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Phospho-Raptor(S863) Antibody Blocking peptide
Synthetic peptide
Catalog # BP3495a

Specification

Phospho-Raptor(S863) Antibody Blocking peptide - Product Information

Primary Accession Q8N122

Phospho-Raptor(S863) Antibody Blocking peptide - Additional Information

Gene ID 57521

Other Names
Regulatory-associated protein of mTOR, Raptor, p150 target of rapamycin (TOR)-scaffold protein, RPTOR, KIAA1303, RAPTOR

Target/Specificity
The synthetic peptide sequence used to generate the antibody AP3495a was selected from the region of human Phospho-Raptor-S863. 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-Raptor(S863) Antibody Blocking peptide - Protein Information

Name RPTOR (HGNC:30287)

Function
Component of the mechanistic target of rapamycin complex 1 (mTORC1), an evolutionarily conserved central nutrient sensor that stimulates anabolic reactions and macromolecule biosynthesis to promote cellular biomass generation and growth (PubMed:12150925, PubMed:12150926, PubMed:12747827, PubMed:24403073, PubMed:26588989, PubMed:32561715, PubMed:37541260). In response to nutrients, growth factors or amino acids, mTORC1 is recruited to the lysosome membrane and

promotes protein, lipid and nucleotide synthesis by phosphorylating several substrates, such as ribosomal protein S6 kinase (RPS6KB1 and RPS6KB2) and EIF4EBP1 (4E-BP1) (PubMed:12150925, PubMed:12150926, PubMed:12747827, PubMed:24403073, PubMed:26588989, PubMed:37541260). In the same time, it inhibits catabolic pathways by phosphorylating the autophagy initiation components ULK1 and ATG13, as well as transcription factor TFEB, a master regulators of lysosomal biogenesis and autophagy (PubMed:12150925, PubMed:12150926, PubMed:12747827, PubMed:24403073, PubMed:32561715, PubMed:37541260). The mTORC1 complex is inhibited in response to starvation and amino acid depletion (PubMed:12150925, PubMed:12150926, PubMed:12747827, PubMed:24403073, PubMed:37541260). Within the mTORC1 complex, RPTOR acts both as a molecular adapter, which (1) mediates recruitment of mTORC1 to lysosomal membranes via interaction with small GTPases Rag (RagA/RRAGA, RagB/RRAGB, RagC/RRAGC and/or RagD/RRAGD), and a (2) substrate-specific adapter, which promotes substrate specificity by binding to TOS motif-containing proteins and direct them towards the active site of the MTOR kinase domain for phosphorylation (PubMed:12747827, PubMed:24403073, PubMed:26588989, PubMed:37541260). mTORC1 complex regulates many cellular processes, such as odontoblast and osteoclast differentiation or neuronal transmission (By similarity). mTORC1 complex in excitatory neuronal transmission is required for the prosocial behavior induced by the psychoactive substance lysergic acid diethylamide (LSD) (By similarity).

Cellular Location
Lysosome membrane. Cytoplasm Cytoplasmic granule. Note=Targeting to lysosomes depends on amino acid availability: recruited to lysosome membranes via interaction with GTP-bound form of RagA/RRAGA (or RagB/RRAGB) in complex with the GDP-bound form of RagC/RRAGC (or RagD/RRAGD), promoting recruitment of mTORC1 to the lysosomes (PubMed:31601764, PubMed:31601708). In arsenite-stressed cells, accumulates in stress granules when associated with SPAG5 and association with lysosomes is drastically decreased (PubMed:23953116).

Tissue Location
Highly expressed in skeletal muscle, and in a lesser extent in brain, lung, small intestine, kidney and placenta

Phospho-Raptor(S863) Antibody Blocking peptide - Protocols

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

- Blocking Peptides

Phospho-Raptor(S863) Antibody Blocking peptide - Images

Phospho-Raptor(S863) Antibody Blocking peptide - Background

Raptor participates in the FRAP1 pathway and associates in a near stoichiometric ratio with FRAP1 to form a nutrient-sensitive complex (NSC). It plays a pivotal role as a scaffold protein in the FRAP1-signaling pathway and this interaction is essential for the catalyzed phosphorylation of EIF4EBP1. It has a positive role in nutrient-stimulated signaling to the downstream effector RPS6KB1. Under nutrient-deprived conditions, raptor serves as a negative regulator of FRAP1 kinase activity. Regulation of the interaction with FRAP1 is a critical mechanism by which cells coordinate the rate of cell growth and maintenance of cell size with different environmental conditions.

Phospho-Raptor(S863) Antibody Blocking peptide - References

Wang,Y., Circ. Res. 101 (6), 560-569 (2007)Fuchs,B.C., Am. J. Physiol., Cell Physiol. 293 (1), C55-C63 (2007)Olsen,J.V., Cell 127 (3), 635-648 (2006)