

spectrin α II (C-11): sc-46696

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 anti-parallel 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; Sptan1 (mouse) mapping to 2 B.

SOURCE

spectrin α II (C-11) is a mouse monoclonal antibody raised against amino acids 2368-2472 of spectrin α II of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

spectrin α II (C-11) is available conjugated to agarose (sc-46696 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-46696 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-46696 PE), fluorescein (sc-46696 FITC), Alexa Fluor[®] 488 (sc-46696 AF488), Alexa Fluor[®] 546 (sc-46696 AF546), Alexa Fluor[®] 594 (sc-46696 AF594) or Alexa Fluor[®] 647 (sc-46696 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-46696 AF680) or Alexa Fluor[®] 790 (sc-46696 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

spectrin α II (C-11) 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 μ g per 100-500 μ g 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).

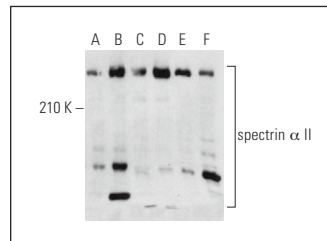
Suitable for use as control antibody for spectrin α II siRNA (h): sc-36549, spectrin α II siRNA (m): sc-36550, spectrin α II shRNA Plasmid (h): sc-36549-SH, spectrin α II shRNA Plasmid (m): sc-36550-SH, spectrin α II shRNA (h) Lentiviral Particles: sc-36549-V and spectrin α II shRNA (m) Lentiviral Particles: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

Molecular Weight of spectrin α II precursor: 240 kDa.

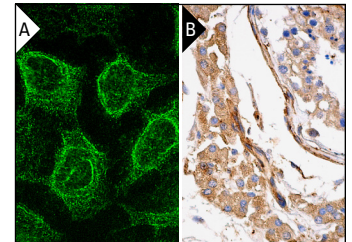
Molecular Weight of spectrin α II cleavage products: 150/120/110 kDa.

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-11): sc-46696. Western blot analysis of spectrin α II expression in SH-SY5Y (A), Jurkat (B), RAW 264.7 (C), NIH/3T3 (D), A-10 (E) and C6 (F) whole cell lysates.



spectrin α II (C-11): sc-46696. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of leydig cells and cells in seminiferous ducts (B).

SELECT PRODUCT CITATIONS

- Tomás, M., et al. 2007. Ethanol affects calmodulin and the calmodulin-binding proteins neuronal nitric oxide synthase and α II-spectrin (α -fodrin) in the nucleus of growing and differentiated rat astrocytes in primary culture. *Toxicol. In Vitro* 21: 1039-1049.
- Blanc, F., et al. 2016. Targeting host calpain proteases decreases influenza A virus infection. *Am. J. Physiol. Lung Cell. Mol. Physiol.* 310: L689-L699.
- Zhu, X., et al. 2017. The role of calpains in ventilator-induced diaphragm atrophy. *Intensive Care Med. Exp.* 5: 14.
- Dou, X., et al. 2018. L1 coupling to ankyrin and the spectrin-Actin cytoskeleton modulates ethanol inhibition of L1 adhesion and ethanol teratogenesis. *FASEB J.* 32: 1364-1374.
- Chen, Q., et al. 2019. Inhibition of the ubiquitous calpains protects complex I activity and enables improved mitophagy in the heart following ischemia-reperfusion. *Am. J. Physiol. Cell Physiol.* 317: C910-C921.
- Mohsin, A.A., et al. 2020. Endoplasmic reticulum stress-induced complex I defect: Central role of calcium overload. *Arch. Biochem. Biophys.* E-published.
- Gąssowska-Dobrowolska, M., et al. 2021. Alterations in Tau protein level and phosphorylation state in the brain of the autistic-like rats induced by prenatal exposure to valproic acid. *Int. J. Mol. Sci.* 22: 3209.
- Li, L., et al. 2022. Calpain-mediated protein targets in cardiac mitochondria following ischemia-reperfusion. *Sci. Rep.* 12: 138.

RESEARCH USE

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