SANTA CRUZ BIOTECHNOLOGY, INC.

spectrin α I (IID2): sc-53900

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. Harris, A.S., et al. 1986. Mechanisms of cytoskeletal regulation: functional and antigenic diversity in human erythrocyte and brain β spectrin. J. Cell. Biochem. 30: 51-69.
2. 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.
3. Gardner, K. and Bennett, V. 1987. Modulation of spectrin-actin assembly by erythrocyte adducin. Nature 328: 359-362.
4. Leto, T.L., et al. 1988. Comparison of non-erythroid α spectrin genes reveals strict homology among diverse species. Mol. Cell. Biol. 8: 1-9.
5. Coleman, T.R., et al. 1989. Functional diversity among spectrin isoforms. Cell Motil. Cytoskeleton 12: 225-247.

CHROMOSOMAL LOCATION

Genetic locus: SPTA1 (human) mapping to 1q23.1; Spta1 (mouse) mapping to 1 H3.

SOURCE

spectrin α I (IID2) is a mouse monoclonal antibody raised against the N-terminus epitope of purified erythrocyte spectrin α I of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

spectrin α I (IID2) is available conjugated to agarose (sc-53900 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53900 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53900 PE), fluorescein (sc-53900 FITC), Alexa Fluor® 488 (sc-53900 AF488), Alexa Fluor® 546 (sc-53900 AF546), Alexa Fluor® 594 (sc-53900 AF594) or Alexa Fluor® 647 (sc-53900 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53900 AF680) or Alexa Fluor® 790 (sc-53900 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

spectrin α I (IID2) is recommended for detection of spectrin α I of mouse, rat, human and canine 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

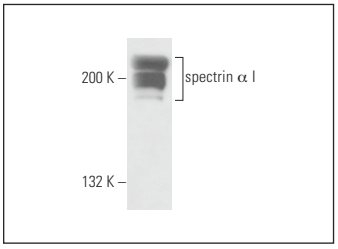
Molecular Weight of spectrin α I: 240 kDa.

Positive Controls: rat brain extract: sc-2392, Hs68 cell lysate: sc-2230 or K-562 whole cell lysate: sc-2203.

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 α I (IID2): sc-53900. Western blot analysis of spectrin α I expression in K-562 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Opsahl, J.A., et al. 2013. Identification of dynamic changes in proteins associated with the cellular cytoskeleton after exposure to okadaic acid. Mar. Drugs 11: 1763-1782.

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.