SANTA CRUZ BIOTECHNOLOGY, INC.

spectrin β III (V-20): sc-9661

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. Coleman, T.R., et al. 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 βIII 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 (V-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of spectrin β III 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-9661 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

spectrin β III (V-20) is recommended for detection of spectrin β III of human and, to a lesser extent, mouse and rat 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).

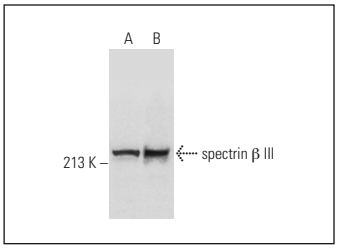
spectrin β III (V-20) is also recommended for detection of spectrin β III in additional species, including canine and bovine.

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.

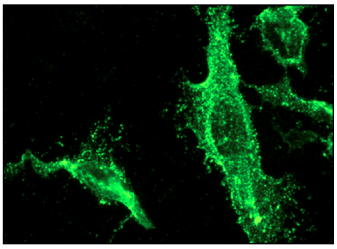
Molecular Weight of spectrin β III: 246 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, IMR-32 cell lysate: sc-2409 or HeLa whole cell lysate: sc-2200.

DATA



spectrin β III (V-20): sc-9661. Western blot analysis of spectrin β III expression in HeLa (**A**) and IMR-32 (**B**) whole cell lysates.



spectrin β III (V-20): sc-9661. Immunofluorescence staining of methanol-fixed SK-N-SH cells showing membrane and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Farioli-Vecchioli, S., et al. 2014. Running rescues defective adult neurogenesis by shortening the length of the cell cycle of neural stem and progenitor cells. Stem Cells 32: 1968-1982.

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.