10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Phospho-TSC2(S1418) Antibody Blocking peptide

Synthetic peptide
Catalog # BP3459a

Specification

Phospho-TSC2(S1418) Antibody Blocking peptide - Product Information

Primary Accession P49815

Phospho-TSC2(S1418) Antibody Blocking peptide - Additional Information

Gene ID 7249

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

Target/Specificity
The synthetic peptide sequence used to generate the antibody AP3459a was selected from the region of human Phospho-TSC2-S1418. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

Phospho-TSC2(S1418) Antibody Blocking peptide - 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:12906785, PubMed:12842888, PubMed:28215400, PubMed:35772404, PubMed:15340059, PubMed:22819219, PubMed:<a href="http://www.uniprot.org/citations/24529379"

target="_blank">24529379, PubMed:33436626). 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:12906785, PubMed:12842888, PubMed:15340059, PubMed:12820960, 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:12906785, PubMed:12842888, 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 relocalizes to the cytosol (PubMed:24529379)

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

Phospho-TSC2(S1418) Antibody Blocking peptide - Protocols

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

- Blocking Peptides

Phospho-TSC2(S1418) Antibody Blocking peptide - Images

Phospho-TSC2(S1418) Antibody Blocking peptide - Background

TSC2 is believed to be a tumor suppressor and is able to specifically stimulate the intrinsic GTPase activity of the Ras-related protein RAP1A and RAB5. The protein associates with hamartin in a cytosolic complex, possibly acting as a chaperone for hamartin. TSC2 may have a function in vesicular transport, but may also play a role in the regulation of cell growth arrest and in the regulation of transcription mediated by steroid receptors. Interaction between TSC1 and TSC2 may facilitate vesicular docking. Mutations in TSC2 lead to tuberous sclerosis complex.

10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Phospho-TSC2(S1418) Antibody Blocking peptide - References

Li, Y., et al., Mol. Cell. Biol. 24(18):7965-7975 (2004).Karbowniczek, M., et al., J. Biol. Chem. 279(29):29930-29937 (2004).Corradetti, M.N., et al., Genes Dev. 18(13):1533-1538 (2004).Birchenall-Roberts, M.C., et al., J. Biol. Chem. 279(24):25605-25613 (2004).Lewis, J.C., et al., J. Med. Genet. 41(3):203-207 (2004).