SANTA CRUZ BIOTECHNOLOGY, INC.

spectrin β II (F-11): sc-376487

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Spectrin is an Actin binding protein that is a major component of the cytoskeletal superstructure of the erythrocyte plasma membrane. Spectrins function as membrane organizers and stabilizers by forming 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. Spectrin β II, which is involved in secretion, interacts with calmodulin in a calcium-dependent manner and is thus a candidate for the calcium-dependent movement of the cytoskeleton at the membrane. The human SPTBN1 gene encodes the nonerythroid form of β-spectrin.

REFERENCES

1. Speicher, D.W., et al. 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. 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. Prchal, J.T., et al. 1990. Patterns of spectrin transcripts in erythroid and non-erythroid cells. J. Cell. Physiol. 144: 287-294.
6. Chang, J.G., et al. 1993. Cloning of a portion of the chromosomal gene and cDNA for human β-fodrin, the nonerythroid form of β-spectrin. Genomics 17: 287-293.
7. Ma, Y., et al. 1993. The complete amino acid sequence for brain β spectrin (β fodrin): relationship to globin sequences. Brain Res. Mol. Brain Res. 18: 87-99.
8. 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.
9. SWISS-PROT/TrEMBL (Q01082). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: SPTBN1 (human) mapping to 2p16.2; Spnb2 (mouse) mapping to 11 A3.3.

SOURCE

spectrin β II (F-11) is a mouse monoclonal antibody raised against amino acids 2086-2210 mapping near the C-terminus of spectrin β II of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

spectrin β II (F-11) is recommended for detection of spectrin β II of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), 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).

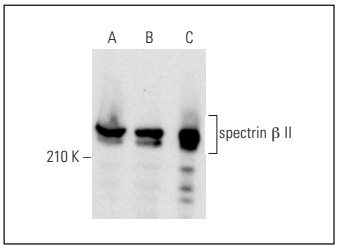
spectrin β II (F-11) is also recommended for detection of spectrin β II in additional species, including canine.

Suitable for use as control antibody for spectrin β II siRNA (h): sc-36551, spectrin β II siRNA (m): sc-36552, spectrin β II shRNA Plasmid (h): sc-36551-SH, spectrin β II shRNA Plasmid (m): sc-36552-SH, spectrin β II shRNA (h) Lentiviral Particles: sc-36551-V and spectrin β II shRNA (m) Lentiviral Particles: sc-36552-V.

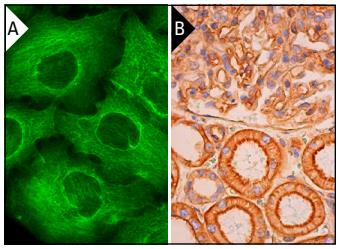
Molecular Weight of spectrin β II: 240/270 kDa.

Positive Controls: Caco-2 cell lysate: sc-2262, HeLa whole cell lysate: sc-2200 or A549 cell lysate: sc-2413.

DATA



spectrin β II (F-11): sc-376487. Western blot analysis of spectrin β II expression in HeLa (**A**), A549 (**B**) and Caco-2 (**C**) whole cell lysates.



spectrin β II (F-11): sc-376487. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic and membrane staining of cells in glomeruli and cells in tubules (**B**).

SELECT PRODUCT CITATIONS

1. Piersma, B., et al. 2018. αII-spectrin and βII-spectrin do not affect TGFβ1-induced myofibroblast differentiation. Cell Tissue Res. 374: 165-175.

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.

PROTOCOLS

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