

# CNPase (F-10): sc-166559

## BACKGROUND

2',3'-cyclic nucleotide-3'-phosphodiesterase (CNPase) is a membrane-bound enzyme that can link tubulin to membranes and may regulate cytoplasmic microtubule distribution. CNPase acts as a microtubule-associated protein by promoting microtubule assembly; this activity resides in the C-terminus of the enzyme. CNPase is firmly associated with tubulin from brain tissue and thyroid cells and can be found at high concentrations in central nervous system myelin and in the outer segments of photoreceptors in the retina. Acute lead intoxication leads to disturbances in CNPase activity and the morphology of myelin.

## REFERENCES

1. Sprinkle, T.J., et al. 1987. Monoclonal antibody production to human and bovine 2',3'-cyclic nucleotide-3'-phosphodiesterase (CNPase): high-specificity recognition in whole brain acetone powders and conservation of sequence between CNP1 and CNP2. *Brain Res.* 426: 349-357.
2. Vogel, U., et al. 1988. Molecular structure, localization and possible functions of the myelin-associated enzyme 2',3'-cyclic nucleotide-3'-phosphodiesterase. *J. Neurochem.* 50: 1667-1677.
3. Dabrowska-Bouta, B., et al. 2000. Acute lead intoxication *in vivo* affects myelin membrane morphology and CNPase activity. *Exp. Toxicol. Pathol.* 52: 257-263.
4. Bifulco, M., et al. 2002. 2',3'-cyclic nucleotide-3'-phosphodiesterase: a membrane-bound, microtubule-associated protein and membrane anchor for tubulin. *Proc. Natl. Acad. Sci. USA* 99: 1807-1812.

## CHROMOSOMAL LOCATION

Genetic locus: CNP (human) mapping to 17q21.2; Cnp (mouse) mapping to 11 D.

## SOURCE

CNPase (F-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 350-390 near the N-terminus of CNPase of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166559 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## APPLICATIONS

CNPase (F-10) is recommended for detection of CNPase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CNPase (F-10) is also recommended for detection of CNPase in additional species, including porcine.

Suitable for use as control antibody for CNPase siRNA (h): sc-44377, CNPase siRNA (m): sc-40398, CNPase shRNA Plasmid (h): sc-44377-SH, CNPase shRNA Plasmid (m): sc-40398-SH, CNPase shRNA (h) Lentiviral Particles: sc-44377-V and CNPase shRNA (m) Lentiviral Particles: sc-40398-V.

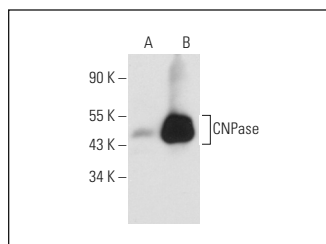
Molecular Weight of CNPase: 46 kDa.

Positive Controls: rat brain extract: sc-2392, CNPase (h2): 293T Lysate: sc-114746 or HeLa whole cell lysate: sc-2200.

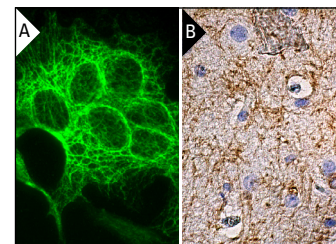
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



CNPase (F-10): sc-166559. Western blot analysis of CNPase expression in non-transfected: sc-117752 (A) and human CNPase transfected: sc-114746 (B) 293T whole cell lysates.



CNPase (F-10): sc-166559. Immunofluorescence staining of formalin-fixed HepG2 cells showing cytoplasmic and membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing staining of neurofilaments (B).

## RESEARCH USE

For research use only, not for use in diagnostic procedures.