SANTA CRUZ BIOTECHNOLOGY, INC.

spectrin β II (F-7): sc-515592

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. 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., et al. 1989. Functional diversity among spectrin isoforms. Cell Motil. Cytoskeleton 12: 225-247.

CHROMOSOMAL LOCATION

Genetic locus: SPTBN1 (human) mapping to 2p16.2; Sptbn1 (mouse) mapping to 11 A3.3.

SOURCE

spectrin β II (F-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2341-2363 at 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.

spectrin β II (F-7) is available conjugated to agarose (sc-515592 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515592 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515592 PE), fluorescein (sc-515592 FITC), Alexa Fluor® 488 (sc-515592 AF488), Alexa Fluor® 546 (sc-515592 AF546), Alexa Fluor® 594 (sc-515592 AF594) or Alexa Fluor® 647 (sc-515592 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515592 AF680) or Alexa Fluor® 790 (sc-515592 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-515592 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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RESEARCH USE

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

APPLICATIONS

spectrin β II (F-7) 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for spectrin β II siRNA (h): sc-36551, spectrin β II siRNA (m2): sc-270043, spectrin β II shRNA Plasmid (h): sc-36551-SH, spectrin β II shRNA Plasmid (m2): sc-270043-SH, spectrin β II shRNA (h) Lentiviral Particles: sc-36551-V and spectrin β II shRNA (m2) Lentiviral Particles: sc-270043-V.

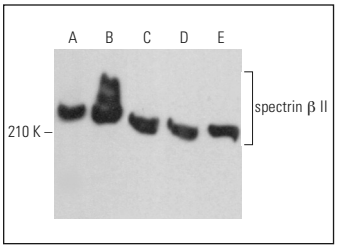
Molecular Weight of spectrin β II short/long forms: 240/270 kDa.

Positive Controls: A-10 cell lysate: sc-3806, Caco-2 cell lysate: sc-2262 or HeLa whole cell lysate: sc-2200.

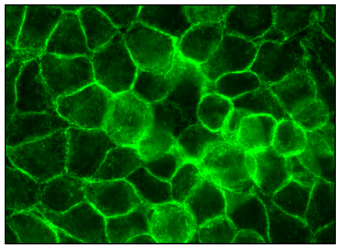
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 II (F-7): sc-515592. Western blot analysis of spectrin β II expression in HeLa (**A**), Caco-2 (**B**), 3T3-L1 (**C**), KNRK (**D**) and A-10 (**E**) whole cell lysates.



spectrin β II (F-7): sc-515592. Immunofluorescence staining of formalin-fixed HeLa cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Ma, X., et al. 2021. β2SP/TET2 complex regulates gene 5hmC modification after cerebral ischemia. J. Cell. Mol. Med. 25: 11300-11309.
2. Li, H., et al. 2022. Mechanism of INSR clustering with Insulin activation and resistance revealed by super-resolution imaging. Nanoscale 14: 7747-7755.

STORAGE

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