

**TSC2 Antibody (Center S1418/S1420)**  
**Affinity Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP20077c**

**Specification**

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**TSC2 Antibody (Center S1418/S1420) - Product Information**

Application	WB, IHC-P,E
Primary Accession	<a href="#">P49815</a>
Other Accession	<a href="#">NP_000539.2</a>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	200608
Antigen Region	1397-1426

**TSC2 Antibody (Center S1418/S1420) - Additional Information**

**Gene ID** 7249

**Other Names**

Tuberin, Tuberous sclerosis 2 protein, TSC2, TSC4

**Target/Specificity**

This TSC2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1397-1426 amino acids from the Central region of human TSC2.

**Dilution**

WB~~1:1000

IHC-P~~1:25

**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**

TSC2 Antibody (Center S1418/S1420) is for research use only and not for use in diagnostic or therapeutic procedures.

**TSC2 Antibody (Center S1418/S1420) - Protein Information**

**Name** TSC2 {ECO:0000303|PubMed:7558029, ECO:0000312|HGNC:HGNC:12363}

**Function** 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:[12842888](#), PubMed:[12906785](#), PubMed:[15340059](#), PubMed:[22819219](#), PubMed:[24529379](#), PubMed:[28215400](#), PubMed:[33436626](#), PubMed:[35772404](#)). Within the TSC-TBC complex, TSC2 acts as a GTPase- activating protein (GAP) for the small GTPase RHEB, a direct activator of the protein kinase activity of mTORC1 (PubMed:[12172553](#), PubMed:[12820960](#), PubMed:[12842888](#), PubMed:[12906785](#), PubMed:[15340059](#), PubMed:[22819219](#), PubMed:[24529379](#), PubMed:[33436626](#)). 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:[12172553](#), PubMed:[12271141](#), PubMed:[12842888](#), PubMed:[12906785](#), PubMed:[22819219](#), PubMed:[24529379](#), PubMed:[28215400](#), PubMed:[35772404](#)). The TSC-TBC complex is inactivated in response to nutrients, relieving inhibition of mTORC1 (PubMed:[12172553](#), PubMed:[24529379](#)). Involved in microtubule-mediated protein transport via its ability to regulate mTORC1 signaling (By similarity). Also stimulates the intrinsic GTPase activity of the Ras- related proteins RAP1A and RAB5 (By similarity).

#### Cellular Location

Lysosomal 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 insulin signaling and phosphorylation by PKB/AKT1, the complex dissociates from lysosomal membranes and relocates to the cytosol (PubMed:24529379)

#### Tissue Location

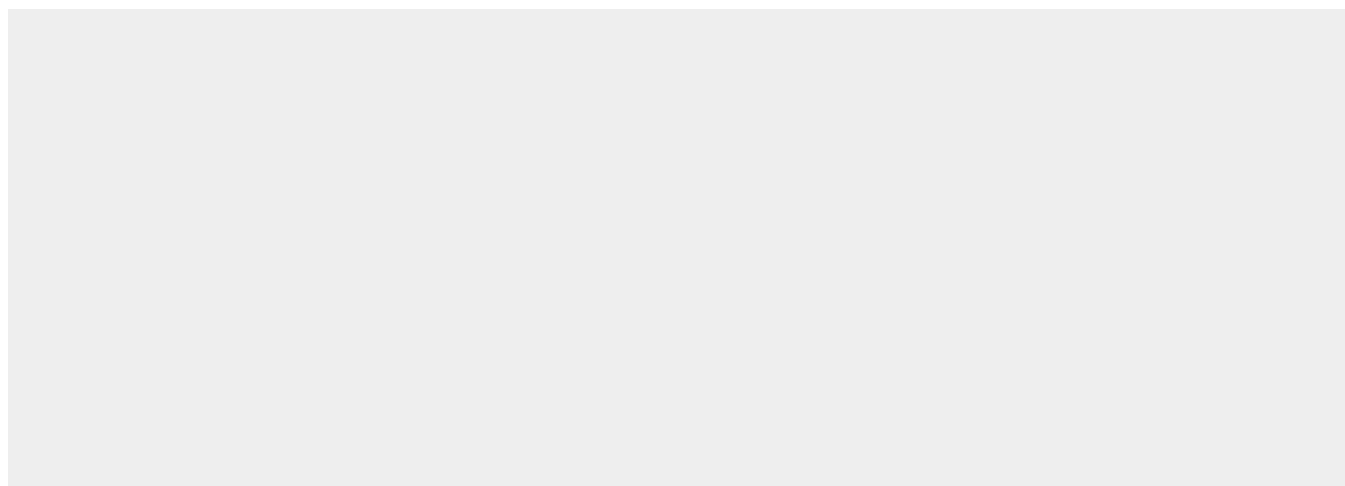
Liver, brain, heart, lymphocytes, fibroblasts, biliary epithelium, pancreas, skeletal muscle, kidney, lung and placenta.

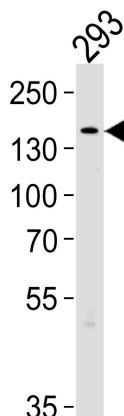
### TSC2 Antibody (Center S1418/S1420) - Protocols

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

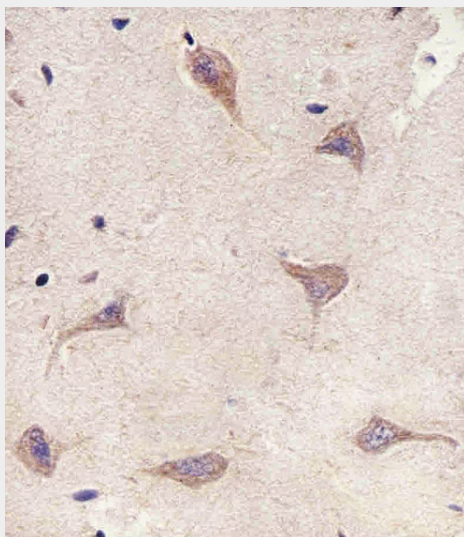
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### TSC2 Antibody (Center S1418/S1420) - Images





TSC2 Antibody (Center S1418/S1420) (Cat. #AP20077c) western blot analysis in 293 cell line lysates (35ug/lane). This demonstrates the TSC2 antibody detected the TSC2 protein (arrow).



Immunohistochemical analysis of paraffin-embedded H. brain section using TSC2 Antibody (Center S1418/S1420)(Cat#AP20077c). AP20077c was diluted at 1:25 dilution. A undiluted biotinylated goat polyvalent antibody was used as the secondary, followed by DAB staining.

### **TSC2 Antibody (Center S1418/S1420) - Background**

Mutations in this gene lead to tuberous sclerosis complex. Its gene product is believed to be a tumor suppressor and is able to stimulate specific GTPases. The protein associates with hamartin in a cytosolic complex, possibly acting as a chaperone for hamartin. Alternative splicing results in multiple transcript variants encoding different isoforms.

### **TSC2 Antibody (Center S1418/S1420) - References**

- Slattery, M.L., et al. Carcinogenesis 31(9):1604-1611(2010)
- Larson, Y., et al. J. Biol. Chem. 285(32):24987-24998(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)