

**CAD Antibody (Center) Blocking peptide**  
**Synthetic peptide**  
**Catalog # BP11110c****Specification**

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**CAD Antibody (Center) Blocking peptide - Product Information**Primary Accession [P27708](#)**CAD Antibody (Center) Blocking peptide - Additional Information****Gene ID** 790**Other Names**

CAD protein, Glutamine-dependent carbamoyl-phosphate synthase, Aspartate carbamoyltransferase, Dihydroorotase, CAD

**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.

**CAD Antibody (Center) Blocking peptide - Protein Information****Name** CAD ([HGNC:1424](#))**Function**

Multifunctional protein that encodes the first 3 enzymatic activities of the de novo pyrimidine pathway: carbamoylphosphate synthetase (CPSase; EC 6.3.5.5), aspartate transcarbamylase (ATCase; EC 2.1.3.2) and dihydroorotase (DHOase; EC 3.5.2.3). The CPSase-function is accomplished in 2 steps, by a glutamine-dependent amidotransferase activity (GATase) that binds and cleaves glutamine to produce ammonia, followed by an ammonium-dependent carbamoyl phosphate synthetase, which reacts with the ammonia, hydrogencarbonate and ATP to form carbamoyl phosphate. The endogenously produced carbamoyl phosphate is sequestered and channeled to the ATCase active site. ATCase then catalyzes the formation of carbamoyl-L-aspartate from L-aspartate and carbamoyl phosphate. In the last step, DHOase catalyzes the cyclization of carbamoyl aspartate to dihydroorotate.

**Cellular Location**

Cytoplasm. Nucleus. Note=Cytosolic and unphosphorylated in resting cells, translocates to the nucleus in response to EGF stimulation, nuclear import promotes optimal cell growth

## **CAD Antibody (Center) Blocking peptide - Protocols**

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

- [Blocking Peptides](#)

## **CAD Antibody (Center) Blocking peptide - Images**

## **CAD Antibody (Center) Blocking peptide - Background**

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.

## **CAD Antibody (Center) Blocking peptide - References**

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)