

TSC2 (pT1462) Antibody
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP51590

Specification

TSC2 (pT1462) Antibody - Product Information

Application	WB, ICC, IHC-P, E
Primary Accession	P49815
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	180 KDa

TSC2 (pT1462) Antibody - Additional Information

Gene ID 7249

Other Names

Tuberin, Tuberous sclerosis 2 protein, TSC2, TSC4

Format

0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%

Storage

Store at -20 °C. Stable for 12 months from date of receipt

TSC2 (pT1462) Antibody - 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](http://www.uniprot.org/citations/12172553) target="_blank">12172553, PubMed: [12271141](http://www.uniprot.org/citations/12271141) target="_blank">12271141, PubMed: [12842888](http://www.uniprot.org/citations/12842888) target="_blank">12842888, PubMed: [12906785](http://www.uniprot.org/citations/12906785) target="_blank">12906785, PubMed: [15340059](http://www.uniprot.org/citations/15340059) target="_blank">15340059, PubMed: [22819219](http://www.uniprot.org/citations/22819219) target="_blank">22819219, PubMed: [24529379](http://www.uniprot.org/citations/24529379) target="_blank">24529379, PubMed: [28215400](http://www.uniprot.org/citations/28215400) target="_blank">28215400, PubMed: [33436626](http://www.uniprot.org/citations/33436626) target="_blank">33436626, PubMed: [35772404](http://www.uniprot.org/citations/35772404) target="_blank">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](http://www.uniprot.org/citations/12172553) target="_blank">12172553, PubMed: [12820960](http://www.uniprot.org/citations/12820960)

target="_blank">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.

TSC2 (pT1462) Antibody - 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 (pT1462) Antibody - Images

TSC2 (pT1462) Antibody - Background

In complex with TSC1, inhibits the nutrient-mediated or growth factor-stimulated phosphorylation of S6K1 and EIF4EBP1 by negatively regulating mTORC1 signaling. Acts as a GTPase- activating protein (GAP) for the small GTPase RHEB, a direct activator of the protein kinase activity of mTORC1. Implicated as a tumor suppressor. Involved in microtubule-mediated protein transport, but this seems to be due to unregulated mTOR signaling. Stimulates weakly the intrinsic GTPase

activity of the Ras-related proteins RAP1A and RAB5 in vitro. Mutations in TSC2 lead to constitutive activation of RAP1A in tumors.

TSC2 (pT1462) Antibody - 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).
Nakajima D., et al. Submitted (MAR-2005) to the EMBL/GenBank/DDBJ databases.