

spectrin β II (42): sc-136074

BACKGROUND

Spectrin is an Actin binding protein that is a major component of the cytoskeletal superstructure of the erythrocyte plasma membrane. Spectrins function as membrane organizers and stabilizers by forming 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. Spectrin β II, which is involved in secretion, interacts with calmodulin in a calcium-dependent manner and is thus a candidate for the calcium-dependent movement of the cytoskeleton at the membrane. The human SPTBN1 gene encodes the nonerythroid form of β -spectrin.

CHROMOSOMAL LOCATION

Genetic locus: SPTBN1 (human) mapping to 2p16.2; Sptbn1 (mouse) mapping to 11 A3.3.

SOURCE

spectrin β II (42) is a mouse monoclonal antibody raised against amino acids 2101-2189 of spectrin β 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.

APPLICATIONS

spectrin β II (42) is recommended for detection of spectrin β II of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 β II siRNA (h): sc-36551, spectrin β II siRNA (m2): sc-270043, spectrin β II shRNA Plasmid (h): sc-36551-SH, spectrin β II shRNA Plasmid (m2): sc-270043-SH, spectrin β II shRNA (h) Lentiviral Particles: sc-36551-V and spectrin β II shRNA (m2) Lentiviral Particles: sc-270043-V.

Molecular Weight of spectrin β II: 240/270 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or SK-N-SH cell lysate: sc-2410.

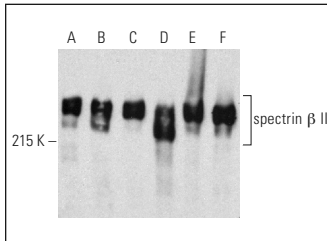
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

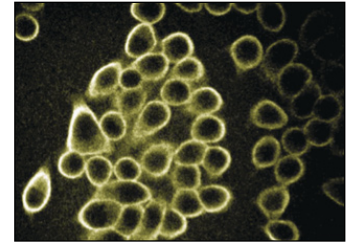
STORAGE

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

DATA



spectrin β II (42): sc-136074. Western blot analysis of spectrin β II expression in Jurkat (A), HeLa (B), SK-N-SH (C) and A2058 (D) whole cell lysates and mouse brain (E) and rat brain (F) tissue extracts.



spectrin β II (42): sc-136074. Immunofluorescence staining of HeLa cells showing cytoskeletal localization.

SELECT PRODUCT CITATIONS

1. Takagi, M., et al. 2018. Accumulation of the myosin-II-spectrin complex plays a positive role in apical extrusion of Src-transformed epithelial cells. *Genes Cells* 23: 974-981.
2. Wang, Y., et al. 2018. Critical roles of α II spectrin in brain development and epileptic encephalopathy. *J. Clin. Invest.* 128: 760-773.
3. Liu, Y., et al. 2019. Critical role of spectrin in hearing development and deafness. *Sci. Adv.* 5: eaav7803.
4. Wang, G., et al. 2019. Structural plasticity of Actin-spectrin membrane skeleton and functional role of Actin and spectrin in axon degeneration. *Elife* 8: e38730.
5. Mylvaganam, S., et al. 2020. Stabilization of endothelial receptor arrays by a polarized spectrin cytoskeleton facilitates rolling and adhesion of leukocytes. *Cell Rep.* 31: 107798.
6. Li, J., et al. 2022. The mechanotransduction channel and organic cation transporter are critical for cisplatin ototoxicity in murine hair cells. *Front. Mol. Neurosci.* 15: 835448.
7. Li, J., et al. 2022. RIPOR2-mediated autophagy dysfunction is critical for aminoglycoside-induced hearing loss. *Dev. Cell* 57: 2204-2220.e6.
8. Mylvaganam, S., et al. 2022. The spectrin cytoskeleton integrates endothelial mechanoresponses. *Nat. Cell Biol.* 24: 1226-1238.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.