

CNPase (K-14): sc-22432

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 and 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. The gene encoding CNPase maps to human chromosome 17q21 and encodes a 46 kDa protein. 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-prime,3-prime-cyclic nucleotide 3-prime-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.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 123830. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

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

SOURCE

CNPase (K-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CNPase of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22432 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

CNPase (K-14) is recommended for detection of CNPase of mouse, rat and, to a lesser extent, human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

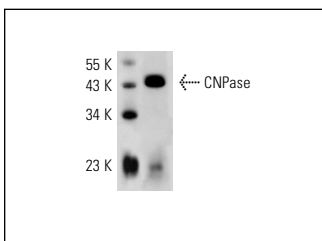
Molecular Weight of CNPase: 46/48 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, rat brain extract: sc-2392 or mouse brain extract: sc-2253.

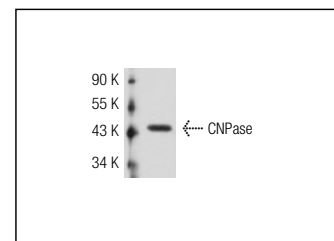
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



CNPase (K-14): sc-22432. Western blot analysis of CNPase expression in HeLa whole cell lysate.



CNPase (K-14): sc-22432. Western blot analysis of CNPase expression in mouse brain tissue extract.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **CNPase (H-2): sc-166558** or **CNPase (G-6): sc-166063**, our highly recommended monoclonal alternatives to CNPase (K-14).