

**Phospho-TSC1(S505) Antibody Blocking peptide**  
**Synthetic peptide**  
**Catalog # BP3470a****Specification**

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**Phospho-TSC1(S505) Antibody Blocking peptide - Product Information**Primary Accession [Q92574](#)**Phospho-TSC1(S505) Antibody Blocking peptide - Additional Information****Gene ID** 7248**Other Names**

Hamartin, Tuberous sclerosis 1 protein, TSC1, KIAA0243, TSC

**Target/Specificity**

The synthetic peptide sequence used to generate the antibody [AP3470a](/products/AP3470a) was selected from the region of human Phospho-TSC1-S505. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

**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-TSC1(S505) Antibody Blocking peptide - Protein Information****Name** TSC1 {ECO:0000303|PubMed:9242607, ECO:0000312|HGNC:HGNC:12362}**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: [12172553](http://www.uniprot.org/citations/12172553), PubMed: [12906785](http://www.uniprot.org/citations/12906785), PubMed: [12271141](http://www.uniprot.org/citations/12271141), PubMed: [28215400](http://www.uniprot.org/citations/28215400), PubMed: [15340059](http://www.uniprot.org/citations/15340059), PubMed: [24529379](http://www.uniprot.org/citations/24529379)). 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: [12906785](http://www.uniprot.org/citations/12906785)).

PubMed:<a href="http://www.uniprot.org/citations/15340059" target="\_blank">15340059</a>, PubMed:<a href="http://www.uniprot.org/citations/24529379" target="\_blank">24529379</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/12271141" target="\_blank">12271141</a>, PubMed:<a href="http://www.uniprot.org/citations/24529379" target="\_blank">24529379</a>, PubMed:<a href="http://www.uniprot.org/citations/28215400" target="\_blank">28215400</a>). The TSC- TBC complex is inactivated in response to nutrients, relieving inhibition of mTORC1 (PubMed:<a href="http://www.uniprot.org/citations/12172553" target="\_blank">12172553</a>, PubMed:<a href="http://www.uniprot.org/citations/24529379" target="\_blank">24529379</a>). Within the TSC-TBC complex, TSC1 stabilizes TSC2 and prevents TSC2 self- aggregation (PubMed:<a href="http://www.uniprot.org/citations/10585443" target="\_blank">10585443</a>, PubMed:<a href="http://www.uniprot.org/citations/28215400" target="\_blank">28215400</a>). Acts as a tumor suppressor (PubMed:<a href="http://www.uniprot.org/citations/9242607" target="\_blank">9242607</a>). Involved in microtubule-mediated protein transport via its ability to regulate mTORC1 signaling (By similarity). Also acts as a co-chaperone for HSP90AA1 facilitating HSP90AA1 chaperoning of protein clients such as kinases, TSC2 and glucocorticoid receptor NR3C1 (PubMed:<a href="http://www.uniprot.org/citations/29127155" target="\_blank">29127155</a>). Increases ATP binding to HSP90AA1 and inhibits HSP90AA1 ATPase activity (PubMed:<a href="http://www.uniprot.org/citations/29127155" target="\_blank">29127155</a>). Competes with the activating co-chaperone AHSA1 for binding to HSP90AA1, thereby providing a reciprocal regulatory mechanism for chaperoning of client proteins (PubMed:<a href="http://www.uniprot.org/citations/29127155" target="\_blank">29127155</a>). Recruits TSC2 to HSP90AA1 and stabilizes TSC2 by preventing the interaction between TSC2 and ubiquitin ligase HERC1 (PubMed:<a href="http://www.uniprot.org/citations/16464865" target="\_blank">16464865</a>, PubMed:<a href="http://www.uniprot.org/citations/29127155" target="\_blank">29127155</a>).

### 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 nutrients, the complex dissociates from lysosomal membranes and relocates to the cytosol (PubMed:24529379).

### Tissue Location

Highly expressed in skeletal muscle, followed by heart, brain, placenta, pancreas, lung, liver and kidney (PubMed:9242607). Also expressed in embryonic kidney cells (PubMed:9242607).

## Phospho-TSC1(S505) Antibody Blocking peptide - Protocols

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

- [Blocking Peptides](#)

## Phospho-TSC1(S505) Antibody Blocking peptide - Images

## Phospho-TSC1(S505) Antibody Blocking peptide - Background

TSC1 is implicated as a tumor suppressor, and may have a function in vesicular transport. Interaction between TSC1 and TSC2 may facilitate vesicular docking. Defects in TSC1 are the cause of tuberous sclerosis complex (TSC). The molecular basis of TSC is a functional impairment of the hamartin-tuberin complex. TSC is an autosomal dominant multi-system disorder that affects especially the brain, kidneys, heart, and skin. Defects in TSC1 may be a cause of focal cortical dysplasia of Taylor balloon cell type (FCDBC). FCDBC is a subtype of cortical dysplasias linked to chronic intractable epilepsy. Cortical dysplasias display a broad spectrum of structural changes,

which appear to result from changes in proliferation, migration, differentiation, and apoptosis of neuronal precursors and neurons during cortical development.

**Phospho-TSC1(S505) Antibody Blocking peptide - References**

Wu, J., et al., J. Cutan. Pathol. 31(5):383-387 (2004). Lewis, J.C., et al., J. Med. Genet. 41(3):203-207 (2004). J, et al., J. Child Neurol. 19(2):102-106 (2004). Murthy, V., et al., J. Biol. Chem. 279(2):1351-1358 (2004). Astrinidis, A., et al., J. Biol. Chem. 278(51):51372-51379 (2003).