

Phospho-Tuberin (T1462) Antibody

Rabbit mAb

Catalog # AP93246

Product Information

Application	WB, IHC
Primary Accession	P49815
Reactivity	Human, Mouse
Clonality	Monoclonal
Other Names	LAM; PPP1R160; Protein phosphatase 1, regulatory subunit 160; tsc2; TSC4; TSC4, formerly; Tuberin; Tuberous sclerosis 2;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	200608

Additional Information

Dilution	WB 1:500~1:2000 IHC 1:50~1:200
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human Phospho-Tuberin (T1462)
Description	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.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

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 , PubMed: 12271141 , PubMed: 12842888 , PubMed: 12906785 , PubMed: 15340059 , PubMed: 22819219 , PubMed: 24529379 , PubMed: 28215400 , PubMed: 33436626 , PubMed: 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 , PubMed: 12820960 , PubMed: 12842888 , PubMed: 12906785 , PubMed: 15340059 , PubMed: 22819219 , PubMed: 24529379 , PubMed: 33436626). 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](#), PubMed:[12271141](#), PubMed:[12842888](#), PubMed:[12906785](#), PubMed:[22819219](#), PubMed:[24529379](#), PubMed:[28215400](#), PubMed:[35772404](#)). The TSC-TBC complex is inactivated in response to nutrients, relieving inhibition of mTORC1 (PubMed:[12172553](#), PubMed:[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.

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