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| Product name: | CAD Rabbit Polyclonal Antibody |
| Cat number: | ABN07823 |
| Conjugate: | Unconjugated |
| Size: | 100µL |
| Clone: | Polyclonal |
| Concentration: | 1mg/ml |
| Host: | Rabbit |
| Isotype: | IgG |
| Immunogen: | The antiserum was produced against synthesized peptide derived from human CAD. AA range:422-471 |
| Reactivity: | Human,Mouse |
| Applications: | IHC 1:100-1:300,ICC/IF 1:50-1:200,ELISA 1:10000-1:20000 |
| Molecular Weight: | 250kDa |
| Purification: | Affinity purification |
| Form: | Liquid |
| Buffer: | Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% New type preservative N. |
| Storage: | Store at 4°C short term. Aliquot and store at -20°C for 12 months. Avoid freeze/thaw cycles. |

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. Alternative splicing results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Apr 2015], catalytic activity: (S)-dihydroorotate + H₂O = N-carbamoyl-L-aspartate., catalytic activity: 2 ATP + L-glutamine + HCO₃⁽⁻⁾ + H₂O = 2 ADP + phosphate + L-glutamate + carbamoyl phosphate., catalytic activity: Carbamoyl phosphate + L-aspartate = phosphate + N-carbamoyl-L-aspartate., cofactor: Binds 1 zinc ion per subunit (for dihydroorotase activity) ., enzyme regulation: Allosterically regulated and controlled by phosphorylation. 5-phosphoribose 1-diphosphate is an activator while UMP is an inhibitor of the CPSase reaction., function: This protein is a "fusion" protein encoding four enzymatic activities of the pyrimidine pathway (GATase, CPSase, ATCase and DHOase)., miscellaneous: GATase (glutamine amidotransferase) and CPSase (carbamoyl phosphate synthase) form together the glutamine-dependent CPSase (GD-CPSase) (EC 6.3.5.5)., online information: Aspartate carbamoyltransferase entry, pathway: Pyrimidine metabolism; UMP biosynthesis via de novo pathway; UMP from HCO₃⁽⁻⁾: step 1/6., pathway: Pyrimidine metabolism; UMP biosynthesis via de novo pathway; UMP from HCO₃⁽⁻⁾: step 2/6., pathway: Pyrimidine metabolism; UMP biosynthesis via de novo pathway; UMP from HCO₃⁽⁻⁾: step 3/6., similarity: Belongs to the ATCase/OTCase family., similarity: Contains 1 glutamine amidotransferase type-1 domain., similarity: Contains 2 ATP-grasp domains., similarity: In the central section; belongs to the DHOase family., subunit: Homohexamer.,