

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

Specification

Tuberin (TSC2) Antibody (S1798) - Product Information

Application	WB, IF, IHC-P,E
Primary Accession	P49815
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

WB~~1:1000

IF~~1:10~50

IHC-P~~1:10~50

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

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

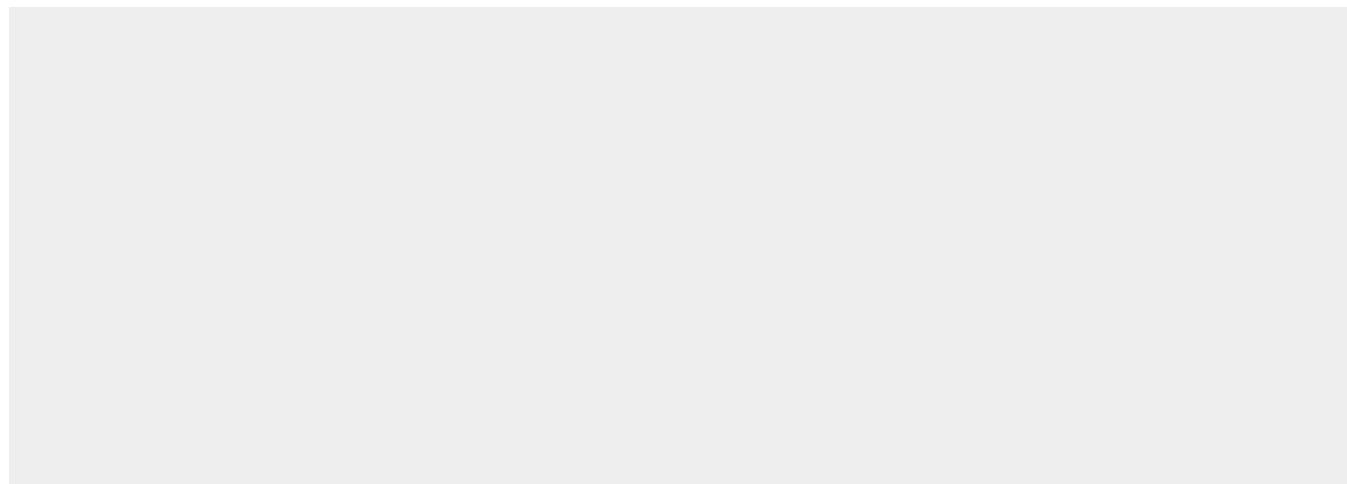
Liver, brain, heart, lymphocytes, fibroblasts, biliary epithelium, pancreas, skeletal muscle, kidney, lung and placenta.

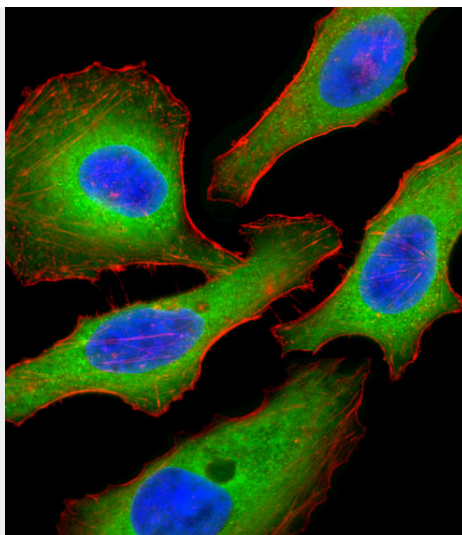
Tuberin (TSC2) Antibody (S1798) - Protocols

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

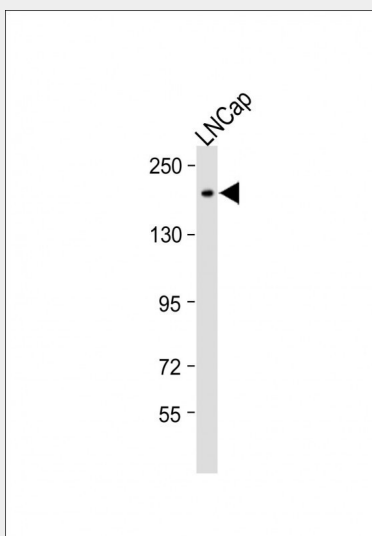
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Tuberin (TSC2) Antibody (S1798) - Images

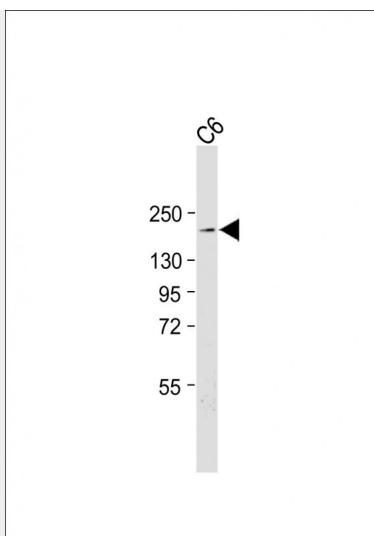




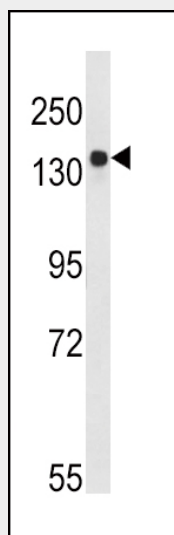
Fluorescent confocal image of HeLa cell stained with Tuberin (TSC2) Antibody (S1798)(Cat#AP6348d). HeLa cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with Tuberin (TSC2) primary antibody (1:25, 1 h at 37°C). For secondary antibody, Alexa Fluor® 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.



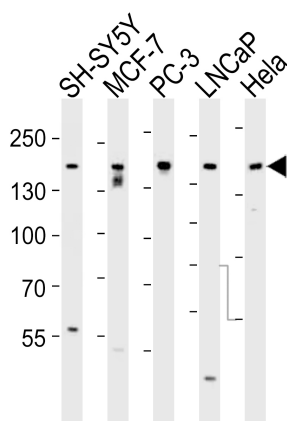
All lanes : Anti-TSC2-S1798/S1799 at 1:2000 dilution Lane 1: LNCap whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size : 200kDa Blocking/Dilution buffer: 5% NFDM/TBST.



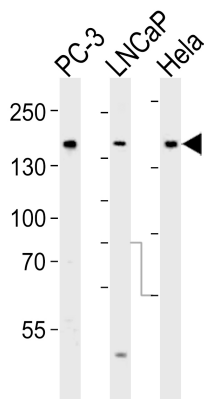
All lanes : Anti-TSC2-S1798/S1799 at 1:500 dilution Lane 1: C6 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size : 200kDa Blocking/Dilution buffer: 5% NFDM/TBST.



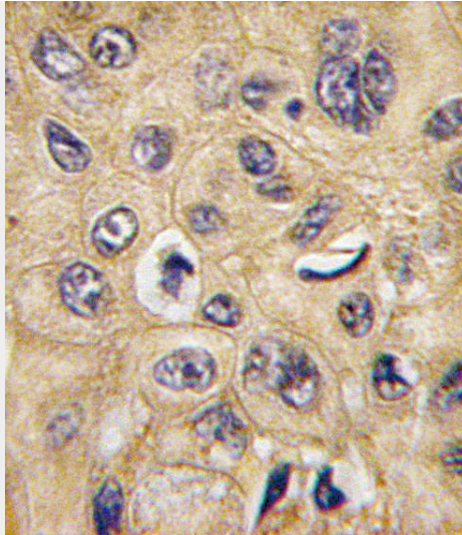
Western blot analysis of TSC2-pS1798 (Cat. #AP6348d) in Ramos cell line lysates (35ug/lane). TSC2 (arrow) was detected using the purified Pab.



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).