ARG42362
anti-STK11 / LKB1 phospho (Ser428) antibody

Package: 100 µl
Store at: -20°C

Summary

Product Description	Rabbit Polyclonal antibody recognizes STK11 / LKB1 phospho (Ser428)
Tested Reactivity	Hu, Ms, Rat
Tested Application	WB
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Target Name	STK11 / LKB1
Species	Human
Immunogen	KLH-conjugated phosphospecific peptide around Ser428 of Human STK11 / LKB1.
Conjugation	Un-conjugated
Alternate Names	hLKB1; Serine/threonine-protein kinase STK11; Liver kinase B1; Renal carcinoma antigen NY-REN-19; LKB1; EC 2.7.11.1; PJS

Application Instructions

Application table

Application	Dilution
WB	1:500 - 1:1000

Application Note: * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

Observed Size: ~ 54 kDa

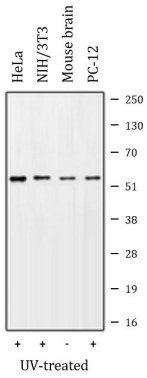
Properties

Form	Liquid
Purification	Affinity purification with immunogen.
Buffer	0.42% Potassium phosphate (pH 7.3), 0.87% NaCl, 0.01% Sodium azide and 30% Glycerol.
Preservative	0.01% Sodium azide
Stabilizer	30% Glycerol
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

Gene Symbol	STK11
Gene Full Name	serine/threonine kinase 11
Background	This gene, which encodes a member of the serine/threonine kinase family, regulates cell polarity and functions as a tumor suppressor. Mutations in this gene have been associated with Peutz-Jeghers syndrome, an autosomal dominant disorder characterized by the growth of polyps in the gastrointestinal tract, pigmented macules on the skin and mouth, and other neoplasms. Alternate transcriptional splice variants of this gene have been observed but have not been thoroughly characterized. [provided by RefSeq, Jul 2008]
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. In vein endothelial cells, inhibits PI3K/Akt signaling activity and thus induces apoptosis in response to the oxidant peroxynitrite (in vitro). 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). [Isoform 2]: Has a role in spermiogenesis. [UniProt]
Calculated Mw	49 kDa
PTM	Phosphorylated by ATM at Thr-363 following ionizing radiation (IR). Phosphorylation at Ser-428 by RPS6KA1 and/or some PKA is required to inhibit cell growth. Phosphorylation at Ser-428 is also required during neuronal polarization to mediate phosphorylation of BRSK1 and BRSK2 (By similarity). Phosphorylation by PKC/PRKCZ at Ser-428 promotes peroxynitrite-induced nuclear export of STK11, leading to PTEN activation and subsequent inhibition of AKT signaling. Phosphorylation by PKC/PRKCZ at Ser-399 in isoform 2 promotes metformin (or peroxynitrite)-induced nuclear export of STK11 and activation of AMPK. UV radiation-induced phosphorylation at Thr-363 mediates CDKN1A degradation (By similarity). Acetylated. Deacetylation at Lys-48 enhances cytoplasmic localization and kinase activity in vitro. [UniProt]
Cellular Localization	Nucleus. Cytoplasm. Membrane. Mitochondrion. Note=A small fraction localizes at membranes. Relocates to the cytoplasm when bound to STRAD and CAB39/MO25. Translocates to the mitochondrion during apoptosis. Translocates to the cytoplasm in response to metformin or peroxynitrite treatment. PTEN promotes cytoplasmic localization. Isoform 2: Nucleus. Cytoplasm. Note=Predominantly nuclear, but translocates to the cytoplasm in response to metformin or peroxynitrite treatment. [UniProt]

Images



ARG42362 anti-STK11 / LKB1 phospho (Ser428) antibody WB image

Western blot: UV-treated HeLa, UV-treated NIH/3T3, UV-treated PC12 cells, and Mouse brain lysates were stained with ARG42362 anti-STK11 / LKB1 phospho (Ser428) antibody.