CAD Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

Product Name	CAD, Polyclonal Antibody
Full Product Name	CAD (Phospho-Ser1859) rabbit pAb
Product Gene Name	anti-CAD antibody
Product Synonym Names	CAD protein [Includes: Glutamine-dependent carbamoyl-phosphate synthase (EC 6.3.5.5); Aspartate carbamoyltransferase (EC 2.1.3.2); Dihydroorotase (EC 3.5.2.3)]
Clonality	Polyclonal
Host	Rabbit
Species Reactivity	Human, Mouse, Rat
Form/Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Purity/Purification	The antibody was affinity-purified from rabbit serum by affinity-chromatography using specific immunogen.
Concentration	1mg/ml (lot specific)
Specificity	This antibody detects endogenous levels of Human Mouse Rat CAD (phospho-Ser1859)
Preparation and Storage	Store at -20 degree C for 1 year
Molecular Weight	242,984 Da
Chromosome Location	Chromosome: 2; NC_000002.11 (27440258..27466654). Location: 2p22-p21
OMIM	114010
3D Structure	ModBase 3D Structure for P27708
Immunogen	Synthesized phosho peptide around human CAD (Ser1859)
Product Categories/Family for anti-CAD antibody	Primary Antibodies
Applications Tested/Suitable for anti-CAD antibody	Western Blot (WB)
Application Notes for anti-CAD antibody	WB: 1:1000-2000
Related Product Information for anti-CAD antibody	carbamoyl-phosphate synthetase 2, aspartate transcarbamylase, and dihydroorotase (CAD), Homo sapiens. 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]
Other Notes	Small volumes of anti-CAD antibody 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	MBS9459198 is an antibody targeting CAD. Also known as CAD (Phospho-Ser1859) rabbit pAb. Reactive in Human, Mouse, Rat. Host: Rabbit.

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_004332.2
UniProt Primary Accession #	P27708
UniProt Secondary Accession #	Q6P0Q0; D6W552
UniProt Related Accession #	P27708
GenBank Nucleotide #	NM_004341.3
NCBI Official Full Name	CAD protein
NCBI Official Synonym Full Names	carbamoyl-phosphate synthetase 2, aspartate transcarbamylase, and dihydroorotase
NCBI Official Symbol	CAD
UniProt Protein Name	CAD protein
Protein Family	CAD protein
UniProt Gene Name	CAD
UniProt Entry Name	PYR1_HUMAN
NCBI Protein Information	CAD protein; CAD trifunctional protein; multifunctional protein CAD
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. [provided by RefSeq, Jul 2008]

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.** preliminary X-ray diffraction analysis of the dihydroorotase domain of human CAD
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