

Phospho-TSC2(S1387) Antibody
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP3338a

Specification

Phospho-TSC2(S1387) Antibody - Product Information

Application	IF, DB,E
Primary Accession	P49815
Other Accession	P49816 , Q61037
Reactivity	Human
Predicted	Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG

Phospho-TSC2(S1387) Antibody - 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 phosphopeptide corresponding to amino acid residues surrounding S1387 of human TSC2.

Dilution

IF~~1:10~50

DB~~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 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

Phospho-TSC2(S1387) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Phospho-TSC2(S1387) 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](#), 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.

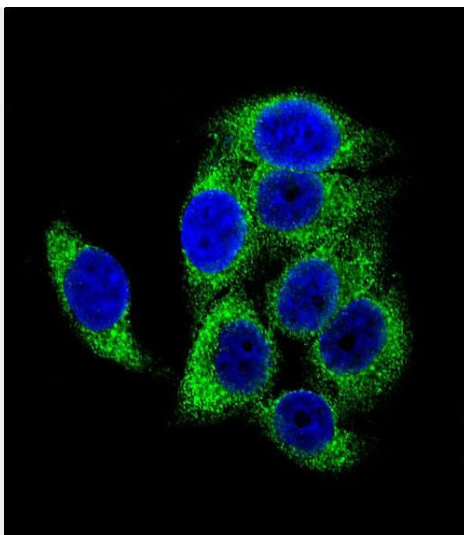
Phospho-TSC2(S1387) Antibody - Protocols

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

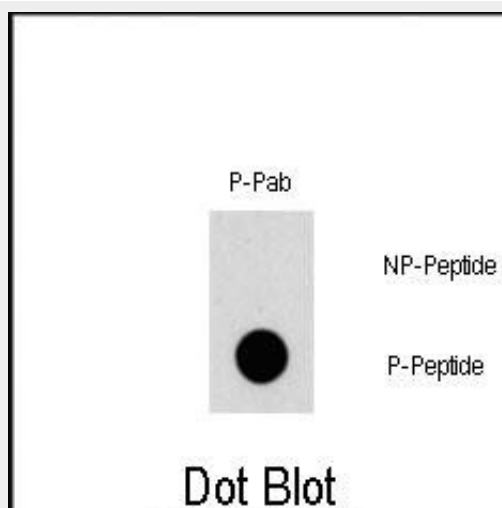
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Phospho-TSC2(S1387) Antibody - Images





Confocal immunofluorescent analysis of Phospho-TSC2-S1387 Antibody (Cat#AP3338a) with HeLa cell followed by Alexa Fluor 488-conjugated goat anti-rabbit IgG (green). DAPI was used to stain the cell nuclear (blue).



Dot blot analysis of Phospho-TSC2-S1387 polyclonal antibody (Cat# AP3338a) on nitrocellulose membrane. 50ng of Phospho-peptide or Non Phospho-peptide per dot were adsorbed. Antibody working concentration was 0.5ug per ml. P-Pab: phospho-antibody; P-Peptide: phospho-peptide; NP-Peptide: non-phospho-peptide.

Phospho-TSC2(S1387) Antibody - Background

Mutations in TSC2 lead to tuberous sclerosis complex. The 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. The protein associates with hamartin in a cytosolic complex, possibly acting as a chaperone for hamartin. TSC2 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.

Phospho-TSC2(S1387) Antibody - 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).

Phospho-TSC2(S1387) Antibody - Citations

- [Phospho- \$\gamma\$ -H2AX/Rpn13-dependent regulation of LKB1 degradation modulates autophagy in cancer cells.](#)