

**TSC1 Antibody**  
**Mouse Monoclonal Antibody (Mab)**  
**Catalog # AM1977b**

## Specification

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### TSC1 Antibody - Product Information

Application	WB,E
Primary Accession	<a href="#">O92574</a>
Other Accession	<a href="#">NP_000359.1</a> , <a href="#">NP_001155898.1</a>
Reactivity	Human, Mouse
Host	Mouse
Clonality	Monoclonal
Isotype	IgG2b
Calculated MW	129767

### TSC1 Antibody - Additional Information

**Gene ID** 7248

#### Other Names

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

#### Target/Specificity

Purified His-tagged TSC1 protein(Fragment) was used to produced this monoclonal antibody.

#### Dilution

WB~~1:500~1000

#### Format

Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, 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

TSC1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

### TSC1 Antibody - 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

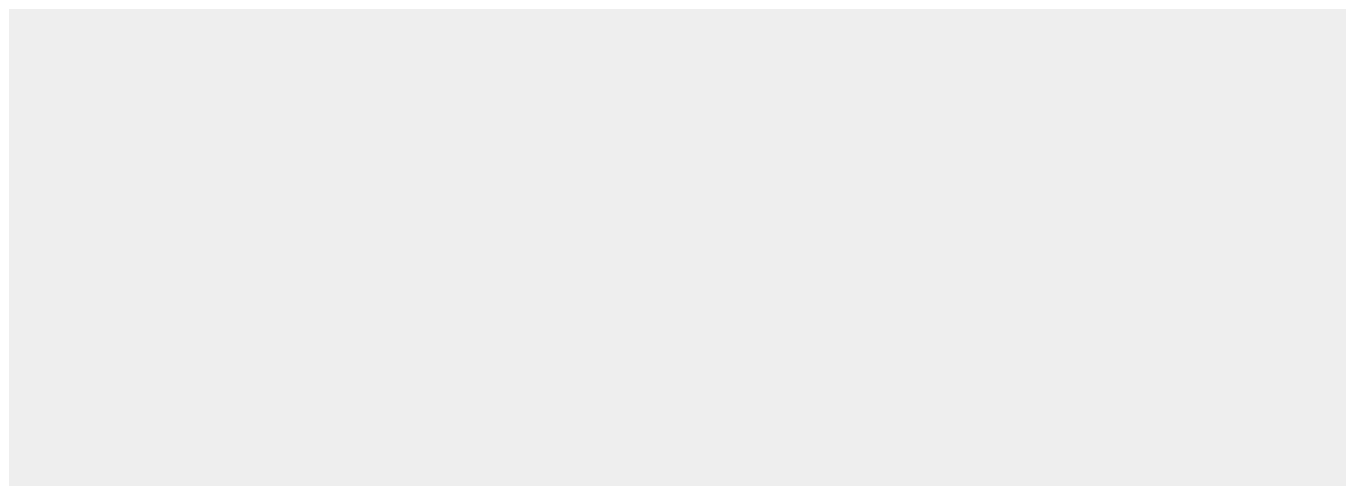
Highly expressed in skeletal muscle, followed by heart, brain, placenta, pancreas, lung, liver and kidney (PubMed:9242607). Also expressed in embryonic kidney cells (PubMed:9242607).

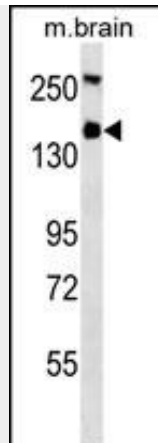
#### TSC1 Antibody - Protocols

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](#)

#### TSC1 Antibody - Images





TSC1 Antibody (Cat. #AM1977b) western blot analysis in mouse brain tissue lysates (35µg/lane). This demonstrates the TSC1 antibody detected the TSC1 protein (arrow).

### **TSC1 Antibody - Background**

This gene encodes a growth inhibitory protein thought to play a role in the stabilization of tuberin. Mutations in this gene have been associated with tuberous sclerosis. Alternative splicing results in multiple transcript variants.

### **TSC1 Antibody - References**

Hoogeveen-Westerveld, M., et al. *Biochim. Biophys. Acta* 1802(9):774-781(2010)  
Mehta, M.S., et al. *Breast Cancer Res. Treat.* (2010) In press :  
Mieulet, V., et al. *Trends Mol Med* 16(7):329-335(2010)  
Liu, C.Y., et al. *Carcinogenesis* 31(7):1259-1263(2010)  
Guo, L., et al. *Acta Biochim. Biophys. Sin. (Shanghai)* 42(4):266-273(2010)