

TSC1 Antibody (Center T417)
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP20328c

Specification

TSC1 Antibody (Center T417) - Product Information

| | |
|-------------------|------------------------|
| Application | WB,E |
| Primary Accession | Q92574 |
| Reactivity | Human |
| Host | Rabbit |
| Clonality | Polyclonal |
| Isotype | Rabbit IgG |
| Calculated MW | 129767 |
| Antigen Region | 395-424 |

TSC1 Antibody (Center T417) - Additional Information

Gene ID 7248

Other Names

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

Target/Specificity

This TSC1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 395-424 amino acids from the Central region of human TSC1.

Dilution

WB~~1:1000

E~~Use at an assay dependent concentration.

Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

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 (Center T417) is for research use only and not for use in diagnostic or therapeutic procedures.

TSC1 Antibody (Center T417) - 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

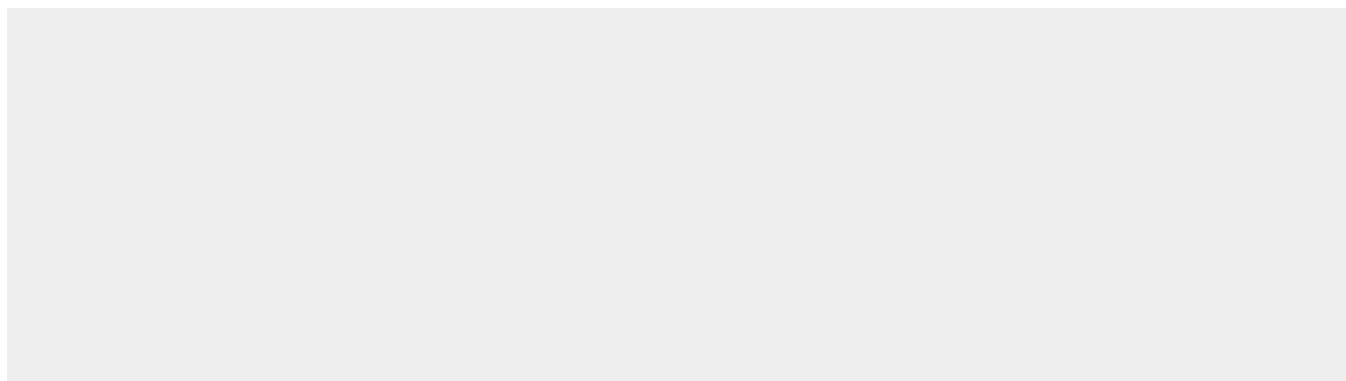
Highly expressed in skeletal muscle, followed by heart, brain, placenta, pancreas, lung, liver and kidney (PubMed:[9242607](#)). Also expressed in embryonic kidney cells (PubMed:[9242607](#)).

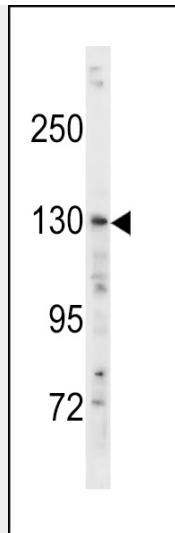
TSC1 Antibody (Center T417) - Protocols

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 (Center T417) - Images





TSC1 Antibody (Center T417) (Cat. #AP20328c) western blot analysis in SK-BR-3 cell line lysates (35ug/lane). This demonstrates the TSC1 antibody detected the TSC1 protein (arrow).

TSC1 Antibody (Center T417) - 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.