SunLong Biotech Co.,LTD
Tel: 0086-571-56623320 Fax:0086-571-56623318
E-mail:sales@sunlongbiotech.com
www.sunlongbiotech.com

[Primary Antibody]

Rabbit Anti-phospho-LKB1 (Thr363)antibody

Catalog Number: SL1532R

FOR RESEARCH USE ONLY

[DATASHEET]

Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Target:	phospho-LKB1 (Thr363)
Immunogen:	KLH conjugated Synthesised phosphopeptide derived from human LKB1 around the phosphorylation site of Thr363: IY(p-T)QD
Purification:	affinity purified by Protein A
Concentration:	1mg/ml
Storage:	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol. Shipped at 4℃. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
Applications:	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.
Reactivity:	Human(predicted:Mouse,Rat,Chicken,Dog,Cow,Horse)
Predicted MW.:	48kDa
Subcellular Location:	The nucleus cytoplasmic The cell membrane
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

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	AMPK family proteins, leading to promote 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 and possibly p53/TP53. Acts as a key upstream regulator of AMPK by mediating phosphorylation and activation of AMPK catalytic subunits PRKAA1 and PRKAA2: it thereby regulates 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, 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 neurons 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 to 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 p53/TP53-dependent apoptosis via interaction with p53/TP53: translocates to mitochondrion during apoptosis and regulates p53/TP53-dependent apoptosis pathways. **Subunit:** Catalytic component of a trimeric complex composed of STK11/LKB1, STRAD (STRADA or STRADB) and CAB39/MO25 (CAB39/MO25alpha or CAB39L/MO25beta): the complex tethers STK11/LKB1 in the cytoplasm and stimulates its catalytic activity. Found in a ternary complex composed of SMAD4, STK11/LKB1 and STK11IP. Interacts with p53/TP53, SMAD4, STK11IP and WDR6. **Subcellular Location:** Nucleus. Cytoplasm. Membrane. Mitochondrion. Note=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). Translocates to mitochondrion during apoptosis. **Tissue Specificity:** Ubiquitously expressed. Strongest expression in testis and fetal liver. **Post-translational modifications:** Phosphorylated by ATM at Thr-363 following ionizing radiations (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. DISEASE: Defects in STK11 are a cause of Peutz-Jeghers syndrome

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	(PJS) [MIM:175200]. PJS is a rare hereditary disease in which there is predisposition to benign and malignant tumors of many organ systems. PJS is an autosomal dominant disorder characterized by melanocytic macules of the lips, multiple gastrointestinal hamartomatous polyps and an increased risk for various neoplasms, including gastrointestinal cancer. Defects in STK11 have been associated with testicular tumors (TEST) [MIM:273300]. A common solid malignancy in males. Germ cell tumors of the testis constitute 95% of all testicular neoplasms. Note=Defects in STK11 are associated with some sporadic cancers, especially lung cancers. Frequently mutated and inactivated in non-small cell lung cancer (NSCLC). Defects promote lung cancerigenesis process, especially lung cancer progression and metastasis. Confers lung adenocarcinoma the ability to trans-differentiate into squamous cell carcinoma. Also able to promotes lung cancer metastasis, via both cancer-cell autonomous and non-cancer-cell autonomous mechanisms. **Similarity:** Belongs to the protein kinase superfamily. CAMK Ser/Thr protein kinase family. LKB1 subfamily. Contains 1 protein kinase domain. **Database links:** **Entrez Gene:** 6794 Human **Entrez Gene:** 20869 Mouse Omim: 602216 Human **SwissProt:** Q15831 Human **SwissProt:** Q9WTK7 Mouse **Unigene:** 515005 Human The LKB1 gene is a tumor suppressor gene and also a serine/threonine protein kinase. The functions of LKB1 mainly include arresting the cell cycle at G1 phase, promoting Apoptosis, and regulating embryonic angiogenesis. Germline mutations in the LKB1 gene are the main causative factor of Peutz-Jeghers syndrome. LKB1 gene mutations have also been found in sporadic Tumour, with higher mutation rates in lung adenocarcinoma and cervical mucinous carcinoma.

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[VALIDATION IMAGES]

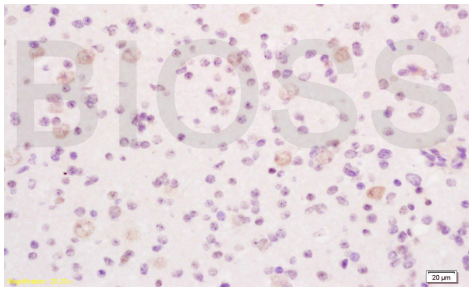


Figure 1. Tissue/cell: human glioma tissue; 4% Paraformaldehyde-fixed and paraffin-embedded; Antigen retrieval: citrate buffer (0.01M, pH 6.0), Boiling bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37℃ for 20 min; Incubation: Anti-phospho-LKB1(Thr363) Polyclonal Antibody, Unconjugated(SL1532R) 1:200, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining

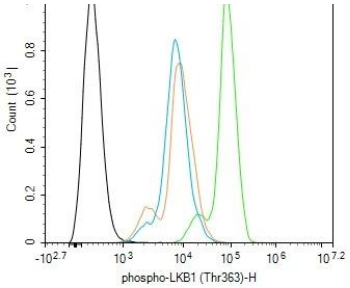


Figure 2. Blank control (black line) :HepG2. Primary Antibody (green line): Rabbit Anti-phospho-LKB1 (Thr363) antibody (SL1532R) Dilution:1ug/Test; Secondary Antibody (white blue line) : Goat anti-rabbit IgG-BF488 Dilution: 0.5ug/Test. Isotype control (orange line) : Normal Rabbit IgG Protocol The cells were fixed with 4% PFA (10min at room temperature)and then permeabilized with 90% ice-cold methanol for 20 min at -20°C, 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

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