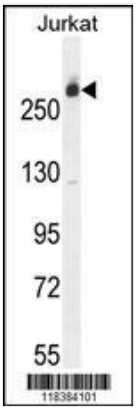
CAD Antibody – Rabbit Polyclonal

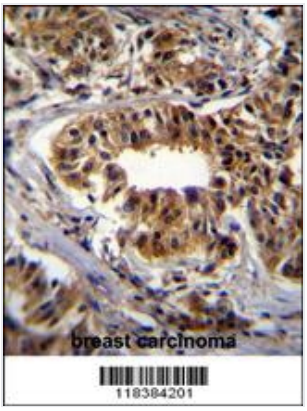
PRODUCT OVERVIEW

Product Name	CAD, Polyclonal Antibody
Full Product Name	CAD, ID (CAD, CAD protein, Glutamine-dependent carbamoyl-phosphate synthase, Aspartate carbamoyltransferase, Dihydroorotase) (APC)
Product Gene Name	anti-CAD antibody
Product Synonym Names	CAD; CAD protein; Glutamine-dependent carbamoyl-phosphate synthase; Aspartate carbamoyltransferase; Dihydroorotase
Clonality	Polyclonal
Isotype	IgG
Host	Rabbit
Species Reactivity	Human
Form/Format	Supplied as a liquid in PBS, pH 7.2. No preservative added. Labeled with Allophycocyanin (APC).
Purity/Purification	Purified by Protein A Affinity Chromatography.
Preparation and Storage	Store product at 4 degree C in the dark. DO NOT FREEZE! Stable at 4 degree C for 12 months after receipt as an undiluted liquid. Dilute required amount only prior to immediate use. Further dilutions can be made in assay buffer. Caution: APC conjugates are sensitive to light. For maximum recovery of product, centrifuge the original vial prior to removing the cap.
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	CAD antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 787-816 amino acids from the Central region of human CAD.
Conjugate	APC
Note	Preservative Free
Special Handling	Light sensitive
Product Categories/Family for anti-CAD antibody	Antibodies; Enzymes; Synthase
Applications Tested/Suitable for anti-CAD antibody	Flow Cytometry (FC/FACS), FLISA, Immunohistochemistry (IHC), Western Blot (WB)
Application Notes for anti-CAD antibody	FC/FACS: 1:10-50 FLISA: 1:1,000 IHC: 1:10-50 WB: 1:100-500 Applications are based on unconjugated antibody.
Related Product Information for anti-CAD antibody	MBS6280431 is an antibody targeting CAD. Also known as CAD, ID (CAD, CAD protein, Glutamine-dependent carbamoyl-phosphate synthase, Aspartate carbamoyltransferase, Dihydroorotase) (APC). Reactive in Human. Host: Rabbit.

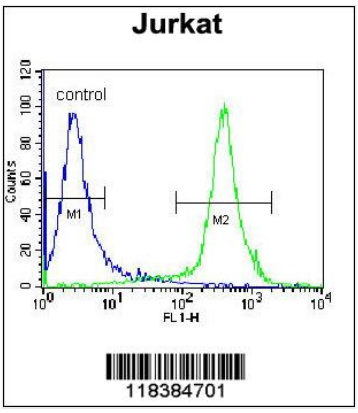
Product References and Citations for anti-CAD antibody	Jia, P., et al. Schizophr. Res. 122 (1-3), 38-42 (2010): Rose, J.E., et al. Mol. Med. 16 (7-8), 247-253 (2010): Ahuja, V., et al. J. Inherit. Metab. Dis. 31(4):481-491(2008). Sugiyama, N., et al. Mol. Cell Proteomics 6(6):1103-1109(2007). Olsen, J.V., et al. Cell 127(3):635-648(2006).
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.



Western Blot (WB) of anti-CAD antibody
CAD Antibody (Center) western blot analysis in Jurkat cell line lysates (35ug/lane).This demonstrates the CAD antibody detected the CAD protein (arrow).



Immunohistochemistry (IHC) of anti-CAD antibody
CAD Antibody (Center) immunohistochemistry analysis in formalin fixed and paraffin embedded human breast carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of CAD Antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.



Flow Cytometry (FC/FACS) of anti-CAD antibody
CAD Antibody (Center) flow cytometric analysis of Jurkat cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated donkey-anti-rabbit secondary antibodies were used for the analysis.

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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