CAD Blocking Peptide

PRODUCT OVERVIEW

Product Name	CAD, Blocking Peptide
Full Product Name	CAD Peptide
Product Gene Name	CAD blocking peptide
Form/Format	Lyophilized powder
Preparation and Storage	Add 100ul of sterile PBS. Final peptide concentration is 1 mg/ml in PBS. For longer periods of storage, store at -20 degree C. Avoid repeat freeze-thaw cycles.
Antibody/Peptide Pairs	CAD peptide (MBS3233019) is used for blocking the activity of CAD antibody (MBS3208056)
Molecular Weight	243kDa
OMIM	114010
Product Categories/Family for CAD blocking peptide	Peptide
Applications Tested/Suitable for CAD blocking peptide	Western Blot (WB)
Related Product Information for CAD blocking peptide	This is a synthetic peptide designed for use in combination with anti-CAD antibody made Target Description: CAD is a trifunctional protein which is associated with the enzymatic activities of the first 3 enzymes in the 6-step pathway of pyrimidine biosynthesis: carbamoylphosphate synthetase (CPS II), aspartate transcarbamoylase, and dihydroorotase. This protein is regulated by the mitogen-activated protein kinase (MAPK) cascade, which indicates a direct link between activation of the MAPK cascade and de novo biosynthesis of pyrimidine nucleotides.The de novo synthesis of pyrimidine nucleotides is required for mammalian cells to proliferate. This gene encodes a trifunctional protein which is associated with the enzymatic activities of the first 3 enzymes in the 6-step pathway of pyrimidine biosynthesis: carbamoylphosphate synthetase (CPS II), aspartate transcarbamoylase, and dihydroorotase. This protein is regulated by the mitogen-activated protein kinase (MAPK) cascade, which indicates a direct link between activation of the MAPK cascade and de novo biosynthesis of pyrimidine nucleotides. Publication Note: This RefSeq record includes a subset of the publications that are available for this gene. Please see the Entrez Gene record to access additional publications.
Other Notes	Small volumes of CAD 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 CAD purchase	MBS3233019 is a blocking peptide targeting CAD. Also known as CAD Peptide.

ADDITIONAL DETAILS

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

NCBI GI #	18105007
NCBI GeneID	790
NCBI Accession #	NP_004332
UniProt Primary Accession #	P27708
UniProt Related Accession #	P27708
GenBank Nucleotide #	NM_004341

NCBI Official Full Name	CAD protein isoform 1
NCBI Official Synonym Full Names	carbamoyl-phosphate synthetase 2, aspartate transcarbamylase, and dihydroorotase
NCBI Official Symbol	CAD
NCBI Official Synonym Symbols	CDG1Z; GATD4; EIEE50
UniProt Protein Name	CAD protein
Protein Family	CAD protein
UniProt Gene Name	CAD
UniProt Entry Name	PYR1_HUMAN
NCBI Protein Information	CAD protein
NCBI Summary for CAD	The de novo synthesis of pyrimidine nucleotides is required for mammalian cells to proliferate. This gene encodes a trifunctional protein which is associated with the enzymatic activities of the first 3 enzymes in the 6-step pathway of pyrimidine biosynthesis: carbamoylphosphate synthetase (CPS II), aspartate transcarbamoylase, and dihydroorotase. This protein is regulated by the mitogen-activated protein kinase (MAPK) cascade, which indicates a direct link between activation of the MAPK cascade and de novo biosynthesis of pyrimidine nucleotides. Alternative splicing results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Apr 2015]
UniProt Comments for CAD	CAD: a multifunctional enzyme that catalyzes four enzymatic activities of the pyrimidine pathway, including the rate-limiting first step. The four enzymatic activities involved in de novo pyrimidine synthesis are glutamine amidotransferase, carbamoyl-phosphate synthetase, aspartate transcarbamoylase, and dihydroorotase activities. Provides essential precursors for DNA synthesis. Required for the de novo synthesis of pyrimidine nucleotides and cell growth. Phosphorylation by p70S6K promotes CAD oligomerization, stimulating de novo synthesis of pyrimidines and progression through S phase in mammalian cells. Utilizes glutamine, bicarbonate, and aspartic acid to form a pyrimidine ring that is subsequently attached to ribose to generate a pyrimidine. Protein type: EC 6.3.5.5; EC 2.1.3.2; Transferase; Ligase; Amino Acid Metabolism - alanine, aspartate and glutamate; EC 3.5.2.3; Hydrolase; Nucleotide Metabolism - pyrimidine Chromosomal Location of Human Ortholog: 2p22-p21 Cellular Component: nucleoplasm; cell projection; protein complex; nuclear matrix; membrane; cell soma; plasma membrane; terminal button; nucleus; cytosol Molecular Function: carbamoyl-phosphate synthase (ammonia) activity; identical protein binding; enzyme binding; zinc ion binding; carbamoyl-phosphate synthase (glutamine-hydrolyzing) activity; aspartate carbamoyltransferase activity; ATP binding; protein kinase activity; dihydroorotase activity Biological Process: lactation; organ regeneration; arginine biosynthetic process; nucleobase, nucleoside and nucleotide metabolic process; protein amino acid autophosphorylation; heart development; UTP biosynthetic process; peptidyl-threonine phosphorylation; glutamine metabolic process; response to testosterone stimulus; female pregnancy; liver development; response to caffeine; 'de novo' pyrimidine base biosynthetic process; response to cortisol stimulus; pyrimidine base metabolic process; pyrimidine nucleoside biosynthetic process; glutamine catabolic process; drug metabolic process; urea cycle; response to amine stimulus Disease: Congenital Disorder Of Glycosylation, Type Iz
Research Articles on CAD	**1.** CAD dihydroorotase and aspartate transcarbamoylase domains self-assembles into dimers and trimers.
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