0024) instructions and DAB staining.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.