

spectrin β III (H-70): sc-28273

BACKGROUND

Spectrin is an actin binding protein that is a major component of the plasma membrane skeleton. Spectrins function as membrane organizers and stabilizers by forming dimers, tetramers and higher polymers. Spectrin α and spectrin β are present in erythrocytes, whereas spectrin α II (also designated fodrin α) and spectrin β I (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. Spectrin β III is highly homologous to both spectrin β I and spectrin β II. Western blot analysis shows that spectrin β III migrates at a higher molecular mass than predicted in the kidney. Spectrin β III is highly expressed in brain, kidney, pancreas and liver, and at lower levels in lung and placenta. Specifically, spectrin β III constitutes a major component of the Golgi and vesicular membrane skeletons.

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., et al. 1987. Modulation of spectrin-actin assembly by erythrocyte adducin. *Nature* 328: 359-362.
3. Coelman, T.R., et al. 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. Kennedy, S.P., et al. 1994. A partial structural repeat forms the heterodimer self-association site of all β -spectrins. *J. Biol. Chem.* 269: 11400-11408.
6. Stankewich, M.C., et al. 1998. A widely expressed β III spectrin associated with Golgi and cytoplasmic vesicles. *Proc. Natl. Acad. Sci. USA* 95: 14158-14163.

CHROMOSOMAL LOCATION

Genetic locus: SPTBN2 (human) mapping to 11q13.2; Spnb3 (mouse) mapping to 19 A.

SOURCE

spectrin β III (H-70) is a rabbit polyclonal antibody raised against amino acids 2311-2380 mapping near the C-terminus of spectrin β III of human origin.

PRODUCT

Each vial contains 200 μ g IgG 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.

RESEARCH USE

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

APPLICATIONS

spectrin β III (H-70) is recommended for detection of spectrin β III of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

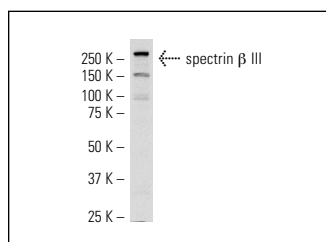
spectrin β III (H-70) is also recommended for detection of spectrin β III in additional species, including canine and bovine.

Suitable for use as control antibody for spectrin β III siRNA (h): sc-43432, spectrin β III siRNA (m): sc-43433, spectrin β III shRNA Plasmid (h): sc-43432-SH, spectrin β III shRNA Plasmid (m): sc-43433-SH, spectrin β III shRNA (h) Lentiviral Particles: sc-43432-V and spectrin β III shRNA (m) Lentiviral Particles: sc-43433-V.

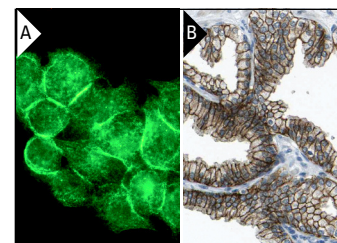
Molecular Weight of spectrin β III: 246 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, rat brain extract: sc-2392 or mouse brain extract: sc-2253.

DATA



spectrin β III (H-70): sc-28273. Western blot analysis of spectrin β III expression in SK-N-SH whole cell lysate.



spectrin β III (H-70): sc-28273. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human prostate tissue showing membrane staining of glandular cells at high magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

1. Bauer, D., et al. 2008. Abnormal expression of glutamate transporter and transporter interacting molecules in prefrontal cortex in elderly patients with schizophrenia. *Schizophr. Res.* 104: 108-120.
2. Salcedo-Sicilia, L., et al. 2013. β III spectrin regulates the structural integrity and the secretory protein transport of the Golgi complex. *J. Biol. Chem.* 288: 2157-2166.


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Try **spectrin β III (4D9): sc-293284**, our highly recommended monoclonal alternative to spectrin β III (H-70).