

TSC2-S1798/S1799

Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP22393a

Specification

TSC2-S1798/S1799 - Product Information

Application	WB,E
Primary Accession	<u>P49815</u>
Host	Rabbit
Clonality	polyclonal
Isotype	Rabbit IgG
Calculated MW	200608

TSC2-S1798/S1799 - Additional Information

Gene ID 7249

Other Names Tuberin, Tuberous sclerosis 2 protein, TSC2, TSC4

Target/Specificity

This antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between amino acids from human.

Dilution WB~~1:500 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-

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-S1798/S1799 is for research use only and not for use in diagnostic or therapeutic procedures.

TSC2-S1798/S1799 - 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:<u>12172553</u>, PubMed:<u>12271141</u>, PubMed:<u>12842888</u>,



PubMed:<u>12906785</u>, PubMed:<u>15340059</u>, PubMed:<u>22819219</u>, PubMed:<u>24529379</u>,

PubMed:<u>28215400</u>, PubMed:<u>33436626</u>, PubMed:<u>35772404</u>). 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:<u>12172553</u>, PubMed:<u>12820960</u>, PubMed:<u>12842888</u>, PubMed:<u>12906785</u>, PubMed:<u>15340059</u>, PubMed:<u>22819219</u>, PubMed:<u>24529379</u>, PubMed:<u>33436626</u>). 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:<u>12172553</u>, PubMed:<u>12271141</u>, PubMed:<u>12842888</u>, PubMed:<u>12906785</u>, PubMed:<u>22819219</u>, PubMed:<u>24529379</u>, PubMed:<u>12842888</u>, PubMed:<u>12906785</u>, PubMed:<u>22819219</u>, PubMed:<u>24529379</u>, PubMed:<u>28215400</u>, PubMed:<u>35772404</u>). The TSC-TBC complex is inactivated in response to nutrients, relieving inhibition of mTORC1 (PubMed:<u>12172553</u>, PubMed:<u>24529379</u>). 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 relocalizes to the cytosol (PubMed:24529379)

Tissue Location

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

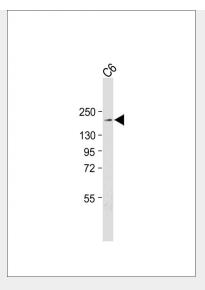
TSC2-S1798/S1799 - Protocols

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

- <u>Western Blot</u>
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

TSC2-S1798/S1799 - Images





All lanes : Anti-TSC2-S1798/S1799 at 1:500 dilution Lane 1: C6 whole cell lysate Lysates/proteins at 20 μ g 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.

TSC2-S1798/S1799 - Background

In complex with TSC1, this tumor suppressor inhibits the nutrient-mediated or growth factor-stimulated phosphorylation of S6K1 and EIF4EBP1 by negatively regulating mTORC1 signaling (PubMed:12271141, PubMed:28215400). Acts as a GTPase-activating protein (GAP) for the small GTPase RHEB, a direct activator of the protein kinase activity of mTORC1 (PubMed:15340059). May also play a role in microtubule-mediated protein transport (By similarity). Also stimulates the intrinsic GTPase activity of the Ras-related proteins RAP1A and RAB5 (By similarity).

TSC2-S1798/S1799 - References

Nellist M., et al.Cell 75:1305-1315(1993). Sampson J.R., et al.Submitted (DEC-1998) to the EMBL/GenBank/DDBJ databases. Xu L., et al.Genomics 27:475-480(1995). Maheshwar M.M., et al.Hum. Mol. Genet. 5:131-137(1996). Corominas R., et al.Nat. Commun. 5:3650-3650(2014).