

STK11 (LKB1) Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP7239B

Product Information

Application	IHC-P, E
Primary Accession	Q15831
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB3549/3550
Calculated MW	48636
Antigen Region	387-417

Additional Information

Gene ID	6794
Other Names	Serine/threonine-protein kinase STK11, Liver kinase B1, LKB1, hLKB1, Renal carcinoma antigen NY-REN-19, STK11, LKB1, PJS
Target/Specificity	This STK11 (LKB1) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 387-417 amino acids from the C-terminal region of human STK11 (LKB1).
Dilution	IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	STK11 (LKB1) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	STK11 (HGNC:11389)
Synonyms	LKB1, PJS
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 (PubMed:[12805220](#), PubMed:[14517248](#), PubMed:[14976552](#), PubMed:[15016379](#), PubMed:[15733851](#)). Acts by phosphorylating the T-loop of AMPK family proteins, thus promoting their activity: phosphorylates PRKAA1, PRKAA2, BRSK1, BRSK2, MARK1, MARK2, MARK3, MARK4, NUA1, NUA2, SIK1, SIK2, SIK3 and SNRK but not MELK (PubMed:[12805220](#), PubMed:[14517248](#), PubMed:[14976552](#), PubMed:[15016379](#), PubMed:[15733851](#)). Also phosphorylates non-AMPK family proteins such as STRADA, PTEN and possibly p53/TP53 (PubMed:[11430832](#), PubMed:[15987703](#)). 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 (PubMed:[14976552](#)). Also acts as a regulator of cellular polarity by remodeling the actin cytoskeleton (PubMed:[15016379](#)). Required for cortical neuron polarization by mediating phosphorylation and activation of BRSK1 and BRSK2, leading to axon initiation and specification (PubMed:[14976552](#)). Involved in DNA damage response: interacts with p53/TP53 and recruited to the CDKN1A/WAF1 promoter to participate in transcription activation (PubMed:[11430832](#), PubMed:[17108107](#), PubMed:[21317932](#)). 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 NUA1 (PubMed:[11430832](#), PubMed:[17108107](#), PubMed:[21317932](#)). 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 (PubMed:[11430832](#), PubMed:[17108107](#), PubMed:[21317932](#)). Regulates UV radiation-induced DNA damage response mediated by CDKN1A (PubMed:[25329316](#)). In association with NUA1, 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 {ECO:0000250|UniProtKB:Q9WTK7} Mitochondrion. Late endosome {ECO:0000250|UniProtKB:Q9WTK7}. Note=A small fraction localizes at membranes (By similarity). Relocates to the cytoplasm when bound to STRAD (STRADA or STRADB) and CAB39/MO25 (CAB39/MO25alpha or CAB39L/MO25beta) (PubMed:[18854309](#)). Translocates to the mitochondrion during apoptosis. PTEN promotes cytoplasmic localization (PubMed:[11430832](#)). Translocates to late endosomes in response to calorie restriction (By similarity). {ECO:0000250|UniProtKB:Q9WTK7, ECO:0000269|PubMed:[11430832](#), ECO:0000269|PubMed:[18854309](#)}

Tissue Location

Ubiquitously expressed. Strongest expression in testis and fetal liver

Background

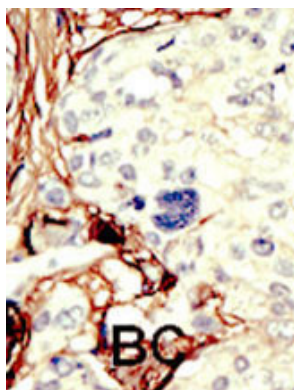
STK11, is a member of the serine/threonine kinase family, regulates cell polarity and functions as a tumor suppressor. Mutations in STK11 have been associated with Peutz-Jeghers syndrome, an autosomal dominant disorder characterized by the growth of polyps in the gastrointestinal tract, pigmented macules on the skin and mouth, and other neoplasms.

References

- Mart, et al., J. Biotechnol. 115(1):23-34 (2005).
 Shaw, R.J., et al., Proc. Natl. Acad. Sci. U.S.A. 101(10):3329-3335 (2004).
 Suzuki, A., et al., Biochem. Biophys. Res. Commun. 324(3):986-992 (2004).

Hearle, N., et al., Genes Chromosomes Cancer 41(2):163-169 (2004).
Corradetti, M.N., et al., Genes Dev. 18(13):1533-1538 (2004).

Images



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- [A novel LKB1 isoform enhances AMPK metabolic activity and displays oncogenic properties.](#)

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