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Phospho-mouse TSC2(S1343) Blocking Peptide

Synthetic peptide
Catalog # BP3823a

Specification

Phospho-mouse TSC2(S1343) Blocking Peptide - Product Information

Primary Accession	Q61037
Other Accession	P49816

Phospho-mouse TSC2(S1343) Blocking Peptide - Additional Information

Other Names
Tuberin, Tuberous sclerosis 2 protein homolog, Tsc2

Target/Specificity
The synthetic peptide sequence is selected from aa 1336-1350 of MOUSE 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-mouse TSC2(S1343) Blocking Peptide - Protein Information

Name Tsc2 {ECO:0000303|PubMed:8777431, ECO:0000312|MGI:MGI:102548}

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:12820960, PubMed:24529379). 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:12820960, PubMed:24529379). 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:12820960, PubMed:24529379). The TSC-TBC complex is inactivated in response to nutrients, relieving inhibition of mTORC1 (PubMed:24529379). 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 (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. In response to insulin signaling and phosphorylation by PKB/AKT1, the complex dissociates from lysosomal membranes and relocalizes to the cytosol.

Tissue Location
Widely expressed..

Phospho-mouse TSC2(S1343) Blocking Peptide - Protocols

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

- Blocking Peptides

Phospho-mouse TSC2(S1343) Blocking Peptide - Images

Phospho-mouse TSC2(S1343) Blocking Peptide - Background

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. Implicated as a tumor suppressor. Involved in microtubule-mediated protein transport, but this seems to be due to unregulated mTOR signaling (By similarity). Specifically stimulates the intrinsic GTPase activity of the Ras-related protein RAP1A and RAB5. Suggesting a possible mechanism for its role in regulating cellular growth (By similarity).