

# Hamartin Polyclonal Antibody

Catalog # AP73943

## Product Information

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<b>Application</b>	WB, E
<b>Primary Accession</b>	<a href="#">Q92574</a>
<b>Reactivity</b>	Human, Rat, Mouse
<b>Host</b>	Rabbit
<b>Clonality</b>	Polyclonal
<b>Calculated MW</b>	129767

## Additional Information

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<b>Gene ID</b>	7248
<b>Other Names</b>	tuberous sclerosis 1
<b>Dilution</b>	WB~~WB 1:500-2000, ELISA 1:10000-20000 E~~N/A
<b>Format</b>	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
<b>Storage Conditions</b>	-20°C

## Protein Information

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<b>Name</b>	TSC1 {ECO:0000303   PubMed:9242607, ECO:0000312   HGNC:HGNC:12362}
<b>Function</b>	<p>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:<a href="#">12172553</a>, PubMed:<a href="#">12271141</a>, PubMed:<a href="#">12906785</a>, PubMed:<a href="#">15340059</a>, PubMed:<a href="#">24529379</a>, PubMed:<a href="#">28215400</a>). 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:<a href="#">12906785</a>, PubMed:<a href="#">15340059</a>, PubMed:<a href="#">24529379</a>). 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:<a href="#">12271141</a>, PubMed:<a href="#">24529379</a>, PubMed:<a href="#">28215400</a>, PubMed:<a href="#">33215753</a>). The TSC-TBC complex is inactivated in response to nutrients, relieving inhibition of mTORC1 (PubMed:<a href="#">12172553</a>, PubMed:<a href="#">24529379</a>). Within the TSC-TBC complex, TSC1 stabilizes TSC2 and prevents TSC2 self-aggregation (PubMed:<a href="#">10585443</a>, PubMed:<a href="#">28215400</a>). Acts as a tumor suppressor (PubMed:<a href="#">9242607</a>). Involved in microtubule-mediated protein transport via its ability to regulate mTORC1 signaling (By similarity).</p>

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](#)).

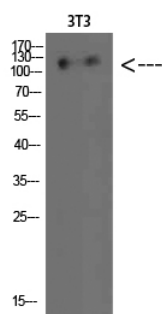
### Tissue Location

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](#)).

## Background

In complex with TSC2, inhibits the nutrient-mediated or growth factor-stimulated phosphorylation of S6K1 and EIF4EBP1 by negatively regulating mTORC1 signaling (PubMed:[12271141](#), PubMed:[28215400](#)). Seems not to be required for TSC2 GAP activity towards RHEB (PubMed:[15340059](#)). Implicated as a tumor suppressor. Involved in microtubule-mediated protein transport, but this seems to be due to unregulated mTOR signaling (By similarity). 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](#)).

## Images



Western Blot analysis of 3T3 cells using Hamartin Polyclonal Antibody diluted at 1:500. Secondary antibody was diluted at 1:20000

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