10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Mouse Stk11 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP17316b

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	Q9WTK7
Other Accession	NP_035622.1
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB37144
Calculated MW	49267
Antigen Region	393-420

Additional Information

Gene ID	20869
Other Names	Serine/threonine-protein kinase STK11, Liver kinase B1 homolog, LKB1, mLKB1, Stk11 {ECO:0000312|MGI:MGI:1341870}
Target/Specificity	This Mouse Stk11 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 393-420 amino acids from the C-terminal region of mouse Stk11.
Dilution	WB~~1:1000 IHC-P~~1:100~500 IF~~1:25 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Mouse Stk11 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	Stk11 {ECO:0000312|MGI:MGI:1341870}
Function	Tumor suppressor serine/threonine-protein kinase that controls the activity of AMP-activated protein kinase (AMPK) family members, thereby playing a

	role in various processes such as cell metabolism, cell polarity, apoptosis and DNA damage response. Acts by phosphorylating the T-loop of AMPK family proteins, thus promoting their activity: phosphorylates PRKAA1, PRKAA2, BRSK1, BRSK2, MARK1, MARK2, MARK3, MARK4, NUAK1, NUAK2, SIK1, SIK2, SIK3 and SNRK but not MELK. Also phosphorylates non-AMPK family proteins such as STRADA, PTEN and possibly p53/TP53. Acts as a key upstream regulator of AMPK by mediating phosphorylation and activation of AMPK catalytic subunits PRKAA1 and PRKAA2 and thereby regulates processes including: inhibition of signaling pathways that promote cell growth and proliferation when energy levels are low, glucose homeostasis in liver, activation of autophagy when cells undergo nutrient deprivation, and B-cell differentiation in the germinal center in response to DNA damage. Also acts as a regulator of cellular polarity by remodeling the actin cytoskeleton. Required for cortical neuron polarization by mediating phosphorylation and activation of BRSK1 and BRSK2, leading to axon initiation and specification. Involved in DNA damage response: interacts with p53/TP53 and recruited to the CDKN1A/WAF1 promoter to participate in transcription activation. Able to phosphorylate p53/TP53; the relevance of such result in vivo is however unclear and phosphorylation may be indirect and mediated by downstream STK11/LKB1 kinase NUAK1. Also acts as a mediator of p53/TP53-dependent apoptosis via interaction with p53/TP53: translocates to the mitochondrion during apoptosis and regulates p53/TP53-dependent apoptosis pathways. Regulates UV radiation-induced DNA damage response mediated by CDKN1A. In association with NUAK1, phosphorylates CDKN1A in response to UV radiation and contributes to its degradation which is necessary for optimal DNA repair (PubMed:25329316).
Cellular Location	Nucleus. Cytoplasm. Membrane. Mitochondrion. Note=Translocates to mitochondrion during apoptosis (By similarity). A small fraction localizes at membranes. Relocates to the cytoplasm when bound to STRAD (STRADA or STRADB) and CAB39/MO25 (CAB39/MO25alpha or CAB39L/MO25beta). PTEN promotes cytoplasmic localization (By similarity).
Tissue Location	[Isoform 1]: Widely expressed. [Isoform 3]: Expressed in adult brain and liver and absent from tissues derived from postnatal day 7

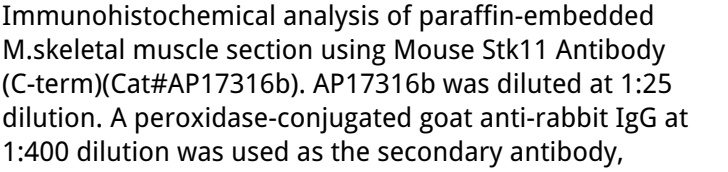
Background

Essential role in G1 cell cycle arrest. Phosphorylates and activates members of the AMPK-related subfamily of protein kinases (By similarity). Tumor suppressor.

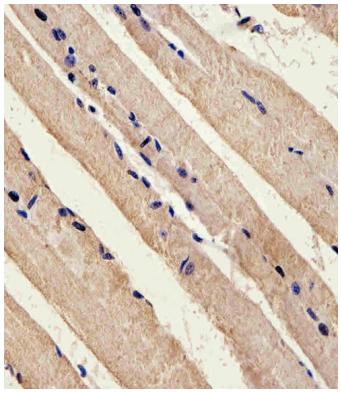
References

Gao, Y., et al. Proc. Natl. Acad. Sci. U.S.A. 107(44):18892-18897(2010)
Bungard, D., et al. Science 329(5996):1201-1205(2010)
Koh, H.J., et al. Proc. Natl. Acad. Sci. U.S.A. 107(35):15541-15546(2010)
Foretz, M., et al. J. Clin. Invest. 120(7):2355-2369(2010)
Asada, N., et al. J. Neurosci. 30(26):8852-8865(2010)

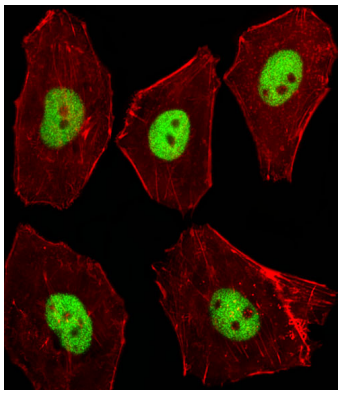
Images



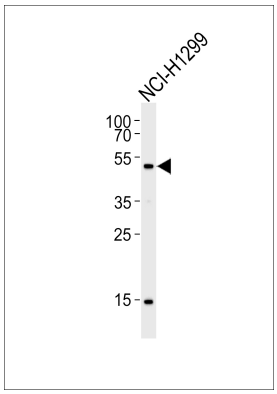
Immunohistochemical analysis of paraffin-embedded M.skeletal muscle section using Mouse Stk11 Antibody (C-term)(Cat#AP17316b). AP17316b was diluted at 1:25 dilution. A peroxidase-conjugated goat anti-rabbit IgG at 1:400 dilution was used as the secondary antibody,



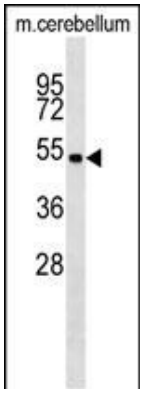
followed by DAB staining.



Fluorescent image of A549 cells stained with XAF1 Mouse Stk11 Antibody (C-term)(Cat#AP17316b). AP17316b was diluted at 1:100 dilution. An Alexa Fluor 488-conjugated goat anti-rabbit lgG at 1:400 dilution was used as the secondary antibody (green). Cytoplasmic actin was counterstained with Alexa Fluor® 555 conjugated with Phalloidin (red).



Western blot analysis of lysate from NCI-H1299 cell line, using Mouse Stk11 Antibody (C-term)(Cat. #AP17316b). AP17316b was diluted at 1:1000. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysate at 35ug.



Mouse Stk11 Antibody (C-term) (Cat. #AP17316b) western blot analysis in mouse cerebellum tissue lysates (35ug/lane).This demonstrates the Stk11 antibody detected the Stk11 protein (arrow).