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# Tuberin / TSC2 Antibody (C-Terminus)
**Rabbit Polyclonal Antibody**
**Catalog # ALS11739**

## Specification

### Tuberin / TSC2 Antibody (C-Terminus) - Product Information

| | |
|---|---|
| Application | **IHC** |
| Primary Accession | P49815 |
| Reactivity | **Human, Mouse** |
| Host | **Rabbit** |
| Clonality | **Polyclonal** |
| Calculated MW | **201kDa KDa** |

### Tuberin / TSC2 Antibody (C-Terminus) - Additional Information

**Gene ID** 7249

**Other Names**
Tuberin, Tuberous sclerosis 2 protein, TSC2, TSC4

**Target/Specificity**
15 amino acid peptide from near the carboxy-terminus of human TSC2

**Reconstitution & Storage**
Short term 4°C, long term aliquot and store at -20°C, avoid freeze thaw cycles. Store undiluted.

**Precautions**
Tuberin / TSC2 Antibody (C-Terminus) is for research use only and not for use in diagnostic or therapeutic procedures.

### Tuberin / TSC2 Antibody (C-Terminus) - Protein Information

**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:<a href="http://www.uniprot.org/citations/12172553" target="_blank">12172553</a>, PubMed:<a href="http://www.uniprot.org/citations/12271141" target="_blank">12271141</a>, PubMed:<a href="http://www.uniprot.org/citations/12906785" target="_blank">12906785</a>, PubMed:<a href="http://www.uniprot.org/citations/12842888" target="_blank">12842888</a>, PubMed:<a href="http://www.uniprot.org/citations/28215400" target="_blank">28215400</a>, PubMed:<a href="http://www.uniprot.org/citations/35772404" target="_blank">35772404</a>, PubMed:<a href="http://www.uniprot.org/citations/15340059" target="_blank">15340059</a>, PubMed:<a href="http://www.uniprot.org/citations/22819219" target="_blank">22819219</a>, PubMed:<a href="http://www.uniprot.org/citations/24529379" target="_blank">24529379</a>, PubMed:<a href="http://www.uniprot.org/citations/33436626"

target="_blank">33436626</a>). 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:<a href="http://www.uniprot.org/citations/12172553" target="_blank">12172553</a>, PubMed:<a href="http://www.uniprot.org/citations/12906785" target="_blank">12906785</a>, PubMed:<a href="http://www.uniprot.org/citations/12842888" target="_blank">12842888</a>, PubMed:<a href="http://www.uniprot.org/citations/15340059" target="_blank">15340059</a>, PubMed:<a href="http://www.uniprot.org/citations/12820960" target="_blank">12820960</a>, PubMed:<a href="http://www.uniprot.org/citations/22819219" target="_blank">22819219</a>, PubMed:<a href="http://www.uniprot.org/citations/24529379" target="_blank">24529379</a>, PubMed:<a href="http://www.uniprot.org/citations/33436626" target="_blank">33436626</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/12172553" target="_blank">12172553</a>, PubMed:<a href="http://www.uniprot.org/citations/12271141" target="_blank">12271141</a>, PubMed:<a href="http://www.uniprot.org/citations/12906785" target="_blank">12906785</a>, PubMed:<a href="http://www.uniprot.org/citations/12842888" target="_blank">12842888</a>, PubMed:<a href="http://www.uniprot.org/citations/22819219" target="_blank">22819219</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>, PubMed:<a href="http://www.uniprot.org/citations/35772404" target="_blank">35772404</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>). 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 relocalizes to the cytosol (PubMed:24529379)

### Tissue Location
Liver, brain, heart, lymphocytes, fibroblasts, biliary epithelium, pancreas, skeletal muscle, kidney, lung and placenta.

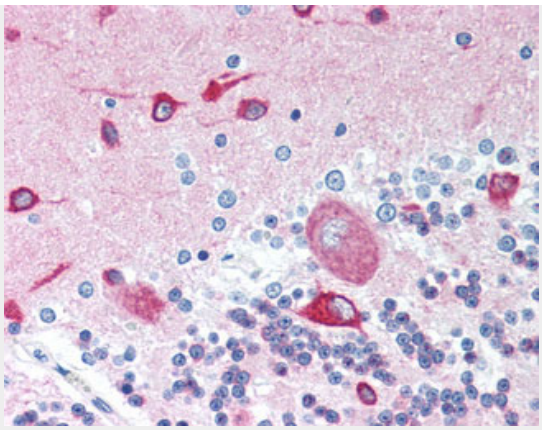
## Tuberin / TSC2 Antibody (C-Terminus) - Protocols

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

## Tuberin / TSC2 Antibody (C-Terminus) - Images

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Anti-TSC2 / Tuberin antibody IHC of human brain, cerebellum.

**Tuberin / TSC2 Antibody (C-Terminus) - Background**

In complex with TSC1, inhibits the nutrient-mediated or growth factor-stimulated phosphorylation of S6K1 and EIF4EBP1 by negatively regulating mTORC1 signaling. Acts as a GTPase- activating protein (GAP) for the small GTPase RHEB, a direct activator of the protein kinase activity of mTORC1. Implicated as a tumor suppressor. Involved in microtubule-mediated protein transport, but this seems to be due to unregulated mTOR signaling. Stimulates weakly the intrinsic GTPase activity of the Ras-related proteins RAP1A and RAB5 in vitro. Mutations in TSC2 lead to constitutive activation of RAP1A in tumors.

**Tuberin / TSC2 Antibody (C-Terminus) - References**

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