

# Phospho-TSC2(S1388) Antibody

Affinity Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP3899a

## Product Information

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Application	DB, E
Primary Accession	<a href="#">P49815</a>
Other Accession	<a href="#">P49816</a> , <a href="#">Q61037</a> , <a href="#">NP_000539.2</a>
Reactivity	Human
Predicted	Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB42384
Calculated MW	200608

## Additional Information

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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 S1388 of human TSC2.
Dilution	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(S1388) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## Protein Information

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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.

## Background

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Mutations in this gene lead to tuberous sclerosis complex. Its gene product is believed to be a tumor suppressor and is able to stimulate specific GTPases. The protein associates with hamartin in a cytosolic complex, possibly acting as a chaperone for hamartin. Alternative splicing results in multiple transcript variants encoding different isoforms.

## References

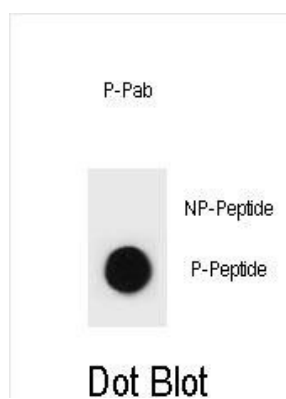
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Larson, Y., et al. J. Biol. Chem. 285(32):24987-24998(2010)  
Mehta, M.S., et al. Breast Cancer Res. Treat. (2010) In press :  
Mieulet, V., et al. Trends Mol Med 16(7):329-335(2010)  
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## Images

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Dot blot analysis of TSC2 Antibody (Phospho S1388)  
Phospho-specific Pab (Cat. #AP3899a) on nitrocellulose  
membrane. 50ng of Phospho-peptide or Non  
Phospho-peptide per dot were adsorbed. Antibody  
working concentrations are 0.6ug per ml.



Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.