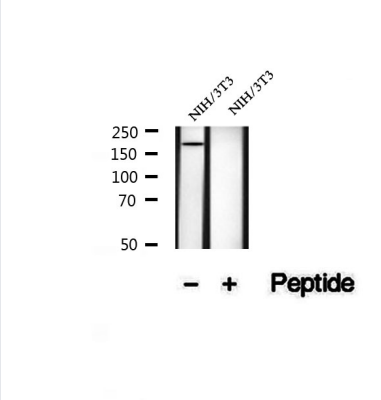
TSC2 Antibody – Rabbit Polyclonal

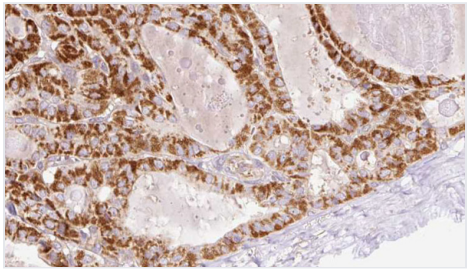
PRODUCT OVERVIEW

Product Name	TSC2, Polyclonal Antibody
Full Product Name	Phospho-Tuberin/TSC2 (Ser939) Antibody
Product Gene Name	anti-TSC2 antibody
Product Synonym Names	FLJ43106; LAM; OTTHUMP00000158940; OTTHUMP00000198394; OTTHUMP00000198395; PPP1R160; Protein phosphatase 1, regulatory subunit 160; tsc2; TSC2_HUMAN; TSC4; TSC4 gene, formerly; TSC4, formerly; Tuberin; Tuberous sclerosis 2; Tuberous sclerosis 2 protein; Tuberous sclerosis 2 protein homolog
Clonality	Polyclonal
Isotype	IgG
Host	Rabbit
Species Reactivity	Human, Mouse, Rat
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purity/Purification	From purified rabbit serum by affinity purification via sequential chromatography on phospho-and non-phospho-peptide affinity columns.
Concentration	1mg/ml (lot specific)
Specificity	Phospho-Tuberin/TSC2 (Ser939) antibody detects endogenous levels of Tuberin/TSC2.
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.
Antibody/Peptide Pairs	Tuberin/TSC2 (Ser939) peptide (MBS9615315) is used for blocking the activity of Tuberin/TSC2 (Ser939) antibody (MBS9600759)
Molecular Weight	Observed: 200 kDa Predicted: 201 kDa
3D Structure	ModBase 3D Structure for P49815
Supply Chain Verification	Manufactured in a lab with traceable raw materials manufactured on site. Coordinated product portfolio of antibodies, pairs, conjugates, recombinant proteins, and immunoassay materials available, please inquire.
Immunogen	A synthesized peptide derived from human Tuberin/TSC2 around the phosphorylation site of Ser939.
Subcellular Location	Cytoplasm. Membrane. At steady state found in association with membranes.
Tissue Specificity	Liver, brain, heart, lymphocytes, fibroblasts, biliary epithelium, pancreas, skeletal muscle, kidney, lung and placenta.
Predicted Cross Reactivity	**Pig, Zebrafish, Bovine, Horse, Sheep**
Similarity	Pig (100%), Zebrafish (100%), Bovine (100%), Horse (100%), Sheep (100%)
Conjugation	Unconjugated
Epitope	Phospho Ser939
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Applications Tested/Suitable for anti-TSC2 antibody	Western Blot (WB), Immunohistochemistry (IHC)
Application Notes for anti-TSC2 antibody	WB: 1:500-1:2000 IHC: 1:50-1:200

Related Product Information for anti-TSC2 antibody	Function: In complex with TSC1, this tumor suppressor inhibits the nutrient-mediated or growth factor-stimulated phosphorylation of S6K1 and EIF4EBP1 by negatively regulating mTORC1 signaling (PubMed:12271141, PubMed:28215400). Acts as a GTPase-activating protein (GAP) for the small GTPase RHEB, a direct activator of the protein kinase activity of mTORC1 (PubMed:15340059). May also play a role in microtubule-mediated protein transport (By similarity). Also stimulates the intrinsic GTPase activity of the Ras-related proteins RAP1A and RAB5 (By similarity). Subunit Structure: Probably forms a complex composed of chaperones HSP90 and HSP70, co-chaperones STIP1/HOP, CDC37, PPP5C, PTGES3/p23, TSC1 and client protein TSC2 (PubMed:29127155). Probably forms a complex composed of chaperones HSP90 and HSP70, co-chaperones CDC37, PPP5C, TSC1 and client protein TSC2, CDK4, AKT, RAF1 and NR3C1; this complex does not contain co-chaperones STIP1/HOP and PTGES3/p23 (PubMed:29127155). Forms a complex containing HSP90AA1, TSC1 and TSC2; TSC1 is required to recruit TCS2 to the complex thereby stabilizing TSC2 (PubMed:29127155). Interacts with TSC1 and HERC1; the interaction with TSC1 stabilizes TSC2 and prevents the interaction with HERC1 (PubMed:9580671, PubMed:10585443, PubMed:15963462, PubMed:16464865). May also interact with the adapter molecule RABEP1 (PubMed:9045618). The final complex may contain TSC2 and RABEP1 linked to RAB5 (PubMed:9045618). Interacts with HSPA1 and HSPA8 (PubMed:15963462). Interacts with DAPK1 (PubMed:18974095). Interacts with FBXW5 (PubMed:18381890). Interacts with NAA10 (via C-terminal domain) (PubMed:20145209). Interacts with RRAGA (polyubiquitinated) (PubMed:25936802). Post-translational Modifications: Phosphorylation at Ser-1387, Ser-1418 or Ser-1420 does not affect interaction with TSC1. Phosphorylation at Ser-939 and Thr-1462 by PKB/AKT1 is induced by growth factor stimulation. Phosphorylation by AMPK activates it and leads to negatively regulates the mTORC1 complex. Phosphorylated at Ser-1798 by RPS6KA1; phosphorylation inhibits TSC2 ability to suppress mTORC1 signaling. Phosphorylated by DAPK1. Ubiquitinated by the DCX(FBXW5) E3 ubiquitin-protein ligase complex, leading to its subsequent degradation. Ubiquitinated by MYCBP2 independently of its phosphorylation status leading to subsequent degradation; association with TSC1 protects from ubiquitination.
Other Notes	Small volumes of anti-TSC2 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for TSC2 purchase	MBS9600759 is an antibody targeting TSC2. Also known as Phospho-Tuberin/TSC2 (Ser939) Antibody. Reactive in Human, Mouse, Rat. Host: Rabbit.



Western Blot (WB) of anti-TSC2 antibody
Western blot analysis of extracts of NIH/3T3 cells, using Phospho-Tuberin/TSC2 (Ser939) Antibody.



Immunohistochemistry (IHC) of anti-TSC2 antibody
MBS9600759 at 1/100 staining Human thyroid cancer tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for TSC2. It may not necessarily be applicable to this product.

NCBI GI #	116256352
NCBI GeneID	7249
NCBI Accession #	NP_000539.2
UniProt Primary Accession #	P49815
UniProt Secondary Accession #	O75275; Q4LE71; Q8TAZ1; A7E2E2; B4DIL8; B4DIQ7; B4DRN2; B7Z2B8; C9J378

UniProt Related Accession #	P49815
GenBank Nucleotide #	NM_000548.4
NCBI Official Full Name	tuberin isoform 1
NCBI Official Synonym Full Names	TSC complex subunit 2
NCBI Official Symbol	TSC2
NCBI Official Synonym Symbols	LAM; TSC4; PPP1R160
UniProt Protein Name	Tuberin
UniProt Synonym Protein Names	Tuberous sclerosis 2 protein
Protein Family	Tuberin
UniProt Gene Name	TSC2
UniProt Synonym Gene Names	TSC4
NCBI Protein Information	tuberin
NCBI Summary for TSC2	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. Alternative splicing results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Jul 2008]
UniProt Comments for TSC2	In complex with TSC1, this tumor suppressor inhibits the nutrient-mediated or growth factor-stimulated phosphorylation of S6K1 and EIF4EBP1 by negatively regulating mTORC1 signaling (PubMed:12271141, PubMed:28215400). Acts as a GTPase-activating protein (GAP) for the small GTPase RHEB, a direct activator of the protein kinase activity of mTORC1 (PubMed:15340059). May also play a role in microtubule-mediated protein transport (). Also stimulates the intrinsic GTPase activity of the Ras-related proteins RAP1A and RAB5 ().
Research Articles on TSC2	**1.** Findings indicate six novel mutations: four in the tuberous sclerosis 2 protein (TSC2) gene, of which one is nonsense, two frame shift and one large deletion of 16 exons; and two in the tuberous sclerosis 1 protein (TSC1) gene, one nonsense and other frame shift.
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