SANTA CRUZ BIOTECHNOLOGY, INC.

CNPase (H-2): sc-166558

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 (H-2) 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_1 kappa light chian in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CNPase (H-2) is available conjugated to agarose (sc-166558 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166558 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166558 PE), fluorescein (sc-166558 FITC), Alexa Fluor® 488 (sc-166558 AF488), Alexa Fluor® 546 (sc-166558 AF546), Alexa Fluor® 594 (sc-166558 AF594) or Alexa Fluor® 647 (sc-166558 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166558 AF680) or Alexa Fluor® 790 (sc-166558 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166558 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

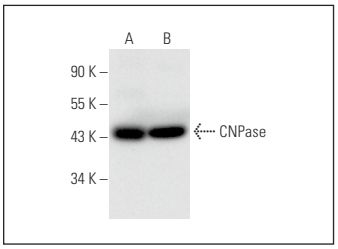
CNPase (H-2) is recommended for detection of CNPase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 (H-2) 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.

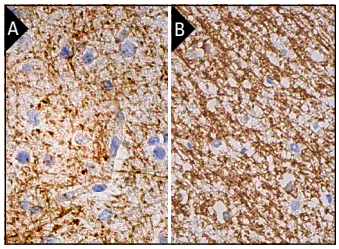
Molecular Weight of CNPase: 46 kDa.

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

DATA



CNPase (H-2): sc-166558. Western blot analysis of CNPase expression in mouse brain (**A**) and rat brain (**B**) tissue extracts.



CNPase (H-2): sc-166558. Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing staining of neurofilaments (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human hippocampus tissue showing neuropil staining (**B**).

SELECT PRODUCT CITATIONS

1. Gao, X., et al. 2014. Identification of rat respiratory mucosa stem cells and comparison of the early neural differentiation potential with the bone marrow mesenchymal stem cells *in vitro*. Cell. Mol. Neurobiol. 34: 257-268.
2. Stevenson, T.J., et al. 2020. α-synuclein inclusions are abundant in non-neuronal cells in the anterior olfactory nucleus of the Parkinson's disease olfactory bulb. Sci. Rep. 10: 6682.
3. Pepe, G., et al. 2023. Treatment with the glycosphingolipid modulator THI rescues myelin integrity in the striatum of R6/2 HD mice. Int. J. Mol. Sci. 24: 5956.
4. Zhang, Y., et al. 2023. Early growth response 2 in the mPFC regulates mouse social and cooperative behaviors. Lab Anim. 52: 37-50.

STORAGE

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