

Phospho-TSC2(S939) Antibody

Affinity Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP3415a

Specification

Phospho-TSC2(S939) Antibody - Product Information

Application	IF, DB,E
Primary Accession	<u>P49815</u>
Other Accession	<u>Q61037</u>
Reactivity	Human
Predicted	Mouse
Host	Rabbit
Clonality	Polyclonal
lsotype	Rabbit IgG

Phospho-TSC2(S939) 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 S939 of human TSC2.

Dilution IF~~1:10~50 DB~~1:500

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(S939) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Phospho-TSC2(S939) 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:<u>12172553</u>, PubMed:<u>12271141</u>, PubMed:<u>12842888</u>, PubMed:12906785, PubMed:15340059, PubMed:22819219, PubMed:24529379,

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>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.

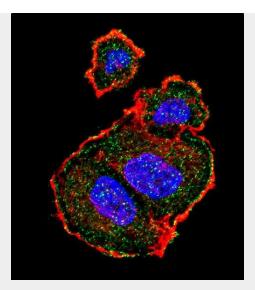
Phospho-TSC2(S939) Antibody - Protocols

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

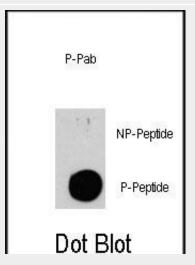
- <u>Western Blot</u>
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

Phospho-TSC2(S939) Antibody - Images





Confocal immunofluorescent analysis of Phospho-TSC2-pS939 Antibody(Cat#AP3415a) with MCF-7 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).Actin filaments have been labeled with Alexa Fluor 555 phalloidin (red).DAPI was used to stain the cell nuclear (blue).



Dot blot analysis of anti-TSC2-pS939 Phospho-specific Pab (Cat.AP3415a) on nitrocellulose membrane. 50ng of Phospho-peptide or Non Phospho-peptide per dot were adsorbed. Antibody working concentrations are 0.5ug per ml.

Phospho-TSC2(S939) 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(S939) Antibody - References

Li, Y., et al., Mol. Cell. Biol. 24(18):7965-7975 (2004). Karbowniczek, 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).