

Technical Data Sheet

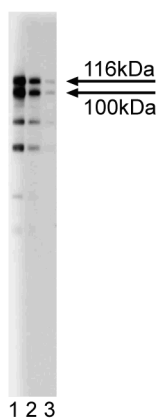
Purified Mouse Anti-4.1N**Product Information**

Material Number:	611836
Size:	50 µg
Concentration:	250 µg/ml
Clone:	4/4.1N
Immunogen:	Mouse 4.1N aa. 510-626
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Rat Tested in Development: Mouse, Human, Chicken, Dog
Target MW:	116 & 100 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

Description

The erythrocyte membrane cytoskeletal protein, 4.1R, is an important structural element of red blood cells. It contains a spectrin-actin-binding domain (SABD) that facilitates spectrin interaction with F-actin and a membrane-binding domain (MBD) that links the cytoskeleton to the plasma membrane via interactions with Band 3 protein. Two homologues of 4.1R, 4.1G and 4.1N, are expressed throughout the body and in neurons, respectively. These 4.1 proteins contain Ca²⁺-dependent (CD-CaM) and Ca²⁺-independent calmodulin (CI-CaM) binding sites within the MBD domain, a centrally located SABD, and a conserved C-terminal domain (CTD). 4.1N expression is high throughout the adult brain and lower in heart, kidney, and pancreas. In neurons, 4.1N protein co-localizes with PSD-95 and GluR1 at sites of synaptic contacts and the CTD of 4.1N allows binding to the C-terminus of GluR1. In addition, 4.1N interacts with the PI3-Kinase enhancer (PIKE) protein and translocates to the nucleus along with PIKE in response to NGF treatment. Thus, 4.1N is a neuronal membrane cytoskeletal protein that may be involved with localization of proteins such as neurotransmitter receptors and signaling molecules. Predominant isoforms of 4.1 proteins have been reported to be observable between 30-210 kD due to complex alternative splicing events. 4.1N has been reported to be observable in a range of 100-135 kD in neuronal populations.

This antibody is routinely tested by western blot analysis. Other applications were tested at BD Biosciences Pharmingen during antibody development only or reported in the literature.



Western blot analysis of 4.1N on a rat cerebrum lysate.
Lane 1: 1:5000, lane 2: 1:10,000, lane 3: 1:20,000 dilution of the mouse anti-4.1N antibody.

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography. Store undiluted at -20° C.

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Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Not Recommended

Suggested Companion Products

Catalog Number	Name	Size	Clone
611463	Rat Cerebrum Lysate	500 µg	(none)
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharming/en/protocols for technical protocols.
3. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
4. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.

References

Shen L, Liang F, Walensky LD, Huganir RL. Regulation of AMPA receptor GluR1 subunit surface expression by a 4. 1N-linked actin cytoskeletal association. *J Neurosci.* 2000; 20(21):7932-7940.(Biology)

Walensky LD, Blackshaw S, Liao D, et al. A novel neuron-enriched homolog of the erythrocyte membrane cytoskeletal protein 4.1. *J Neurosci.* 1999; 19(15):6457-6467.(Biology)

Ye K, Hurt KJ, Wu FY, et al. Pike. A nuclear gtpase that enhances PI3kinase activity and is regulated by protein 4.1N. *Cell.* 2000; 103(6):919-930.(Biology)