AMPKα1/AMPKα2(Phospho-Thr183/Thr172) Antibody

Catalog No: #11183

Package Size: #11183-1 50ul #11183-2 100ul

Orders: order@signalwayantibody.com
Support: tech@signalwayantibody.com

Description

Product Name	AMPKα1/AMPKα2(Phospho-Thr183/Thr172) Antibody
Host Species	Rabbit
Clonality	Polyclonal
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Applications	WB;IHC;IF
Species Reactivity	Hu Ms Rt
Specificity	The antibody detects endogenous level of AMPKα1/AMPKα2 only when phosphorylated at threonine 183 or 172.
Immunogen Type	Peptide-KLH
Immunogen Description	The antiserum was produced against synthesized peptide derived from human AMPK alpha around the phosphorylation site of Thr172.
Target Name	AMPKα1/AMPKα2
Modification	Phospho
Other Names	AMPK; AMPKa1; AMPK2
Accession No.	Swiss-Prot: Q13131/P54646; NCBI Gene ID: 5562/5563; NCBI mRNA: NM_006251.5/ NM_006252.3; NCBI Protein: NP_006242.5 /NP_006243.2
Uniprot	Q13131
GeneID	5562;
SDS-PAGE MW	63
Concentration	1.0mg/ml
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Storage	Store at -20°C

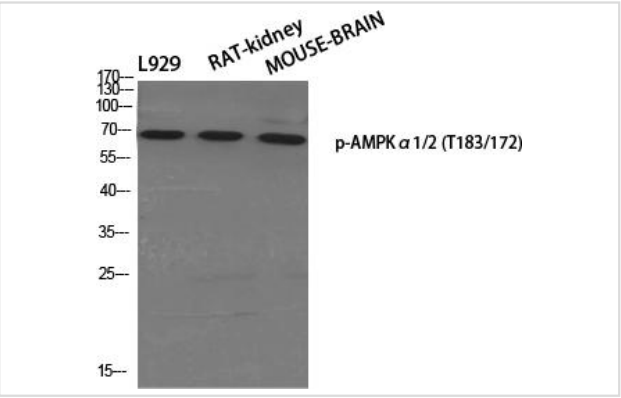
Application Details

WB 1:500-1:2000;

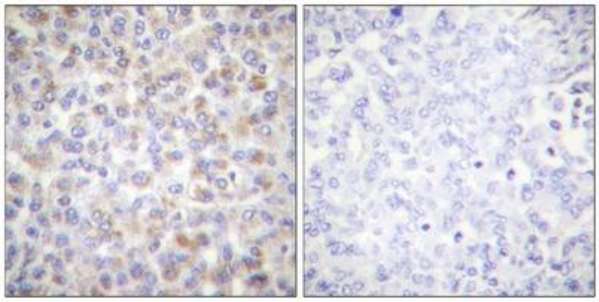
IHC 1:100-1:300;

IF 1:50-200;

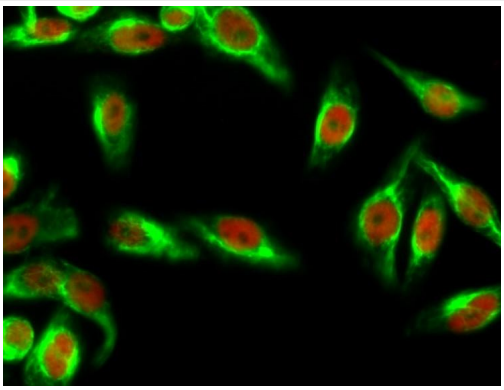
Images



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



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.



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 was diluted at 1:1000(room temperature, 50min). Goat Anti Mouse Alexa Fluor 594 was diluted at 1:1000(room temperature, 50min).

Background

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.

Note: This product is for in vitro research use only