

**Phospho-mouse TSC1(S312) Antibody**  
**Affinity Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP3812a**

## Specification

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### Phospho-mouse TSC1(S312) Antibody - Product Information

Application	DB,E
Primary Accession	<a href="#">O9EP53</a>
Other Accession	<a href="#">NP_075025.2</a>
Reactivity	Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	128746

### Phospho-mouse TSC1(S312) Antibody - Additional Information

**Gene ID** 64930

#### Other Names

Hamartin, Tuberous sclerosis 1 protein homolog, Tsc1, Kiaa0243

#### Target/Specificity

This mouse TSC1 Antibody is generated from rabbits immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding S312 of mouse TSC1.

#### Dilution

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-mouse TSC1(S312) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

### Phospho-mouse TSC1(S312) Antibody - Protein Information

**Name** Tsc1 {ECO:0000303|PubMed:11130985, ECO:0000312|MGI:MGI:1929183}

**Function** Non-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:[12820960](#)). The TSC-TBC complex acts as a GTPase-activating protein (GAP) for the small GTPase RHEB, a direct activator of the protein kinase activity of mTORC1 (PubMed:[12820960](#)). 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:[12820960](#)). The TSC-TBC complex is inactivated in response to nutrients, relieving inhibition of mTORC1 (By similarity). Within the TSC-TBC complex, TSC1 stabilizes TSC2 and prevents TSC2 self-aggregation (By similarity). Involved in microtubule-mediated protein transport via its ability to regulate mTORC1 signaling (PubMed:[16707451](#)). Also acts as a co-chaperone for HSP90AA1 facilitating HSP90AA1 chaperoning of protein clients such as kinases, TSC2 and glucocorticoid receptor NR3C1 (By similarity). Increases ATP binding to HSP90AA1 and inhibits HSP90AA1 ATPase activity (PubMed:[29127155](#)). Competes with the activating co-chaperone AHSA1 for binding to HSP90AA1, thereby providing a reciprocal regulatory mechanism for chaperoning of client proteins (By similarity). Recruits TSC2 to HSP90AA1 and stabilizes TSC2 by preventing the interaction between TSC2 and ubiquitin ligase HERC1 (By similarity).

### Cellular Location

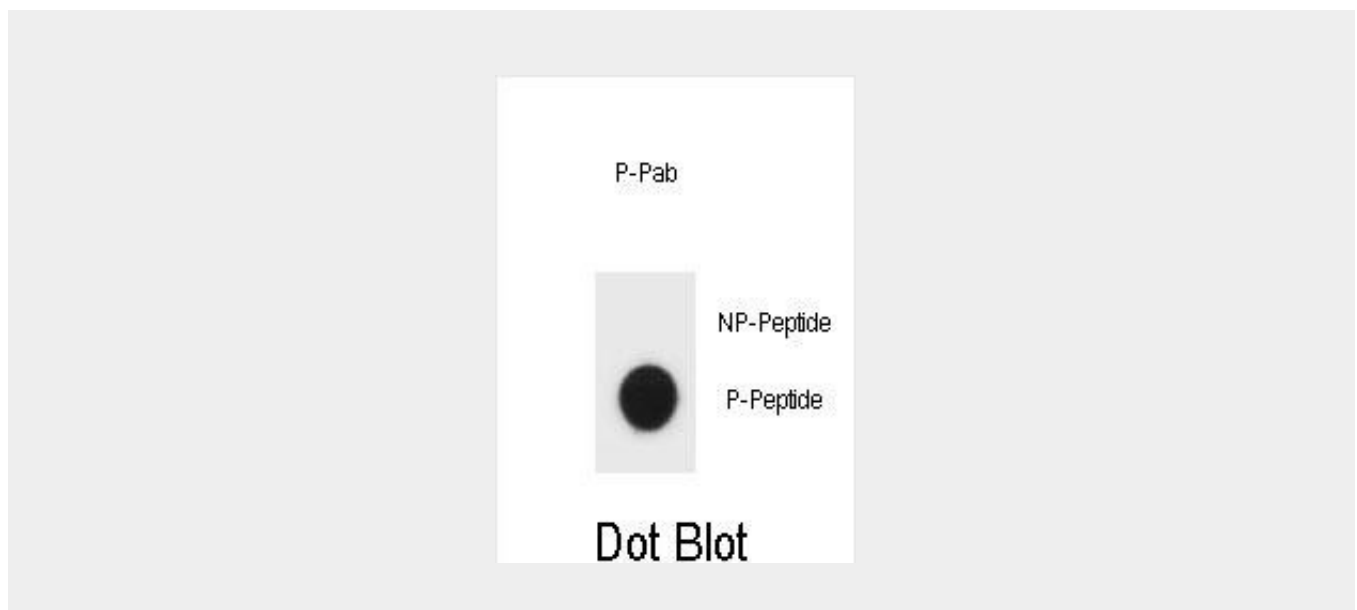
Lysosome membrane {ECO:0000250|UniProtKB:Q92574}; Peripheral membrane protein {ECO:0000250|UniProtKB:Q92574}. Cytoplasm, cytosol {ECO:0000250|UniProtKB:Q92574}. Note=Recruited to lysosomal membranes in a RHEB-dependent process in absence of nutrients. In response to nutrients, the complex dissociates from lysosomal membranes and relocates to the cytosol. {ECO:0000250|UniProtKB:Q92574}

### Phospho-mouse TSC1(S312) 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-mouse TSC1(S312) Antibody - Images



Dot blot analysis of mouse TSC1 Antibody (Phospho S312) Phospho-specific Pab (Cat. #AP3812a) on nitrocellulose membrane. 50ng of Phospho-peptide or Non Phospho-peptide per dot were adsorbed. Antibody working concentrations are 0.6ug per ml.

#### **Phospho-mouse TSC1(S312) Antibody - Background**

In complex with TSC2, inhibits the nutrient-mediated or growth factor-stimulated phosphorylation of S6K1 and EIF4EBP1 by negatively regulating mTORC1 signaling (By similarity). Implicated as a tumor suppressor. Involved in microtubule-mediated protein transport, but this seems to be due to unregulated mTOR signaling (By similarity).

#### **Phospho-mouse TSC1(S312) Antibody - References**

Kladney, R.D., et al. Cancer Res. 70(21):8937-8947(2010)  
Sathaliyawala, T., et al. Immunity 33(4):597-606(2010)  
Scott, C.L., et al. Am. J. Physiol. Lung Cell Mol. Physiol. 299 (4), L455-L471 (2010) :  
Bartolome, A., et al. Endocrinology 151(7):3084-3094(2010)  
Squarize, C.H., et al. PLoS ONE 5 (5), E10643 (2010) :