PRAS40 Blocking Peptide

PRODUCT OVERVIEW

Product Name	PRAS40, Blocking Peptide
Full Product Name	PRAS40 Blocking Peptide
Product Gene Name	PRAS40 blocking peptide
Product Synonym Names	Antigenic Blocking Peptide Proline-rich AKT1 substrate 1 isoform a Antibody; 40 kDa proline rich AKT substrate antibody; AKT1 S1 antibody; AKT1 substrate 1 (proline rich) antibody; AKT1S1 antibody; Lobe antibody; PRAS antibody; PRAS40 antibody; Proline rich Akt substrate 40 kDa antibody; Proline-rich AKT1 substrate 1 antibody
Preparation and Storage	Store at -20 degree C for long term storage.
Molecular Weight	29,262 Da
Molecular Function	negative regulation of cell size; negative regulation of protein kinase activity; negative regulation of TOR signaling; neurotrophin TRK receptor signaling pathway; regulation of cellular response to heat; regulation of neuron apoptotic process
Subcellular Location	Cytoplasm; Cytosol
Applications Tested/Suitable for PRAS40 blocking peptide	Immunodepletion, Immunocompetition
Related Product Information for PRAS40 blocking peptide	Overview: Subunit of mTORC1, which regulates cell growth and survival in response to nutrient and hormonal signals. mTORC1 is activated in response to growth factors or amino acids. Growth factor-stimulated mTORC1 activation involves a AKT1-mediated phosphorylation of TSC1-TSC2, which leads to the activation of the RHEB GTPase that potently activates the protein kinase activity of mTORC1. Amino acid-signaling to mTORC1 requires its relocalization to the lysosomes mediated by the Ragulator complex and the Rag GTPases. Activated mTORC1 up-regulates protein synthesis by phosphorylating key regulators of mRNA translation and ribosome synthesis. mTORC1 phosphorylates EIF4EBP1 and releases it from inhibiting the elongation initiation factor 4E (eiF4E). mTORC1 phosphorylates and activates S6K1 at 'Thr-389', which then promotes protein synthesis by phosphorylating PDCD4 and targeting it for degradation. Within mTORC1, AKT1S1 negatively regulates mTOR activity in a manner that is dependent on its phosphorylation state and binding to 14-3-3 proteins. Inhibits RHEB-GTP-dependent mTORC1 activation. Substrate for AKT1 phosphorylation, but can also be activated by AKT1-independent mechanisms. May also play a role in nerve growth factor-mediated neuroprotection. Peptide Description: Synthetic peptide taken within amino acid region 160-210 on human Proline-rich AKT1 substrate 1 isoform a protein Expression: Widely expressed with highest levels of expression in liver and heart. Expressed at higher levels in cancer cell lines (e.g. A-549 and HeLa) than in normal cell lines (e.g. HEK293).
Other Notes	Small volumes of PRAS40 blocking peptide 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 PRAS40 purchase	MBS5400649 is a blocking peptide targeting PRAS40.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for PRAS40. It may not necessarily be applicable to this product.

NCBI GI #	400153980
NCBI GeneID	84335
NCBI Accession #	NP_115751

UniProt Primary Accession #	Q96B36
UniProt Secondary Accession #	Q96BI4; Q96IK7; Q96NG2; Q9BWR5; A8MTQ1; B2RE93; J3KPM3
UniProt Related Accession #	Q96B36
GenBank Nucleotide #	NM_032375.5
NCBI Official Full Name	proline-rich AKT1 substrate 1 isoform a
NCBI Official Synonym Full Names	AKT1 substrate 1
NCBI Official Symbol	AKT1S1
NCBI Official Synonym Symbols	Lobe; PRAS40
UniProt Protein Name	Proline-rich AKT1 substrate 1
UniProt Synonym Protein Names	40 kDa proline-rich AKT substrate
UniProt Gene Name	AKT1S1
NCBI Protein Information	proline-rich AKT1 substrate 1
NCBI Summary for PRAS40	AKT1S1 is a proline-rich substrate of AKT (MIM 164730) that binds 14-3-3 protein (see YWHAH, MIM 113508) when phosphorylated (Kovacina et al., 2003 [PubMed 12524439]).[supplied by OMIM, Mar 2008]
UniProt Comments for PRAS40	Subunit of mTORC1, which regulates cell growth and survival in response to nutrient and hormonal signals. mTORC1 is activated in response to growth factors or amino acids. Growth factor-stimulated mTORC1 activation involves a AKT1-mediated phosphorylation of TSC1-TSC2, which leads to the activation of the RHEB GTPase that potently activates the protein kinase activity of mTORC1. Amino acid-signaling to mTORC1 requires its relocalization to the lysosomes mediated by the Ragulator complex and the Rag GTPases. Activated mTORC1 up-regulates protein synthesis by phosphorylating key regulators of mRNA translation and ribosome synthesis. mTORC1 phosphorylates EIF4EBP1 and releases it from inhibiting the elongation initiation factor 4E (eiF4E). mTORC1 phosphorylates and activates S6K1 at 'Thr-389', which then promotes protein synthesis by phosphorylating PDCD4 and targeting it for degradation. Within mTORC1, AKT1S1 negatively regulates mTOR activity in a manner that is dependent on its phosphorylation state and binding to 14-3-3 proteins. Inhibits RHEB-GTP-dependent mTORC1 activation. Substrate for AKT1 phosphorylation, but can also be activated by AKT1-independent mechanisms. May also play a role in nerve growth factor-mediated neuroprotection.
Research Articles on PRAS40	**1.** The Akt-PRAS40 pathway is activated by uric acid, which inhibits autophagy and recapitulates the uric acid-induced proinflammatory cytokine phenotype.
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