

## 4.1B (485): sc-100641

### 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

- 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.
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- Takakuwa, Y. 2000. Protein 4.1, a multifunctional protein of the erythrocyte membrane skeleton: structure and functions in erythrocytes and non-erythroid cells. *Int. J. Hematol.* 72: 298-309.
- 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.
- Kontrogiani-Konstantopoulos, A., Frye, C.S., Benz, E.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.
- LocusLink Report (LocusID: 2036). <http://www.ncbi.nlm.nih.gov/LocusLink/>

### CHROMOSOMAL LOCATION

Genetic locus: EPB41L3 (human) mapping to 18p11.31.

### SOURCE

4.1B (485) is a mouse monoclonal antibody raised against recombinant 4.1B of human origin.

### PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> 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

4.1B (485) is recommended for detection of 4.1B of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

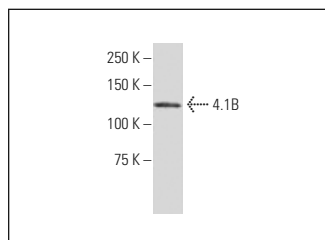
Molecular Weight of 4.1B: 108 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

### 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



4.1B (485): sc-100641. Western blot analysis of 4.1B expression in Hep G2 whole cell lysate.

### SELECT PRODUCT CITATIONS

- Huisman, C., van der Wijst, M.G., Falahi, F., Overkamp, J., Karsten, G., Terpstra, M.M., Kok, K., van der Zee, A.G., Schuurings, E., Wisman, G.B. and Rots, M.G. 2015. Prolonged re-expression of the hypermethylated gene EPB41L3 using artificial transcription factors and epigenetic drugs. *Epigenetics* 10: 384-396.

### RESEARCH USE

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

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.