

**Anti-Tuberin Picoband Antibody**  
Catalog # ABO11823

**Specification**

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**Anti-Tuberin Picoband Antibody - Product Information**

Application	WB, IHC
Primary Accession	<a href="#">P49815</a>
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

**Description**

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

**Reconstitution**

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

**Anti-Tuberin Picoband Antibody - Additional Information**

**Gene ID** 7249

**Other Names**

Tuberin, Tuberous sclerosis 2 protein, TSC2, TSC4

**Calculated MW**

200608 MW KDa

**Application Details**

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By Heat  
Western blot, 0.1-0.5 µg/ml, 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 Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg Na<sub>3</sub>.

**Immunogen**

E.coli-derived human Tuberin recombinant protein (Position: H1611-V1807). Human Tuberin shares 94% and 90% amino acid (aa) sequences identity with mouse and rat Tuberin, respectively.

**Purification**

Immunogen affinity purified.

**Cross Reactivity**

No cross reactivity with other proteins

**Storage****At -20°C for one year. After r°Constitution, 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 Picoband 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:<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/12842888" target="\_blank">12842888</a>, PubMed:<a href="http://www.uniprot.org/citations/12906785" target="\_blank">12906785</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/28215400" target="\_blank">28215400</a>, PubMed:<a href="http://www.uniprot.org/citations/33436626" target="\_blank">33436626</a>, PubMed:<a href="http://www.uniprot.org/citations/35772404" target="\_blank">35772404</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/12820960" target="\_blank">12820960</a>, PubMed:<a href="http://www.uniprot.org/citations/12842888" target="\_blank">12842888</a>, PubMed:<a href="http://www.uniprot.org/citations/12906785" target="\_blank">12906785</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>). 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/12842888" target="\_blank">12842888</a>, PubMed:<a href="http://www.uniprot.org/citations/12906785" target="\_blank">12906785</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

Lysosomal 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

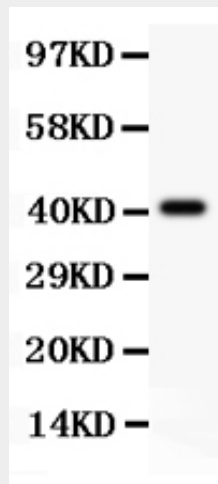
Liver, brain, heart, lymphocytes, fibroblasts, biliary epithelium, pancreas, skeletal muscle, kidney, lung and placenta.

### Anti-Tuberin Picoband Antibody - Protocols

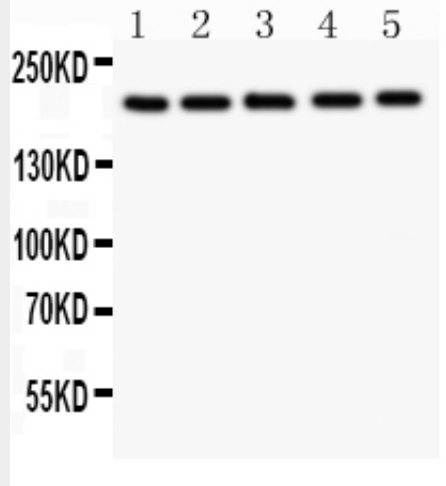
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

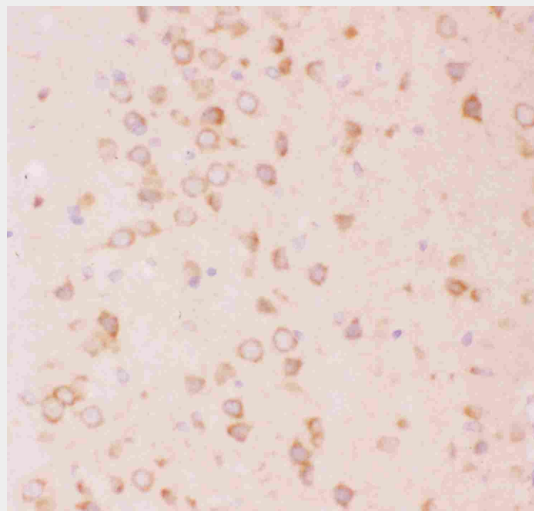
### Anti-Tuberin Picoband Antibody - Images



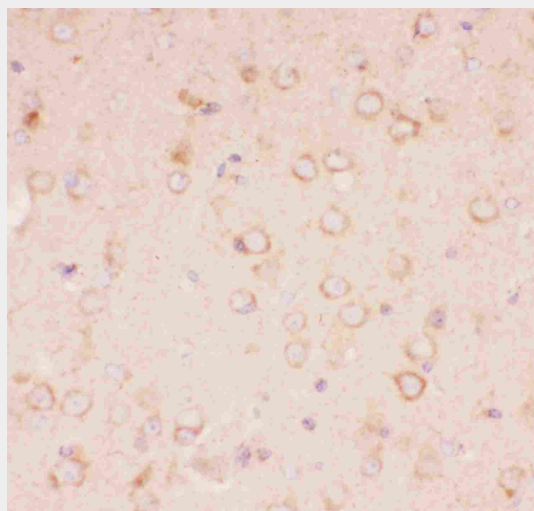
Anti-Tuberin Picoband antibody, ABO11823-1.jpg All lanes: Anti Tuberin (ABO11823) at 0.5ug/ml WB: Recombinant Human Tuberin Protein 0.5ng Predicted bind size: 41KD Observed bind size: 41KD



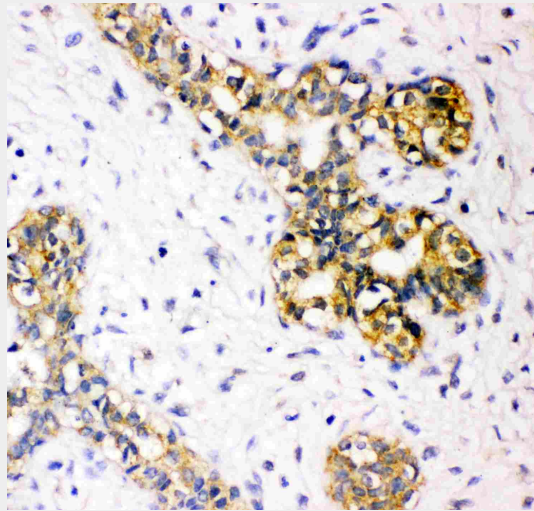
Anti-Tuberin Picoband antibody, ABO11823-2.jpg All lanes: Anti Tuberin (ABO11823) at 0.5ug/ml Lane 1: U2OS Whole Cell Lysate at 40ug Lane 2: PANC Whole Cell Lysate at 40ug Lane 3: HEPG2 Whole Cell Lysate at 40ug Lane 4: A549 Whole Cell Lysate at 40ug Lane 5: COLO320 Whole Cell Lysate at 40ug Predicted bind size: 201KD Observed bind size: 201KD



Anti-Tuberin Picoband antibody, ABO11823-3.jpg IHC(P): Rat Brain Tissue



Anti-Tuberin Picoband antibody, ABO11823-4.jpgIHC(P): Mouse Brain Tissue



Anti-Tuberin Picoband antibody, ABO11823-5.jpgIHC(P): Human Mammary Cancer Tissue

#### **Anti-Tuberin Picoband 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.