

spectrin β I (B-2): sc-377437

BACKGROUND

Spectrin, an Actin-binding protein that is a major component of the cytoskeletal superstructure of the erythrocyte plasma membrane, is essential in determining the properties of the membrane, including its shape and deformability. Spectrins function as membrane organizers and stabilizers, composed of non-homologous α and β chains, which aggregate side-to-side in an antiparallel fashion to form dimers, tetramers and higher polymers. Spectrin α I and spectrin β I are present in erythrocytes, whereas spectrin α II (also designated fodrin α) and spectrin β II (also designated fodrin β) are present in other somatic cells. The spectrin tetramers in erythrocytes act as barriers to lateral diffusion, but spectrin dimers seem to lack this function. Activation of calpain results in the breakdown of spectrin α II, a neuronal cytoskeleton protein.

REFERENCES

1. Speicher, D.W. 1986. The present status of erythrocyte spectrin structure: the 106-residue repetitive structure is a basic feature of an entire class of proteins. *J. Cell. Biochem.* 30: 245-258.
2. Gardner, K. and Bennett, V. 1987. Modulation of spectrin-Actin assembly by erythrocyte adducin. *Nature* 328: 359-362.
3. Coelman, T.R., Fishkind, D.J., Mooseker, M.S. and Morrow, J.S. 1989. Functional diversity among spectrin isoforms. *Cell Motil. Cytoskeleton* 12: 225-247.
4. Saxton, M.J. 1989. The spectrin network as a barrier to lateral diffusion in erythrocytes. A percolation analysis. *Biophys. J.* 55: 21-28.
5. Fowler, V.M. and Adam, E.J. 1992. Spectrin redistributes to the cytosol and is phosphorylated during mitosis in cultured cells. *J. Cell Biol.* 119: 1559-1572.
6. Kennedy, S.P., Weed, S.A., Forget, B.G. and Morrow, J.S. 1994. A partial structural repeat forms the heterodimer self-association site of all β spectrins. *J. Biol. Chem.* 269: 11400-11408.
7. Clark, M.B., Ma, Y., Bloom, M.L., Barker, J.E., Zagon, I.S., Zimmer, W.E. and Goodman, S.R. 1994. Brain α erythroid spectrin: identification, compartmentalization and β spectrin associations. *Brain Res.* 663: 223-236.

CHROMOSOMAL LOCATION

Genetic locus: SPTB (human) mapping to 14q23.3; Sptb (mouse) mapping to 12 C3.

SOURCE

spectrin β I (B-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-29 at the N-terminus of spectrin β I of human origin.

PRODUCT

Each vial contains 200 μ g IgG₃ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-377437 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

spectrin β I (B-2) is recommended for detection of spectrin β I of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

spectrin β I (B-2) is also recommended for detection of spectrin β I in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for spectrin β I siRNA (h): sc-36547, spectrin β I siRNA (m): sc-36548, spectrin β I shRNA Plasmid (h): sc-36547-SH, spectrin β I shRNA Plasmid (m): sc-36548-SH, spectrin β I shRNA (h) Lentiviral Particles: sc-36547-V and spectrin β I shRNA (m) Lentiviral Particles: sc-36548-V.

Molecular Weight (predicted) of spectrin β I: 246 kDa.

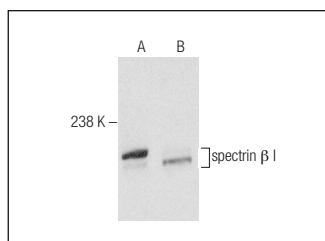
Molecular Weight (observed) of spectrin β I: 188-277 kDa.

Positive Controls: HEL 92.1.7 cell lysate: sc-2270, rat cerebellum extract: sc-2398 or rat heart extract: sc-2393.

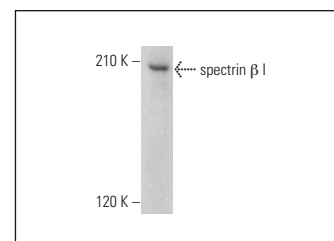
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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).
 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



spectrin β I (B-2): sc-377437. Western blot analysis of spectrin β I expression in rat cerebellum tissue extract (A) and HEL 92.1.7 whole cell lysate (B).



spectrin β I (B-2): sc-377437. Western blot analysis of spectrin β I expression in rat heart tissue extract.

STORAGE

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

RESEARCH USE

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