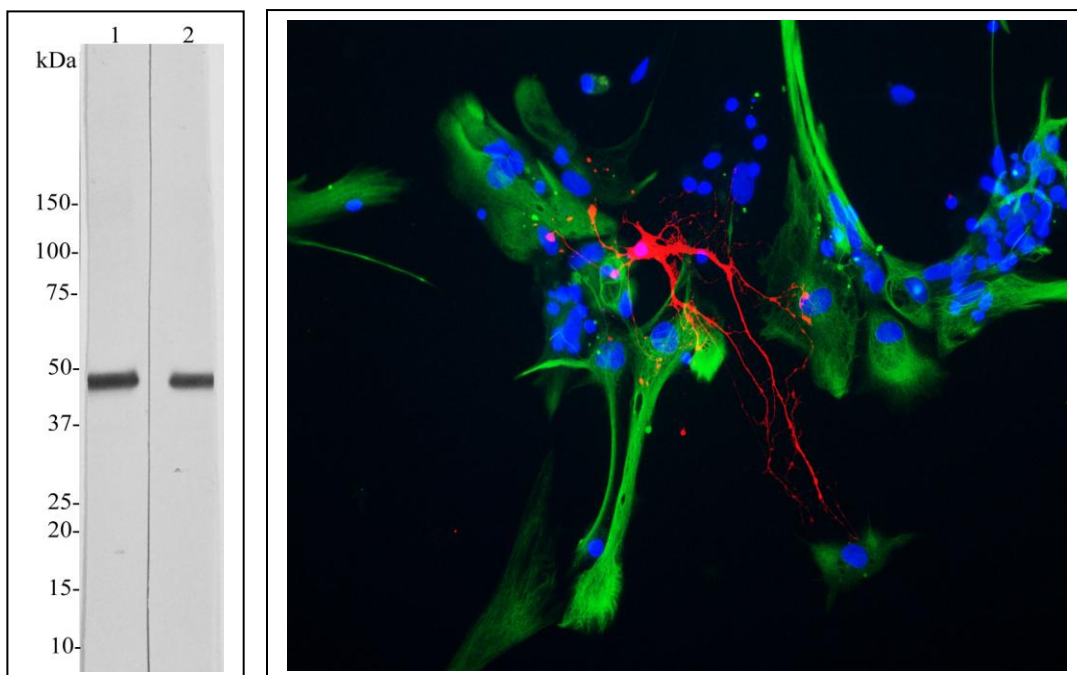


Catalogue#MCA-1H10 mouse monoclonal to CNPase

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 associated 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](#).

Antibody Characteristics: This antibody was raised against full length recombinant human CNP expressed in and purified from *E. coli*. Store at 4°C or -20°C. Avoid repeat freezing and thawing.



Left: Blots of rat brain tissue homogenates probed with MCA-1H10 at 1:5,000 (lane 1) and 1:20,000 (lane 2). The antibody binds strongly and cleanly to a band at ~48kDa. **Right:** Mixed neuron-glia cell cultures stained with MCA-1H10 (red) and our polyclonal antibody against GFAP (green, [RPCA-GFAP](#)). The antibody to CNP stains strongly in oligodendrocytes, whereas GFAP labels only the intermediate filaments in astrocytes. Blue is DNA staining.

Suggestions for use: For immunocytochemistry on cells in tissue culture or in tissue sections, try this antibody at 1:1,000-5,000 using fluorescent secondary antibodies. For immunoblotting 1:10,000 is recommended. Expect to see a band at 48 kDa on western blots.

References:

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3. Gravel M, Peterson J, Yong VW, Kottis V, Trapp B, Braun PE. Overexpression of 2',3'-cyclic nucleotide 3'-phosphodiesterase in transgenic mice alters oligodendrocyte development and produces aberrant myelination. [Molecular and Cellular Neurosciences 11:453-66 \(1996\).](#)
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5. Vlkolinský R, Cairns N, Fountoulakis M, Lubec G. Decreased brain levels of 2',3'-cyclic nucleotide-3'-phosphodiesterase in Down syndrome and Alzheimer's disease. [Neurobiol Aging 22:547-553 \(2001\).](#)

Limitations: This product is for research use only and is not approved for use in humans or in clinical diagnosis. ©EnCor Biotechnology Inc. November 8, 2015.