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LATS2 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7035C

Product Information

Application	WB, IHC-P, E
Primary Accession	Q9NRM7
Other Accession	Q9P2X1
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	120136
Antigen Region	228-258

Additional Information

Gene ID	26524
Other Names	Serine/threonine-protein kinase LATS2, Kinase phosphorylated during mitosis protein, Large tumor suppressor homolog 2, Serine/threonine-protein kinase kpm, Warts-like kinase, LATS2 {ECO:0000312|EMBL:BAA923811}, KPM
Target/Specificity	This LATS2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 228-258 amino acids from the Central region of human LATS2.
Dilution	WB~~1:1000 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	LATS2 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	LATS2 {ECO:0000312|EMBL:BAA92381.1}
Synonyms	KPM
Function	Negative regulator of YAP1 in the Hippo signaling pathway that plays a

	pivotal role in organ size control and tumor suppression by restricting proliferation and promoting apoptosis (PubMed:18158288, PubMed:26437443, PubMed:26598551, PubMed:34404733). The core of this pathway is composed of a kinase cascade wherein STK3/MST2 and STK4/MST1, in complex with its regulatory protein SAV1, phosphorylates and activates LATS1/2 in complex with its regulatory protein MOB1, which in turn phosphorylates and inactivates YAP1 oncoprotein and WWTR1/TAZ (PubMed:26437443, PubMed:26598551, PubMed:34404733). Phosphorylation of YAP1 by LATS2 inhibits its translocation into the nucleus to regulate cellular genes important for cell proliferation, cell death, and cell migration (PubMed:26598551, PubMed:34404733). Also phosphorylates YAP1 in response to cell contact inhibition-driven WWP1 ubiquitination of AMOTL2, which results in LATS2 activation (PubMed:34404733). Acts as a tumor suppressor which plays a critical role in centrosome duplication, maintenance of mitotic fidelity and genomic stability (PubMed:10871863). Negatively regulates G1/S transition by down-regulating cyclin E/CDK2 kinase activity (PubMed:12853976). Negative regulator of the androgen receptor (PubMed:15131260). Phosphorylates SNAI1 in the nucleus leading to its nuclear retention and stabilization, which enhances its epithelial-mesenchymal transition and tumor cell invasion/migration activities (PubMed:21952048). This tumor-promoting activity is independent of its effects upon YAP1 or WWTR1/TAZ (PubMed:21952048). Acts as an activator of the NLRP3 inflammasome by mediating phosphorylation of 'Ser-265' of NLRP3 following NLRP3 palmitoylation, promoting NLRP3 activation by NEK7 (PubMed:39173637).
Cellular Location	Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm. Cytoplasm, cytoskeleton, spindle pole Nucleus. Note=Colocalizes with AURKA at the centrosomes during interphase, early prophase and cytokinesis. Migrates to the spindle poles during mitosis, and to the midbody during cytokinesis Translocates to the nucleus upon mitotic stress by nocodazole treatment
Tissue Location	Expressed at high levels in heart and skeletal muscle and at lower levels in all other tissues examined

Background

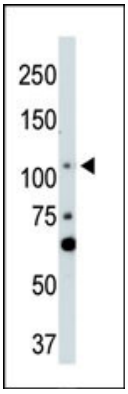
LATS2 is a serine/threonine protein kinase belonging to the LATS tumor suppressor family. This protein localizes to centrosomes during interphase, and early and late metaphase. It interacts with the centrosomal proteins aurora-A and ajuba and is required for accumulation of gamma-tubulin and spindle formation at the onset of mitosis. It also interacts with a negative regulator of p53 and may function in a positive feedback loop with p53 that responds to cytoskeleton damage. Additionally, it can function as a co-repressor of androgen-responsive gene expression.

References

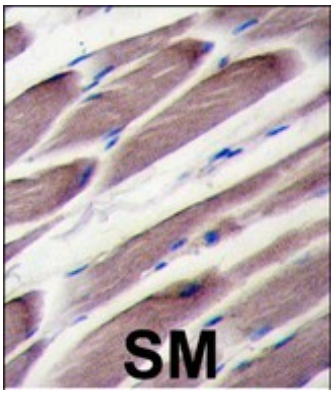
Blume-Jensen P, et al. Nature 2001. 411: 355. Cantrell D, J. Cell Sci. 2001. 114: 1439. Jhiang S Oncogene 2000. 19: 5590. Manning G, et al. Science 2002. 298: 1912. Moller, D, et al. Am. J. Physiol. 1994. 266: C351-C359. Robertson, S. et al. Trends Genet. 2000. 16: 368. Robinson D, et al. Oncogene 2000. 19: 5548. Van der Ven, P, et al. Hum. Molec. Genet. 1993. 2: 1889. Vanhaesebroeck, B, et al. Biochem. J. 2000. 346: 561. Van Weering D, et al. Recent Results Cancer Res. 1998. 154: 271.

Images

The anti-LATS2 Pab (Cat. #AP7035c) is used in Western



blot to detect LATS2 in NIH-3T3 cell lysate.



Formalin-fixed and paraffin-embedded human skeletal muscle tissue reacted with LATS2 antibody (Center), 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.

Citations

- MicroRNA-372 is associated with poor prognosis in colorectal cancer.

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