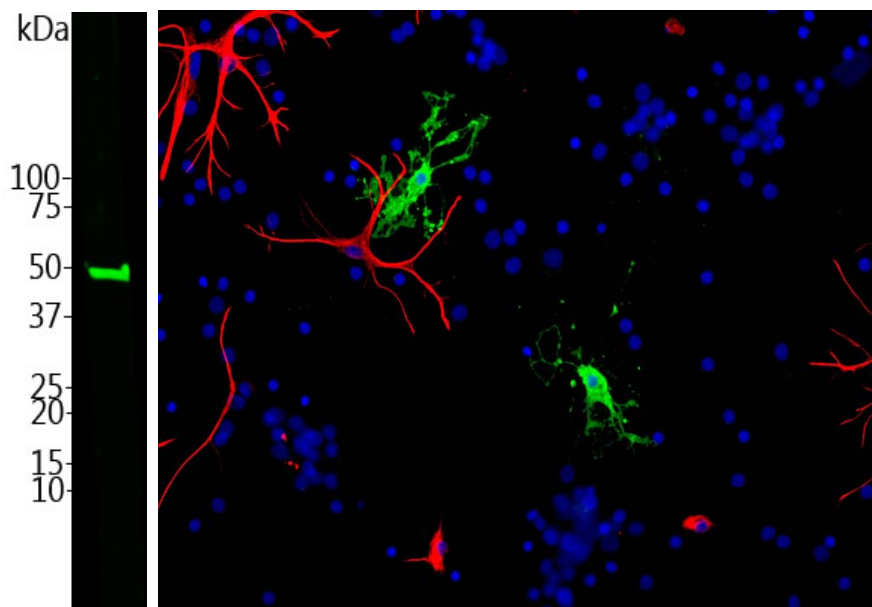


Catalogue# RPCA-CNP: Rabbit Polyclonal to CNP (2',3'-cyclic-nucleotide 3'-phosphodiesterase)

The Immunogen: The 2', 3'-Cyclic Nucleotide 3'-Phosphodiesterase (CNP), is an enzyme which catalyzes the hydrolysis of 2', 3'-cyclic nucleotides to 2'-nucleotides, These cyclic nucleotides are structurally different from the better known and studied 3'-5'-cyclic nucleotides of which the best known example is cyclic AMP. The CNP enzyme hydrolyzes 2',3'-cyclic nucleosidephosphates to produce nucleoside 2'-phosphates and water. CNP has two isoforms, CNPase 1 (46kDa) and CNPase 2 (48kDa), which are encoded separately by different promoters of the same gene (1). This enzyme is present in very high levels in brain and peripheral nerve, makes up 4% of total CNS myelin protein. It is found almost exclusively in oligodendrocytes and Schwann cells. It appears early in oligodendrocyte development, earlier than most other myelin proteins and continues to be expressed at high levels in these cells of adult animals (2). Antibody to CNP has been very useful as a marker for these particular cell types. CNP is thought to play a critical role in the events leading up to myelination, for the oligodendrocytes overexpressing CNP appear to mature earlier in development, resulting in earlier maximum gene expression for myelin basic proteins (3). It has been reported that CNP is also associates with microtubules in brain tissue and may promote microtubule assembly. CNP can link tubulin to cellular membranes, and may regulate cytoplasmic microtubule distribution (4). In various diseases, neurological mutants, and in experimental conditions in which myelin is reduced, CNP levels may also be severely reduced. Decreased brain levels of CNP have also been reported in Down syndrome and Alzheimer's disease (5).

The [HGNC](#) name for this protein is [CNP](#).



Left: Blot of rat brain tissue homogenates blotted with RPCA-CNP at 1:5,000 using LiCor infrared imager. RPCA-CNP binds strongly and specifically to a band at ~48 kDa. Numbers at left show positions of protein standards of indicated molecular weight in kDa. **Right:** Mixed neuron-glia cell cultures stained with RPCA-CNP (green) and our monoclonal antibody against GFAP (red, [MCA-5C10](#)). The CNP antibody stains strongly in oligodendrocytes, whereas GFAP labels the intermediate filament in astrocytes. Blue is DNA staining showing the nuclei of these and numerous other cells, most of which are neurons and which do not express either CNP or GFAP.

Antibody characteristics: This antibody was raised against full length recombinant human CNP expressed in and purified from *E. coli*. Antibody is supplied as an aliquot of serum or purified antibody (0.25 mg/mL).

Suggestions for use: For immunofluorescence try dilutions of 1:1,00-1:2,000 for immunohistochemistry with ABC or other enzymatic amplification procedures try 1:5,000. For western blots try 1:1,000- 1:5,000 dilutions.

Limitations: This product is for research use only and is not approved for use in humans or in clinical diagnosis.

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