

4.1B (E-20): sc-25964

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., et al. 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., et al. 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. Kontogianni-Konstantopoulos, A., et al. 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., et al. 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: EPB41L3 (human) mapping to 18p11.31; Epb4.1I3 (mouse) mapping to 17 E1.3.

SOURCE

4.1B (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of 4.1B of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-25964 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

4.1B (E-20) is recommended for detection of 4.1B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

4.1B (E-20) is also recommended for detection of 4.1B in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for 4.1B siRNA (h): sc-40291, 4.1B siRNA (m): sc-40292, 4.1B shRNA Plasmid (h): sc-40291-SH, 4.1B shRNA Plasmid (m): sc-40292-SH, 4.1B shRNA (h) Lentiviral Particles: sc-40291-V and 4.1B shRNA (m) Lentiviral Particles: sc-40292-V.

Molecular Weight of 4.1B: 108 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, Hep G2 cell lysate: sc-2227 or HeL 92.1.7 cell lysate: sc-2270.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

MONOS
Satisfaction
Guaranteed

Try **4.1B (B-6): sc-398089** or **4.1B (A-7): sc-514386**, our highly recommended monoclonal alternatives to 4.1B (E-20).