SANTA CRUZ BIOTECHNOLOGY, INC.

CNPase (B-1): sc-166019

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

CNPase (B-1) is a mouse monoclonal antibody raised against amino acids 121-420 mapping at the C-terminus of CNPase of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CNPase (B-1) is recommended for detection of CNPase isoforms 1 and 2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

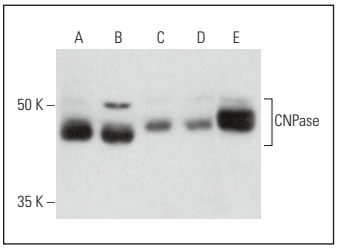
Molecular Weight of CNPase: 46 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, BC_3H1 cell lysate: sc-2299 or CNPase (h2): 293T Lysate: sc-114746.

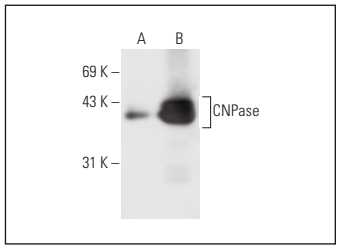
RECOMMENDED SUPPORT REAGENTS

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.

DATA



CNPase (B-1): sc-166019. Western blot analysis of CNPase expression in HeLa (**A**), U-87 MG (**B**), BC_3H1 (**C**), EOC 20 (**D**) and H19-7/IGF-IR (**E**) whole cell lysates.



CNPase (B-1): sc-166019. Western blot analysis of CNPase expression in non-transfected: sc-117752 (**A**) and human CNPase transfected: sc-114746 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ning, B., et al. 2013. Traumatic brain injury induces a downregulation of MSK1 in rat brain cortex. J. Mol. Neurosci. 49: 380-386.
2. Unlu, I., et al. 2018. The cyclic phosphodiesterase CNP and RNA cyclase RtcA fine-tune noncanonical XBP1 splicing during ER stress. J. Biol. Chem. 293: 19365-19376.
3. Rajendran, R., et al. 2021. Oligodendrocyte-specific deletion of FGFR1 reduces cerebellar inflammation and neurodegeneration in MOG_{35-55}-induced EAE. Int. J. Mol. Sci. 22: 9495.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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