SANTA CRUZ BIOTECHNOLOGY, INC.

4.1N (B-7): sc-374368

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

4.1N protein (band 4.1-like protein 1, neuronal protein 4.1) binds and stabilizes D2 and D3 dopamine receptors at the neuronal plasma membrane. 4.1 adapter proteins mediate interactions between the cytoskeleton and the overlying plasma membrane. These multiple 4.1N interactions with the cell cytoskeleton and plasma membrane may confer stability and plasticity to neuronal membrane. The 4.1N protein is expressed highly in the brain, and is found at lower levels in heart, kidney, pancreas, placenta, lung and skeletal muscle. Four homologous genes (4.1R, 4.1G, 4.1N, and 4.1B) undergo complex alternative splicing. The distribution of these 4.1 spliced gene products along the nephron suggests their involvement in targeting of selected transmembrane proteins in kidney epithelium and, therefore, in regulation of specific kidney functions.

REFERENCES

1. Ye, K., et al. 1999. Protein 4.1N binding to nuclear mitotic apparatus protein in PC12 cells mediates the antiproliferative actions of nerve growth factor. J. Neurosci. 19: 10747-10756.
2. Ye, K., et al. 2000. A nuclear gtpase that enhances PI3kinase activity and is regulated by protein 4.1N. Cell 103: 919-930.
3. Binda, A.V., et al. 2002. D2 and D3 dopamine receptor cell surface localization mediated by interaction with protein 4.1N. Mol. Pharmacol. 62: 507-513.
4. Zhang, S., et al. 2003. Protein 4.1N is required for translocation of inositol 1,4,5-trisphosphate receptor type 1 to the basolateral membrane domain in polarized Madin-Darby canine kidney cells. J. Biol. Chem. 278: 4048-4056.
5. Ramez, M., et al. 2003. Distinct distribution of specific members of protein 4.1 gene family in the mouse nephron. Kidney Int. 63: 1321-1337.
6. Fukatsu, K., et al. 2004. Lateral diffusion of inositol 1,4,5-trisphosphate receptor type 1 is regulated by Actin filaments and 4.1N in neuronal dendrites. J. Biol. Chem. 279: 48976-48982.
7. SWISS-PROT/TrEMBL (Q9H4G0). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html.

CHROMOSOMAL LOCATION

Genetic locus: EPB41L1 (human) mapping to 20q11.23.

SOURCE

4.1N (B-7) is a mouse monoclonal antibody raised against amino acids 573-765 mapping within an internal region of 4.1N of human 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.

STORAGE

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

APPLICATIONS

4.1N (B-7) is recommended for detection of 4.1N of 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 4.1N siRNA (h): sc-105013, 4.1N shRNA Plasmid (h): sc-105013-SH and 4.1N shRNA (h) Lentiviral Particles: sc-105013-V.

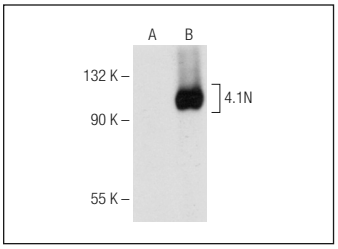
Molecular Weight of 4.1N: 100-135 kDa.

Positive Controls: 4.1N (h4): 293T Lysate: sc-176778.

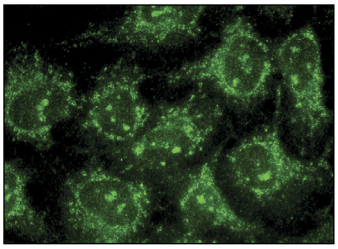
RECOMMENDED SUPPORT REAGENTS

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



4.1N (B-7): sc-374368. Western blot analysis of 4.1N expression in non-transfected: sc-117752 (**A**) and human 4.1N transfected: sc-176778 (**B**) 293T whole cell lysates.



4.1N (B-7): sc-374368. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

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.