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

Phospho-rat TSC2(T1373) Blocking Peptide

Synthetic peptide
Catalog # BP3833a

Specification

Phospho-rat TSC2(T1373) Blocking Peptide - Product Information

Primary Accession	P49816
Other Accession	NP_036812.2

Phospho-rat TSC2(T1373) Blocking Peptide - Additional Information

Gene ID 24855

Other Names
Tuberin, Tuberous sclerosis 2 protein homolog, Tsc2

Target/Specificity
The synthetic peptide sequence is selected from aa 1366-1380 of RAT Tsc2

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-rat TSC2(T1373) Blocking Peptide - Protein Information

Name Tsc2 {ECO:0000303|PubMed:8519695, ECO:0000312|RGD:3908}

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). 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 (By similarity). 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 (By similarity). The TSC-TBC complex is inactivated in response to nutrients, relieving inhibition of mTORC1 (By similarity). Involved in microtubule-mediated protein transport via its ability to regulate mTORC1 signaling (PubMed:16707451). Also stimulates the intrinsic GTPase activity of the Ras-related proteins RAP1A and RAB5 (PubMed:9045618).

Cellular Location
Lysosome membrane {ECO:0000250|UniProtKB:P49815}; Peripheral membrane protein {ECO:0000250|UniProtKB:P49815}. Cytoplasm, cytosol {ECO:0000250|UniProtKB:P49815}. Note=Recruited to lysosomal membranes in a RHEB-dependent process in absence of nutrients (By similarity). In response to insulin signaling and phosphorylation by PKB/AKT1, the complex dissociates from lysosomal membranes and relocalizes to the cytosol (By similarity) {ECO:0000250|UniProtKB:P49815}

Tissue Location
CNS, uterus, heart, skeletal muscle, kidney and spleen.

Phospho-rat TSC2(T1373) Blocking Peptide - Protocols

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

- Blocking Peptides

Phospho-rat TSC2(T1373) Blocking Peptide - Images

Phospho-rat TSC2(T1373) Blocking Peptide - Background

acts as a tumor suppressor; may play a role in cell cycle regulation; acute phase response, and negative regulation of cell proliferation [RGD].

Phospho-rat TSC2(T1373) Blocking Peptide - References

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Inoue, H., et al. Biosci. Biotechnol. Biochem. 73(11):2488-2493(2009)
Di Nardo, A., et al. J. Neurosci. 29(18):5926-5937(2009)
Shiono, M., et al. Oncogene 27(52):6690-6697(2008)