SunLong Biotech Co.,LTD
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Rabbit Anti-phospho-AMPK alpha 1 (Ser356)antibody

SL14318R

Product Name	phospho-AMPK alpha 1 (Ser356)
Chinese Name	腺苷单磷酸活化蛋白激酶 α1/AMPK α 1 抗体
Alias	phospho-AMPK alpha-1(S356); AMPK alpha-1(phospho-S356); AMPK alpha 1(phospho S356); AMPK alpha-1; 5 AMP activated protein kinase alpha 1catalytic subunit; 5 AMP activated protein kinase catalytic alpha 1 chain; 5' AMP activated protein kinase catalytic subunit alpha 1; AAPK1; acetyl CoA carboxylase kinase; AI194361; AI450832; AL024255; AMP -activate kinase alpha 1 subunit; AMP-activated protein kinase, catalytic, alpha -1; AMPK 1; AMPK alpha 1 chain; AMPK; AMPK1; AMPKa1; AMPKalpha1; C130083N04Rik; cb116; EC 2.7.11.1; HMG CoA reductase kinase;hormone sensitive lipase kinase; im:7154392; kinase AMPK alpha1; MGC33776; MGC57364; PRKAA 1; PRKAA1; Protein kinase AMP activated alpha 1 catalytic subunit; SNF1-like protein AMPK; wu:fa94c10; AAPK1_HUMAN; AMPKα1; AMPK α1; AMPKα 1; AMPK α 1; AMPK AMPK-α1; AMPK-α-1; α-1; AMPK-a; AMPK a1.
Product Type	Phosphorylated anti
Research Area	Tumour Neurobiology Signal transduction transcriptional regulatory factor Kinases and Phosphatases Alzheimer's
Immunogen Species	Rabbit
Clonality	Polyclonal
React Species	Human,Mouse (predicted:Rat,Dog,Cow,Horse,Sheep,Pig)
Applications	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,Flow-Cyt=1ug/Test （Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Theoretical molecular weight	64kDa
Cellular localization	The nucleus cytoplasmic
Form	Liquid
Concentration	1mg/ml

immunogen	KLH conjugated Synthesised phosphopeptide derived from human AMPK alpha 1 around the phosphorylation site of Ser356: AT(p-S)PP
Lsotype	IgG
Purification	affinity purified by Protein A
Buffer Solution	1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.
Storage	Shipped at 4℃. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
Attention	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
PubMed	PubMed
Product Detail	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]. **Function:** Catalytic 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. Regulates lipid synthesis by phosphorylating and inactivating lipid metabolic enzymes such as ACACA, ACACB, GYS1, HMGCR and LIPE; regulates fatty acid and cholesterol synthesis by phosphorylating acetyl-CoA carboxylase (ACACA and ACACB) and hormone-sensitive lipase (LIPE) enzymes, respectively. Regulates insulin-signaling and glycolysis by phosphorylating IRS1, PFKFB2 and PFKFB3. AMPK stimulates glucose uptake in muscle by increasing the translocation of the glucose transporter SLC2A4/GLUT4 to the plasma membrane, possibly by mediating phosphorylation of TBC1D4/AS160. Regulates transcription and chromatin structure by phosphorylating transcription regulators involved in energy metabolism such as CRTC2/TORC2, FOXO3, histone H2B, HDAC5, MEF2C, MLXIPL/ChREBP, EP300, HNF4A, p53/TP53, SREBF1, SREBF2 and PPARGC1A. Acts as a key regulator of glucose homeostasis in liver by phosphorylating CRTC2/TORC2, leading to CRTC2/TORC2 sequestration in the cytoplasm. In response to stress, phosphorylates 'Ser-36' of histone H2B (H2BS36ph), leading to promote transcription. Acts as a key regulator of cell growth and proliferation by phosphorylating

TSC2, RPTOR and ATG1: in response to nutrient limitation, negatively regulates the mTORC1 complex by phosphorylating RPTOR component of the mTORC1 complex and by phosphorylating and activating TSC2. In response to nutrient limitation, promotes autophagy by phosphorylating and activating ULK1. AMPK also acts as a regulator of circadian rhythm by mediating phosphorylation of CRY1, leading to destabilize it. May regulate the Wnt signaling pathway by phosphorylating CTNNB1, leading to stabilize it. Also has tau-protein kinase activity: in response to amyloid beta A4 protein (APP) exposure, activated by CAMKK2, leading to phosphorylation of MAPT/TAU; however the relevance of such data remains unclear in vivo. Also phosphorylates CFTR, EEF2K, KLC1, NOS3 and SLC12A1.

Subunit:
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.

Subcellular Location:
Cytoplasm. Nucleus. Note=In response to stress, recruited by p53/TP53 to specific promoters.

Post-translational modifications:
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 lvel. 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

Similarity:
Belongs to the protein kinase superfamily. CAMK Ser/Thr protein kinase family. SNF1 subfamily.
Contains 1 protein kinase domain.

SWISS:
Q13131

Gene ID:
5562

Database links:
Entrez Gene: 5562 Human

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Entrez Gene: 105787 Mouse

Entrez Gene: 65248 Rat

Omim: 602739 Human

SwissProt: Q13131 Human

SwissProt: Q5EG47 Mouse

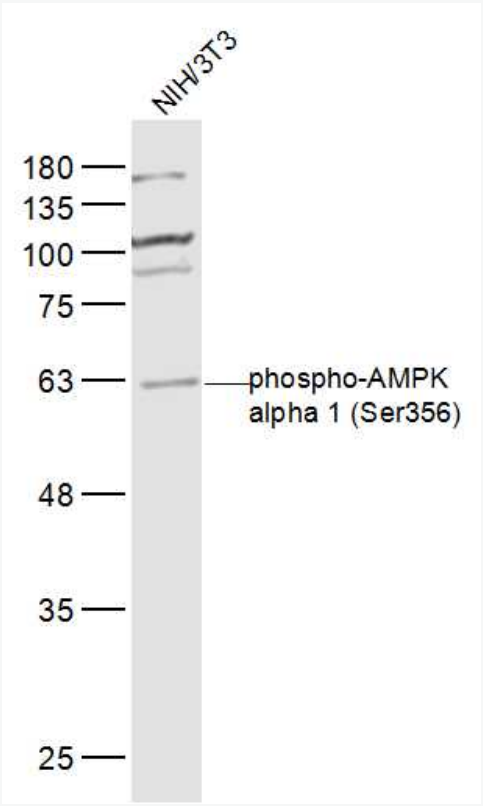
SwissProt: P54645 Rat

Unigene: 43322 Human

Unigene: 207004 Mouse

Unigene: 87789 Rat

Product Picture



Sample:

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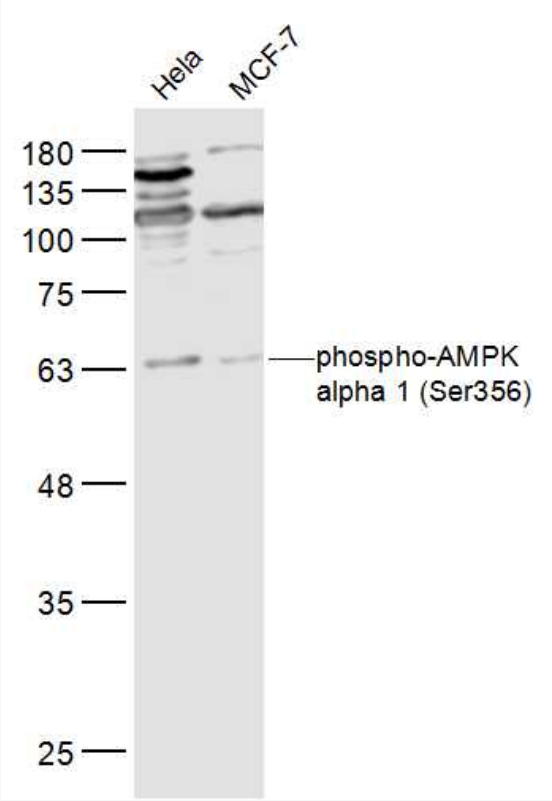
NIH/3T3(Mouse) Cell Lysate at 30 ug

Primary: Anti-phospho-AMPK alpha 1 (Ser356) (SL14318R) at 1/500 dilution

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

Predicted band size: 63 kD

Observed band size: 63 kD



Sample:

Hela(Human) CellLysate at 30 ug

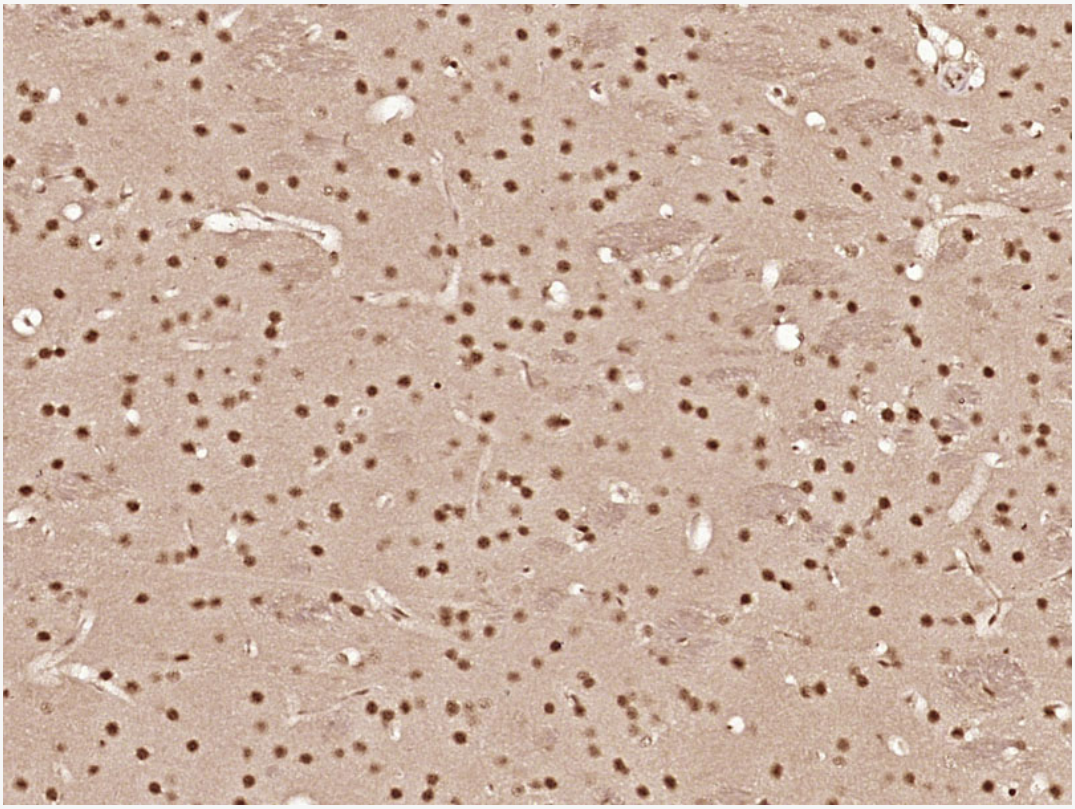
MCF-7(Human) CellLysate at 30 ug

Primary: Anti-phospho-AMPK alpha 1 (Ser356) (SL14318R) at 1/500 dilution

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

Predicted band size: 63 kD

Observed band size: 63 kD



Paraformaldehyde-fixed, paraffin embedded (Mouse 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 (phospho-AMPK alpha 1 (Ser356)) Polyclonal Antibody, Unconjugated (SL14318R) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.

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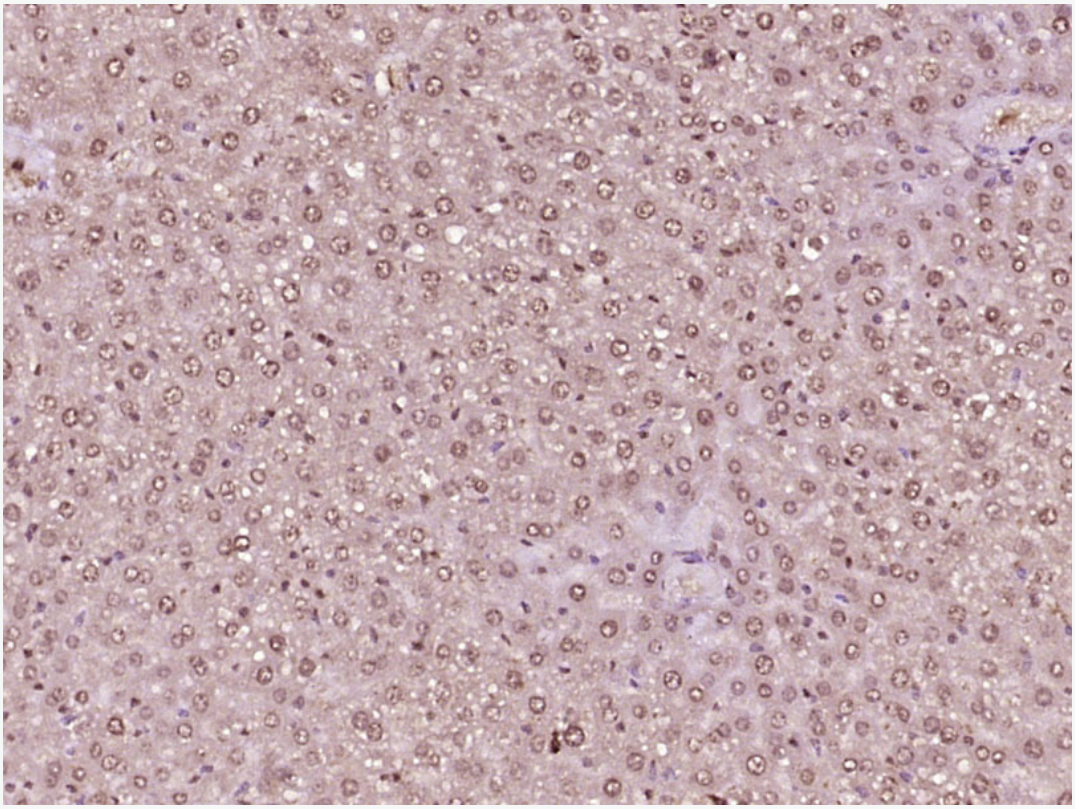

Paraformaldehyde-fixed, paraffin embedded (Mouse liver); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (phospho-AMPK alpha 1 (Ser356)) Polyclonal Antibody, Unconjugated (SL14318R) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.

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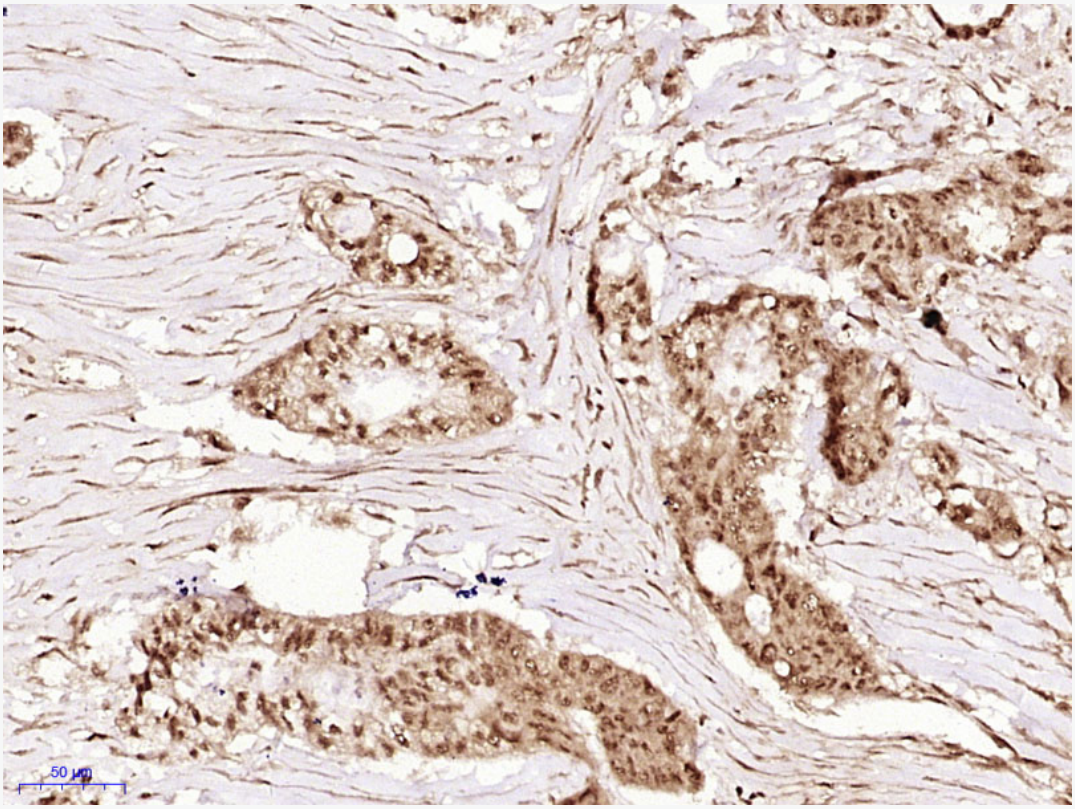

Paraformaldehyde-fixed, paraffin embedded (Human cervical carcinoma); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (phospho-AMPK alpha 1 (Ser356)) Polyclonal Antibody, Unconjugated (SL14318R) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.

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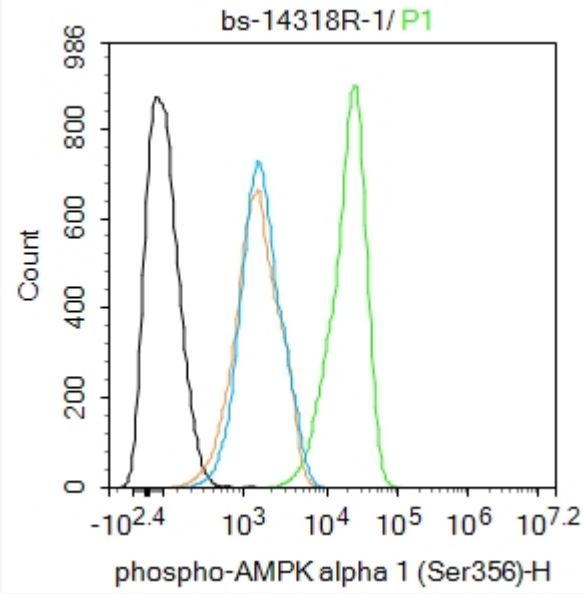

Blank control（black line）:HepG2.

Primary Antibody (green line): Rabbit Anti-phospho-AMPK alpha 1 (Ser356) antibody (SL14318R)

Dilution:1ug/Test;

Secondary Antibody（white blue line）: Goat anti-rabbit IgG-AF488

Dilution: 0.5ug/Test.

Isotype control（orange line）: Normal Rabbit IgG

Protocol

The cells were fixed with 4% PFA (10min at room temperature)and then permeabilized with 90% ice-cold methanol for 20 min at -20℃, The cells were then incubated in 5%BSA to block non-specific protein-protein interactions for 30 min at room temperature .Cells stained with Primary Antibody for 30 min at room temperature. The secondary antibody used for 40 min at room temperature.

Acquisition of 20,000 events was performed.