SANTA CRUZ BIOTECHNOLOGY, INC.

4.1N (4): sc-135817

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 cytoskelton 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. Pike. A nuclear GTPase that enhances PI3 kinase 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. 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.
5. 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.
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; Epb4.1l1 (mouse) mapping to 2 H1.

SOURCE

4.1N (4) is a mouse monoclonal antibody raised against amino acids 510-626 of 4.1N of mouse origin.

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 for detailed protocols and support products.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, 20% glycerol and 0.04% stabilizer protein.

APPLICATIONS

4.1N (4) is recommended for detection of 4.1N of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for 4.1N siRNA (h): sc-105013, 4.1N siRNA (m): sc-108941, 4.1N shRNA Plasmid (h): sc-105013-SH, 4.1N shRNA Plasmid (m): sc-108941-SH, 4.1N shRNA (h) Lentiviral Particles: sc-105013-V and 4.1N shRNA (m) Lentiviral Particles: sc-108941-V.

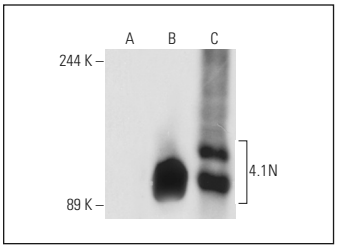
Molecular Weight of 4.1N: 100-135 kDa.

Positive Controls: 4.1N (h4): 293T Lysate: sc-176778, rat brain extract: sc-2392 or rat cerebrum tissue extract.

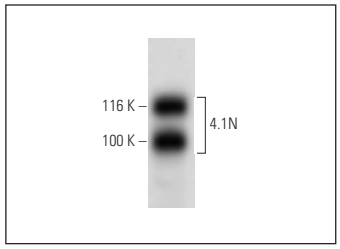
RECOMMENDED SUPPORT REAGENTS

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).

DATA



4.1N (4): sc-135817. 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 and rat brain tissue extract (**C**).



4.1N (4): sc-135817. Western blot analysis of 4.1N expression in rat cerebrum tissue extract.

RESEARCH USE

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