SANTA CRUZ BIOTECHNOLOGY, INC.

spectrin α II (C-3): sc-48382

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. Activation of calpain results in the breakdown of spectrin α II, a neuronal cytoskeleton protein.

CHROMOSOMAL LOCATION

Genetic locus: SPTAN1 (human) mapping to 9q34.11; Spna2 (mouse) mapping to 2 B.

SOURCE

spectrin α II (C-3) is a mouse monoclonal antibody raised against amino acids 2368-2472 of spectrin α 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 α II (C-3) is available conjugated to agarose (sc-48382 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-48382 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-48382 PE), fluorescein (sc-48382 FITC), Alexa Fluor® 488 (sc-48382 AF488), Alexa Fluor® 546 (sc-48382 AF546), Alexa Fluor® 594 (sc-48382 AF594) or Alexa Fluor® 647 (sc-48382 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-48382 AF680) or Alexa Fluor® 790 (sc-48382 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

spectrin α II (C-3) is recommended for detection of spectrin α 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 α II (C-3) is also recommended for detection of spectrin α II in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for spectrin α II siRNA (h): sc-36549, spectrin α II siRNA (m): sc-36550, spectrin α II shRNA Plasmid (h): sc-36549-SH, spectrin α II shRNA Plasmid (m): sc-36550-SH, spectrin α II shRNA (h) Lentiviral Particles: sc-36549-V and spectrin α II shRNA (m) Lentiviral Particles: sc-36550-V.

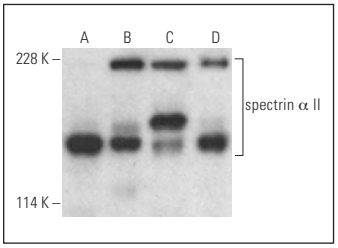
Molecular Weight of spectrin α II precursor: 240 kDa.

Molecular Weight of spectrin α II cleavage products: 150/120/110 kDa.

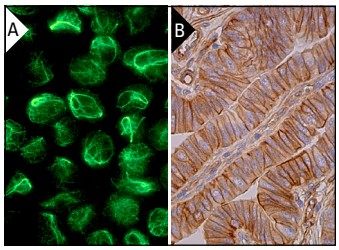
STORAGE

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

DATA



spectrin α II (C-3) HRP: sc-48382 HRP. Direct western blot analysis of spectrin α II expression in Hs68 (**A**), Jurkat (**B**), WI-38 (**C**) and SK-N-SH (**D**) whole cell lysates.



spectrin α II (C-3): sc-48382. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing cytoplasmic and membrane staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Ma, T., et al. 2009. Statin's excitoprotection is mediated by sAPP and the subsequent attenuation of calpain-induced truncation events, likely via rho-ROCK signaling. J. Neurosci. 29: 11226-11236.
2. Smuder, A.J., et al. 2018. Crosstalk between autophagy and oxidative stress regulates proteolysis in the diaphragm during mechanical ventilation. Free Radic. Biol. Med. 115: 179-190.
3. Chen, T.Y., et al. 2019. Targeting GPER1 to suppress autophagy as a male-specific therapeutic strategy for iron-induced striatal injury. Sci. Rep. 9: 6661.
4. Ramos, P.M., et al. 2020. Resistance to pH decline and slower calpain-1 autolysis are associated with higher energy availability early postmortem in Bos taurus indicus cattle. Meat Sci. 159: 107925.
5. Hu, D., et al. 2021. Small-molecule suppression of calpastatin degradation reduces neuropathology in models of Huntington's disease. Nat. Commun. 12: 5305.
6. Lin, H., et al. 2022. Sarm1 is essential for anesthesia-induced neuroinflammation and cognitive impairment in aged mice. Cell. Mol. Neurobiol. 42: 1465-1476.
7. Huang, C.W., et al. 2023. Muscleblind-like 2 knockout shifts adducin 1 isoform expression and alters dendritic spine dynamics of cortical neurons during brain development. Neuropathol. Appl. Neurobiol. 49: e12890.
8. Özdemir, A.Y., et al. 2024. Different amyloid β42 preparations induce different cell death pathways in the model of SH-SY5Y neuroblastoma cells. Cell. Mol. Biol. Lett. 29: 143.

RESEARCH USE

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