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

LATS1 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7035a

Product Information

Application	WB, IHC-P, E
Primary Accession	O95835
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	126870
Antigen Region	1-30

Additional Information

Gene ID	9113
Other Names	Serine/threonine-protein kinase LATS1, Large tumor suppressor homolog 1, WARTS protein kinase, h-warts, LATS1 {ECO:0000312|EMBL:AAD168821}
Target/Specificity	This LATS1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1-30 amino acids from the N-terminal region of human LATS1.
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	LATS1 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	LATS1 {ECO:0000312|EMBL:AAD16882.1}
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:10518011, PubMed:10831611, PubMed:18158288, PubMed:26437443, PubMed:28068668). 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:18158288, PubMed:26437443, PubMed:28068668). Phosphorylation of YAP1 by LATS1 inhibits its translocation into the nucleus to regulate cellular genes important for cell proliferation, cell death, and cell migration (PubMed:18158288, PubMed:26437443, PubMed:28068668). Acts as a tumor suppressor which plays a critical role in maintenance of ploidy through its actions in both mitotic progression and the G1 tetraploidy checkpoint (PubMed:15122335, PubMed:19927127). Negatively regulates G2/M transition by down-regulating CDK1 kinase activity (PubMed:9988268). Involved in the control of p53 expression (PubMed:15122335). Affects cytokinesis by regulating actin polymerization through negative modulation of LIMK1 (PubMed:15220930). May also play a role in endocrine function. Plays a role in mammary gland epithelial cell differentiation, both through the Hippo signaling pathway and the intracellular estrogen receptor signaling pathway by promoting the degradation of ESR1 (PubMed:28068668). 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, cytoskeleton, spindle. Midbody. Cytoplasm, cytoskeleton, microtubule organizing center, spindle pole body Note=Localizes to the centrosomes throughout interphase but migrates to the mitotic apparatus, including spindle pole bodies, mitotic spindle, and midbody, during mitosis.
Tissue Location	Expressed in all adult tissues examined except for lung and kidney.

Background

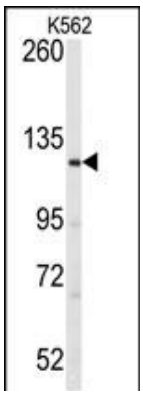
The protein encoded by this gene is a putative serine/threonine kinase that localizes to the mitotic apparatus and complexes with cell cycle controller CDC2 kinase in early mitosis. The protein is phosphorylated in a cell-cycle dependent manner, with late prophase phosphorylation remaining through metaphase. The N-terminal region of the protein binds CDC2 to form a complex showing reduced H1 histone kinase activity, indicating a role as a negative regulator of CDC2/cyclin A. In addition, the C-terminal kinase domain binds to its own N-terminal region, suggesting potential negative regulation through interference with complex formation via intramolecular binding. Biochemical and genetic data suggest a role as a tumor suppressor. This is supported by studies in knockout mice showing development of soft-tissue sarcomas, ovarian stromal cell tumors and a high sensitivity to carcinogenic treatments.

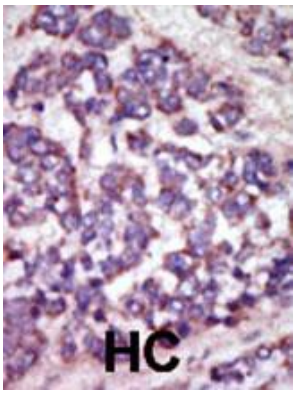
References

Iida, S., et al., Oncogene 23(31):5266-5274 (2004).
Yang, X., et al., Nat. Cell Biol. 6(7):609-617 (2004).
Kamikubo, Y., et al., J. Biol. Chem. 278(20):17609-17614 (2003).
Hisaoka, M., et al., Lab. Invest. 82(10):1427-1435 (2002).
Hirota, T., et al., J. Cell Biol. 149(5):1073-1086 (2000).

Images

Western blot analysis of anti-LATS1 Antibody (N-term) (Cat.#AP7035a) in K562 cell line lysates (35ug/lane). LATS1 (arrow) was detected using the purified Pab.





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

Citations

- Identification of novel posttranscriptional targets of the BCR/ABL oncoprotein by ribonomics: requirement of E2F3 for BCR/ABL leukemogenesis.