

## Phospho-mouse TSC1(S312) Blocking Peptide

Synthetic peptide

Catalog # BP3812a

### Specification

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#### Phospho-mouse TSC1(S312) Blocking Peptide - Product Information

Primary Accession

[O9EP53](#)

Other Accession

[NP\\_075025.2](#)

#### Phospho-mouse TSC1(S312) Blocking Peptide - Additional Information

Gene ID 64930

#### Other Names

Hamartin, Tuberous sclerosis 1 protein homolog, Tsc1, Kiaa0243

#### Target/Specificity

The synthetic peptide sequence is selected from aa 305-317 of MOUSE Tsc1

#### Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

#### Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

#### Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

#### Phospho-mouse TSC1(S312) Blocking Peptide - 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:<a href="http://www.uniprot.org/citations/12820960" target="\_blank">12820960</a>). 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:<a href="http://www.uniprot.org/citations/12820960" target="\_blank">12820960</a>). 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:<a href="http://www.uniprot.org/citations/12820960" target="\_blank">12820960</a>). 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:<a href="http://www.uniprot.org/citations/12820960" target="\_blank">12820960</a>).

[16707451](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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) Blocking Peptide - Protocols

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

- [Blocking Peptides](#)

#### Phospho-mouse TSC1(S312) Blocking Peptide - Images

#### Phospho-mouse TSC1(S312) Blocking Peptide - 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) Blocking Peptide - 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) :