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

# TSC1 Antibody (Ascites)

Mouse Monoclonal Antibody (Mab)
Catalog # AM1977a

## Product Information

| | |
|---|---|
| **Application** | WB, E |
| **Primary Accession** | Q92574 |
| **Other Accession** | NP_001155899.1, NP_001155898.1 |
| **Reactivity** | Mouse |
| **Host** | Mouse |
| **Clonality** | Monoclonal |
| **Isotype** | IgG2b |
| **Clone Names** | 357CT4.4.2 |
| **Calculated MW** | 129767 |

## 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~~1:500~8000 E~~Use at an assay dependent concentration. |
| **Format** | Mouse monoclonal antibody supplied in crude ascites with 0.09% (W/V) sodium azide. |
| **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 (Ascites) is for research use only and not for use in diagnostic or therapeutic procedures. |

## 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 relocalizes 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

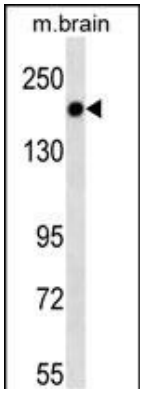
This gene encodes a growth inhibitory protein thought to play a role in the stabilization of tuberin. Mutations in this gene have been associated with tuberous sclerosis. Alternative splicing results in multiple transcript variants.

## 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)

## Images

TSC1 antibody (Cat. #AM1977a) western blot analysis in mouse brain tissue lysates (35µg/lane).This demonstrates the TSC1 antibody detected the TSC1 protein (arrow).




Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.