

### Phospho-mouse TSC1(Y304) Antibody

Affinity Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP3820a

### **Specification**

## Phospho-mouse TSC1(Y304) Antibody - Product Information

**Application** DB,E **Primary Accession 09EP53** NP 075025.2 Other Accession Reactivity Mouse Host **Rabbit** Clonality **Polyclonal** Isotype Rabbit IgG Calculated MW 128746

### Phospho-mouse TSC1(Y304) 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 Y304 of mouse TSC1.

#### **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-mouse TSC1(Y304) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

### Phospho-mouse TSC1(Y304) 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**

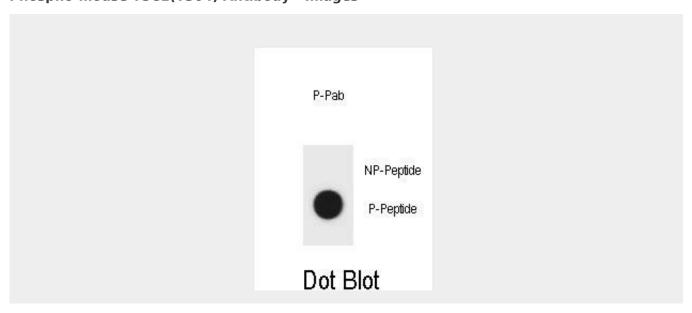
Lysosome membrane {ECO:0000250|UniProtKB:Q92574}; Peripheral membrane protein {ECO:0000250|UniProtKB:Q92574}. Cytoplasm, cytosol {ECO:0000250|UniProtKB:Q92574}. Note=Recruited to lysosomal membranes in a RHEB-dependent process in absence of nutrients. In response to nutrients, the complex dissociates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

#### Phospho-mouse TSC1(Y304) 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 Cytomety
- Cell Culture

## Phospho-mouse TSC1(Y304) Antibody - Images





Dot blot analysis of mouse TSC1 Antibody (Phospho Y304) Phospho-specific Pab (Cat. #AP3820a) 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(Y304) 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(Y304) 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):