SANTA CRUZ BIOTECHNOLOGY, INC.

spectrin α I (C-20): sc-7464

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. Defects of spectrin α I are present in the erythrocytes of many patients with abnormalities of red blood cell shape including hereditary spherocytosis and elliptocytosis.

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.
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3. Coleman, 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. 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 spectrins β. J. Biol. Chem. 269: 11400-11408.
6. Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 182860. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
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CHROMOSOMAL LOCATION

Genetic locus: SPTA1 (human) mapping to 1q23.1; Spna1 (mouse) mapping to 1 H3.

SOURCE

spectrin α I (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of spectrin α I of human origin.

STORAGE

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

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-7464 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

spectrin α I (C-20) is recommended for detection of spectrin α I of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 α I siRNA (h): sc-43430, spectrin α I siRNA (m): sc-43431, spectrin α I shRNA Plasmid (h): sc-43430-SH, spectrin α I shRNA Plasmid (m): sc-43431-SH, spectrin α I shRNA (h) Lentiviral Particles: sc-43430-V and spectrin α I shRNA (m) Lentiviral Particles: sc-43431-V.

Molecular Weight of spectrin α I: 230-280 kDa.

Positive Controls: Hel 92.1.7 cell lysate: sc-2270, K-562 whole cell lysate: sc-2203 or rat heart extract: sc-2393.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Jacobs-Helber, S.M., Abutin, R.M, Tian, C., Bondurant, M., Wickrema, A. and Sawyer, S.T. 2002. Role of JunB in erythroid differentiation. J. Biol. Chem. 277: 4859-4866.

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.