SANTA CRUZ BIOTECHNOLOGY, INC.

spectrin α I (B-12): sc-271130

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.

CHROMOSOMAL LOCATION

Genetic locus: SPTA1 (human) mapping to 1q23.1.

SOURCE

spectrin α I (B-12) is a mouse monoclonal antibody raised against amino acids 541-650 of spectrin α I 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 α I (B-12) is available conjugated to agarose (sc-271130 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271130 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271130 PE), fluorescein (sc-271130 FITC), Alexa Fluor® 488 (sc-271130 AF488), Alexa Fluor® 546 (sc-271130 AF546), Alexa Fluor® 594 (sc-271130 AF594) or Alexa Fluor® 647 (sc-271130 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271130 AF680) or Alexa Fluor® 790 (sc-271130 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

spectrin α I (B-12) is recommended for detection of spectrin α I of 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).

Suitable for use as control antibody for spectrin α I siRNA (h): sc-43430, spectrin α I shRNA Plasmid (h): sc-43430-SH and spectrin α I shRNA (h) Lentiviral Particles: sc-43430-V.

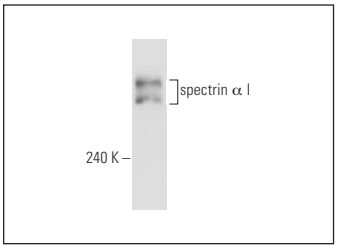
Molecular Weight of spectrin α I: 230-280 kDa.

Positive Controls: TF-1 cell lysate: sc-2412, K-562 whole cell lysate: sc-2203 or SK-N-SH cell lysate: sc-2410.

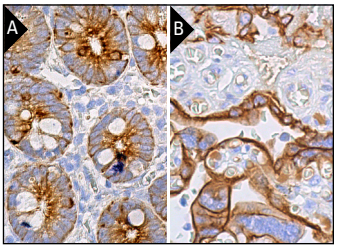
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



spectrin α I (B-12): sc-271130. Western blot analysis of spectrin α I expression in K-562 whole cell lysate.



spectrin α I (B-12): sc-271130. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing membrane and cytoplasmic staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and membrane staining of trophoblastic cells (**B**).

SELECT PRODUCT CITATIONS

1. Prasad, R., et al. 2012. Expression, characterization, and cellular localization of knowpains, papain-like cysteine proteases of the *Plasmodium knowlesi* malaria parasite. PLoS ONE 7: e51619.
2. Davies, H., et al. 2020. An exported kinase family mediates species-specific erythrocyte remodelling and virulence in human malaria. Nat. Microbiol. 5: 848-863.
3. Khowawisetsut, L., et al. 2023. Differential effect of extracellular vesicles derived from *Plasmodium falciparum*-infected red blood cells on monocyte polarization. Int. J. Mol. Sci. 24: 2631.

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.