

Anti-Tuberin Antibody
Catalog # ABO11485**Specification**

Anti-Tuberin Antibody - Product Information

Application	WB
Primary Accession	P49815
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

Description

Rabbit IgG polyclonal antibody for Tuberin(TSC2) detection. Tested with WB in Human;Mouse;Rat.

Reconstitution

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-Tuberin Antibody - Additional Information

Gene ID 7249

Other Names

Tuberin, Tuberous sclerosis 2 protein, TSC2, TSC4

Calculated MW

200608 MW KDa

Application Details

Western blot, 0.1-0.5 µg/ml, Mouse, Rat, Human

Subcellular Localization

Cytoplasm. Membrane; Peripheral membrane protein. At steady state found in association with membranes.

Tissue Specificity

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

Protein Name

Tuberin

Contents

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na₂HPO₄, 0.05mg Thimerosal, 0.05mg NaN₃.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human Tuberin(1605-1620aa QFTYCWHDDIMQAVFH), identical to the related mouse and rat sequences.

Purification

Immunogen affinity purified.

Cross Reactivity

No cross reactivity with other proteins

Storage

At -20°C for one year. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for a longer time. Avoid repeated freezing and thawing.

Sequence Similarities

Contains 1 Rap-GAP domain.

Anti-Tuberin Antibody - 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: [12172553](http://www.uniprot.org/citations/12172553), PubMed: [12271141](http://www.uniprot.org/citations/12271141), PubMed: [12842888](http://www.uniprot.org/citations/12842888), PubMed: [12906785](http://www.uniprot.org/citations/12906785), PubMed: [15340059](http://www.uniprot.org/citations/15340059), PubMed: [22819219](http://www.uniprot.org/citations/22819219), PubMed: [24529379](http://www.uniprot.org/citations/24529379), PubMed: [28215400](http://www.uniprot.org/citations/28215400), PubMed: [33436626](http://www.uniprot.org/citations/33436626), PubMed: [35772404](http://www.uniprot.org/citations/35772404)). 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: [12172553](http://www.uniprot.org/citations/12172553), PubMed: [12820960](http://www.uniprot.org/citations/12820960), PubMed: [12842888](http://www.uniprot.org/citations/12842888), PubMed: [12906785](http://www.uniprot.org/citations/12906785), PubMed: [15340059](http://www.uniprot.org/citations/15340059), PubMed: [22819219](http://www.uniprot.org/citations/22819219), PubMed: [24529379](http://www.uniprot.org/citations/24529379), PubMed: [33436626](http://www.uniprot.org/citations/33436626), PubMed: [35772404](http://www.uniprot.org/citations/35772404)). 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: [12172553](http://www.uniprot.org/citations/12172553), PubMed: [12271141](http://www.uniprot.org/citations/12271141), PubMed: [12842888](http://www.uniprot.org/citations/12842888), PubMed: [12906785](http://www.uniprot.org/citations/12906785), PubMed: [22819219](http://www.uniprot.org/citations/22819219), PubMed: [24529379](http://www.uniprot.org/citations/24529379), PubMed: [28215400](http://www.uniprot.org/citations/28215400), PubMed: [35772404](http://www.uniprot.org/citations/35772404)). The TSC-TBC complex is inactivated in response to nutrients, relieving inhibition of mTORC1 (PubMed: [12172553](http://www.uniprot.org/citations/12172553), PubMed: [24529379](http://www.uniprot.org/citations/24529379)). 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 relocates to the cytosol (PubMed:24529379)

Tissue Location

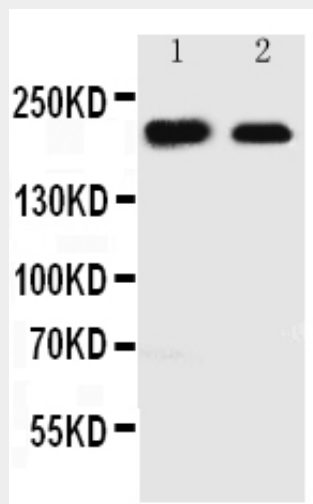
Liver, brain, heart, lymphocytes, fibroblasts, biliary epithelium, pancreas, skeletal muscle, kidney, lung and placenta.

Anti-Tuberin 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](#)

Anti-Tuberin Antibody - Images



Anti-Tuberin antibody, ABO11485, Western blotting Lane 1: Rat Liver Tissue Lysate Lane 2: HEPA Cell Lysate

Anti-Tuberin Antibody - Background

Tuberous sclerosis 2 protein, also known as TSC2 or Tuberin is a protein that is in humans. The chromosomal location of this gene is 16p13.3. Mutations in this gene lead to tuberous sclerosis complex. Its gene product is believed to be a tumor suppressor and is able to stimulate specific GTPases. The protein associates with hamartin in a cytosolic complex, possibly acting as a

chaperone for hamartin. This gene involved in microtubule-mediated protein transport, but this seems to be due to unregulated mTOR signaling. It stimulates weakly the intrinsic GTPase activity of the Ras-related proteins RAP1A and RAB5 in vitro.