SANTA CRUZ BIOTECHNOLOGY, INC.

4.1R (h): 293T Lysate: sc-114567

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The 4.1 gene family encodes a group of multifunctional cytoskeletal proteins (4.1R, 4.1G, 4.1N and 4.1B) which are predominantly expressed in the nervous system. 4.1G is a protein that stabilizes spectrin-Actin interactions and is associated with hereditary elliptocytosis. Red blood cell 4.1, designated 4.1R, is a multifunctional protein that is essential for maintaining erythrocyte shape and membrane mechanical properties. Both 4.1R and 4.1G are distributed in a unique pattern in the cerebellum and are believed to modulate the membrane mechanical properties of neuronal cells by promoting fodrin/Actin association. 4.1N and 4.1B, designated EPB41L1 and EPB41L3, respectively, are strongly expressed in the brain. Antibodies to 4.1N have been reported to detect multiple forms, each enriched in postsynaptic density preparations relative to brain homogenate. Antibodies to 4.1B have been reported to detect two forms.

REFERENCES

1. Peters, L.L., Weier, H.U., Walensky, L.D., Snyder, S.H., Parra, M., Mohandas, N. and Conboy, J.G. 1998. Four paralogous protein 4.1 genes map to distinct chromosomes in mouse and human. Genomics 54: 348-350.
2. Takakuwa, Y. 2000. Protein 4.1, a multifunctional protein of the erythrocyte membrane skeleton: structure and functions in erythrocytes and nonerythroid cells. Int. J. Hematol. 72: 298-309.
3. Ohara, R., Yamakawa, H., Nakayama, M. and Ohara, O. 2000. Type II brain 4.1 (4.1B/KIAA0987), a member of the protein 4.1 family, is localized to neuronal paranodes. Brain Res. Mol. Brain Res. 85: 41-52.
4. Kontrogianni-Konstantopoulos, A., Frye, C.S., Benz, E.J.J. and Huang, S.C. 2001. The prototypical 4.1R-10-kDa domain and the 4.1g-10-kDa paralog mediate fodrin-Actin complex formation. J. Biol. Chem. 276: 20679-20687.
5. Scott, C., Keating, L., Bellamy, M. and Baines, A.J. 2001. Protein 4.1 in forebrain postsynaptic density preparations: enrichment of 4.1 gene products and detection of 4.1R binding proteins. Eur. J. Biochem. 268: 1084-1094.
6. LocusLink Report (LocusID: 2036). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: EPB41 (human) mapping to 1p35.3.

PRODUCT

4.1R (h): 293T Lysate represents a lysate of human 4.1R transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

4.1R (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive 4.1R antibodies. Recommended use: 10-20 µl per lane.

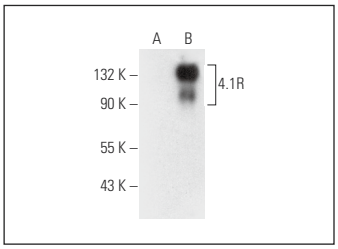
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

4.1R (A-4): sc-398983 is recommended as a positive control antibody for Western Blot analysis of enhanced human 4.1R expression in 4.1R transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

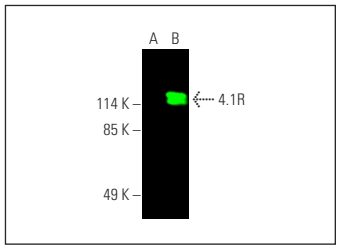
RECOMMENDED SUPPORT REAGENTS

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.

DATA



4.1R (A-4): sc-398983. Western blot analysis of 4.1R expression in non-transfected: sc-117752 (**A**) and human 4.1R transfected: sc-114567 (**B**) 293T whole cell lysates.



4.1R (B-11): sc-166759. Near-infrared western blot analysis of 4.1R expression in non-transfected: sc-117752 (**A**) and human 4.1R transfected: sc-114567 (**B**) 293T whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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.