

**Tuberin (TSC2) Antibody (S1798)**  
**Affinity Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP6348D**

**Specification**

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**Tuberin (TSC2) Antibody (S1798) - Product Information**

Application	IF, WB, IHC-P,E
Primary Accession	<a href="#">P49815</a>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Antigen Region	1776-1805

**Tuberin (TSC2) Antibody (S1798) - Additional Information**

**Gene ID** 7249

**Other Names**

Tuberin, Tuberous sclerosis 2 protein, TSC2, TSC4

**Target/Specificity**

This Tuberin (TSC2) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1776-1805 amino acids from human Tuberin (TSC2).

**Dilution**

IF~~1:10~50  
WB~~1:1000  
IHC-P~~1:10~50

**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**

Tuberin (TSC2) Antibody (S1798) is for research use only and not for use in diagnostic or therapeutic procedures.

**Tuberin (TSC2) Antibody (S1798) - 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**

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

#### **Tissue Location**

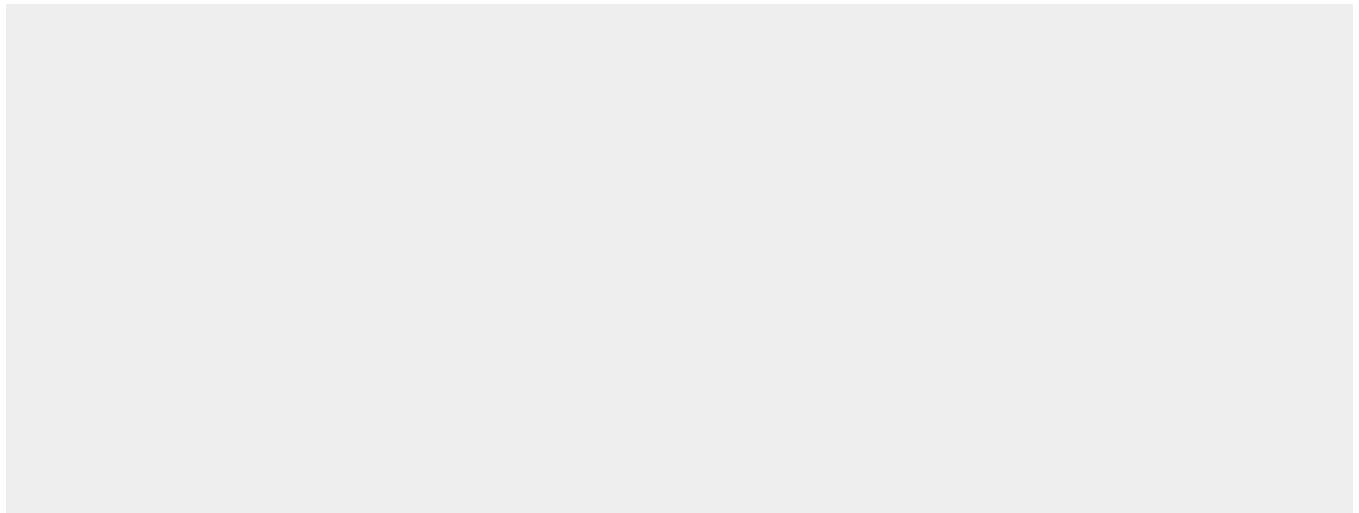
Liver, brain, heart, lymphocytes, fibroblasts, biliary epithelium, pancreas, skeletal muscle, kidney, lung and placenta.

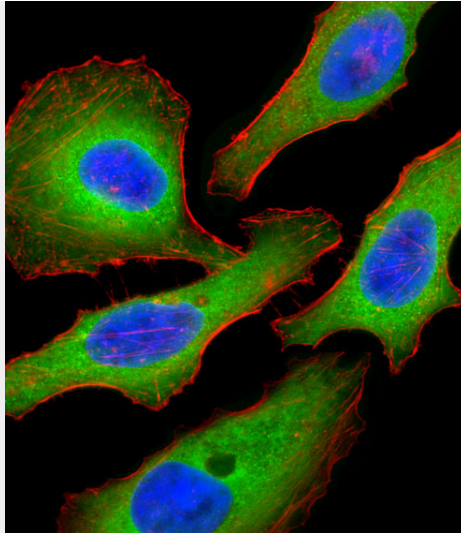
### **Tuberin (TSC2) Antibody (S1798) - Protocols**

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

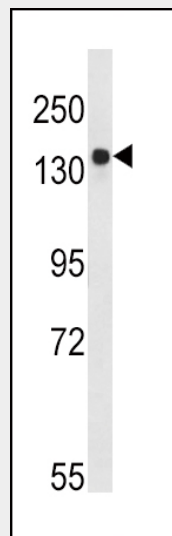
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### **Tuberin (TSC2) Antibody (S1798) - Images**

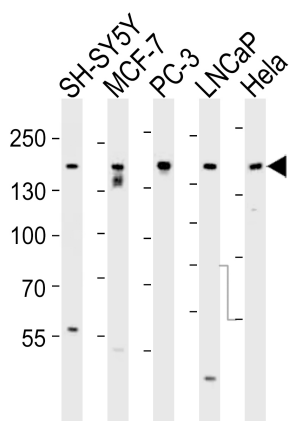




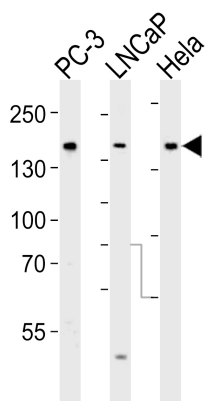
Fluorescent confocal image of HeLa cell stained with Tuberin (TSC2) Antibody (S1798)(Cat#AP6348d).HeLa cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with Tuberin (TSC2) primary antibody (1:25, 1 h at 37°C). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37°C).Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37°C). Nuclei were counterstained with DAPI (blue) (10 µg/ml, 10 min).Tuberin (TSC2) immunoreactivity is localized to Cytoplasm significantly.



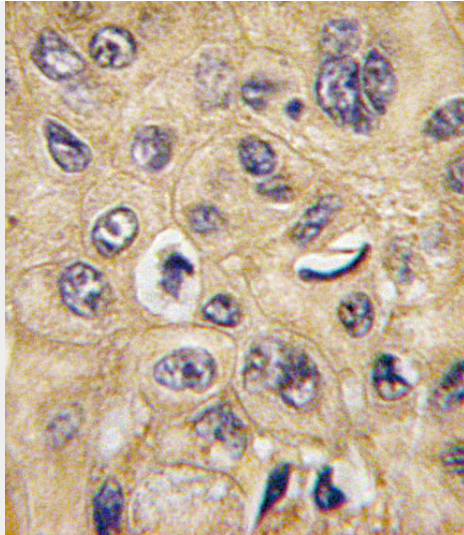
Western blot analysis of TSC2-pS1798 (Cat. #AP6348d) in Ramos cell line lysates (35ug/lane). TSC2 (arrow) was detected using the purified Pab.



Western blot analysis of lysates from SH-SY5Y, MCF-7, PC-3, LNCaP, HeLa, cell line (from left to right), using Tuberin (TSC2) Antibody(Cat. #AP6348d). AP6348d was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysates at 35ug per lane.



Western blot analysis of lysates from PC-3, LNCaP, HeLa cell line (from left to right), using Tuberin (TSC2) Antibody(Cat. #AP6348d). AP6348d was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysates at 35ug per lane.



Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with TSC2 Antibody (S1798) (Cat.#AP6348d), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

#### **Tuberin (TSC2) Antibody (S1798) - Background**

Mutations in TSC2 lead to tuberous sclerosis complex. This protein is believed to be a tumor suppressor and is able to specifically stimulate the intrinsic GTPase activity of the Ras-related protein RAP1A and RAB5. TSC2 associates with hamartin in a cytosolic complex, possibly acting as a chaperone for hamartin. It may have a function in vesicular transport, but may also play a role in the regulation of cell growth arrest and in the regulation of transcription mediated by steroid receptors. Interaction between TSC1 and TSC2 may facilitate vesicular docking.

#### **Tuberin (TSC2) Antibody (S1798) - References**

- Li, Y., et al., Mol. Cell. Biol. 24(18):7965-7975 (2004).
- Karbowiczek, M., et al., J. Biol. Chem. 279(29):29930-29937 (2004).
- Corradetti, M.N., et al., Genes Dev. 18(13):1533-1538 (2004).
- Birchenall-Roberts, M.C., et al., J. Biol. Chem. 279(24):25605-25613 (2004).
- Lewis, J.C., et al., J. Med. Genet. 41(3):203-207 (2004).