

Hamartin / TSC1 Antibody (C-Terminus)
Goat Polyclonal Antibody
Catalog # ALS13430**Specification**

Hamartin / TSC1 Antibody (C-Terminus) - Product Information

Application	IHC
Primary Accession	O92574
Reactivity	Human, Rat, Monkey, Horse, Dog
Host	Goat
Clonality	Polyclonal
Calculated MW	130kDa KDa

Hamartin / TSC1 Antibody (C-Terminus) - Additional Information**Gene ID** 7248**Other Names**

Hamartin, Tuberous sclerosis 1 protein, TSC1, KIAA0243, TSC

Target/Specificity

Human TSC1. This antibody is expected to recognise isoform 1 (NP_000359.1) only.

Reconstitution & Storage

Store at -20°C. Minimize freezing and thawing.

Precautions

Hamartin / TSC1 Antibody (C-Terminus) is for research use only and not for use in diagnostic or therapeutic procedures.

Hamartin / TSC1 Antibody (C-Terminus) - Protein Information**Name** TSC1 {ECO:0000303|PubMed:9242607, ECO:0000312|HGNC:HGNC:12362}**Function**

Non-catalytic component of the TSC-TBC complex, a multiprotein complex that acts as a negative regulator of the canonical mTORC1 complex, an evolutionarily conserved central nutrient sensor that stimulates anabolic reactions and macromolecule biosynthesis to promote cellular biomass generation and growth (PubMed:12172553, PubMed:12271141, PubMed:12906785, PubMed:15340059, PubMed:24529379, PubMed:28215400). The TSC-TBC complex acts as a GTPase-activating protein (GAP) for the small GTPase RHEB, a direct activator of the protein kinase activity of mTORC1 (PubMed:12906785, PubMed:15340059),

PubMed: 24529379). In absence of nutrients, the TSC-TBC complex inhibits mTORC1, thereby preventing phosphorylation of ribosomal protein S6 kinase (RPS6KB1 and RPS6KB2) and EIF4EBP1 (4E-BP1) by the mTORC1 signaling (PubMed: 12271141, PubMed: 24529379, PubMed: 28215400, PubMed: 33215753). The TSC-TBC complex is inactivated in response to nutrients, relieving inhibition of mTORC1 (PubMed: 12172553, PubMed: 24529379). Within the TSC-TBC complex, TSC1 stabilizes TSC2 and prevents TSC2 self-aggregation (PubMed: 10585443, PubMed: 28215400). Acts as a tumor suppressor (PubMed: 9242607). Involved in microtubule-mediated protein transport via its ability to regulate mTORC1 signaling (By similarity). Also acts as a co-chaperone for HSP90AA1 facilitating HSP90AA1 chaperoning of protein clients such as kinases, TSC2 and glucocorticoid receptor NR3C1 (PubMed: 29127155). Increases ATP binding to HSP90AA1 and inhibits HSP90AA1 ATPase activity (PubMed: 29127155). Competes with the activating co-chaperone AHSA1 for binding to HSP90AA1, thereby providing a reciprocal regulatory mechanism for chaperoning of client proteins (PubMed: 29127155). Recruits TSC2 to HSP90AA1 and stabilizes TSC2 by preventing the interaction between TSC2 and ubiquitin ligase HERC1 (PubMed: 16464865, PubMed: 29127155).

Cellular Location

Lysosome membrane; Peripheral membrane protein. Cytoplasm, cytosol Note=Recruited to lysosomal membranes in a RHEB-dependent process in absence of nutrients (PubMed:24529379). In response to nutrients, the complex dissociates from lysosomal membranes and relocates to the cytosol (PubMed:24529379).

Tissue Location

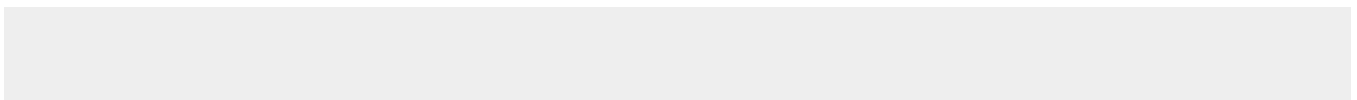
Highly expressed in skeletal muscle, followed by heart, brain, placenta, pancreas, lung, liver and kidney (PubMed:9242607). Also expressed in embryonic kidney cells (PubMed:9242607).

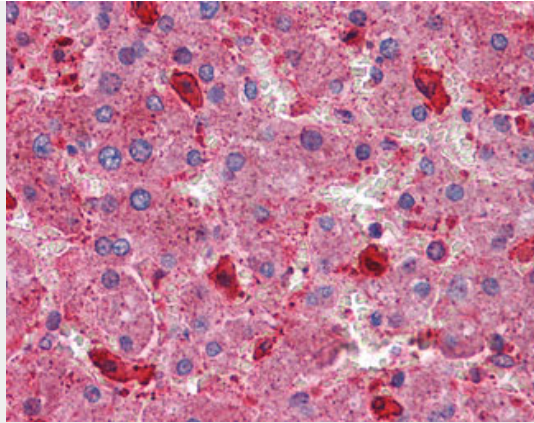
Hamartin / TSC1 Antibody (C-Terminus) - Protocols

Provided below are standard protocols that you may find useful for product applications.

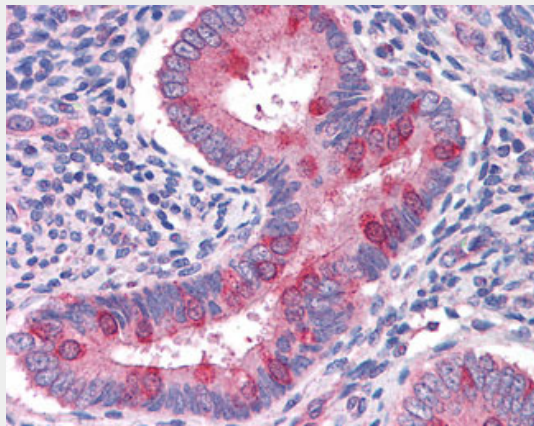
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Hamartin / TSC1 Antibody (C-Terminus) - Images





Anti-TSC1 antibody IHC of human liver.



Anti-TSC1 antibody IHC of human uterus.

Hamartin / TSC1 Antibody (C-Terminus) - Background

In complex with TSC2, inhibits the nutrient-mediated or growth factor-stimulated phosphorylation of S6K1 and EIF4EBP1 by negatively regulating mTORC1 signaling. Seems not to be required for TSC2 GAP activity towards RHEB. Implicated as a tumor suppressor. Involved in microtubule-mediated protein transport, but this seems to be due to unregulated mTOR signaling.

Hamartin / TSC1 Antibody (C-Terminus) - References

- van Slegtenhorst M.A., et al. *Science* 277:805-808(1997).
- Ota T., et al. *Nat. Genet.* 36:40-45(2004).
- Humphray S.J., et al. *Nature* 429:369-374(2004).
- Mural R.J., et al. Submitted (JUL-2005) to the EMBL/GenBank/DDBJ databases.
- Nagase T., et al. *DNA Res.* 3:321-329(1996).