

# spectrin $\beta$ I (C-18): sc-7466

## 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 nonhomologous  $\alpha$  and  $\beta$  chains, which aggregate side-to-side in an anti-parallel fashion to form dimers, tetramers and higher polymers. Spectrin  $\alpha$  I and spectrin  $\beta$  I are present in erythrocytes, whereas spectrin  $\alpha$  II (also designated fodrin  $\alpha$ ) and spectrin  $\beta$  II (also designated fodrin  $\beta$ ) 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  $\alpha$  II, a neuronal cytoskeleton protein.

## CHROMOSOMAL LOCATION

Genetic locus: SPTB (human) mapping to 14q23.3; Spn1 (mouse) mapping to 12 C3.

## SOURCE

spectrin  $\beta$  I (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of spectrin  $\beta$  I of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7466 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

spectrin  $\beta$  I (C-18) is recommended for detection of spectrin  $\beta$  I of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (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  $\beta$  I siRNA (h): sc-36547, spectrin  $\beta$  I siRNA (m): sc-36548, spectrin  $\beta$  I shRNA Plasmid (h): sc-36547-SH, spectrin  $\beta$  I shRNA Plasmid (m): sc-36548-SH, spectrin  $\beta$  I shRNA (h) Lentiviral Particles: sc-36547-V and spectrin  $\beta$  I shRNA (m) Lentiviral Particles: sc-36548-V.

Molecular Weight (predicted) of spectrin  $\beta$  I: 246 kDa.

Molecular Weight (observed) of spectrin  $\beta$  I: 188-277 kDa.

Positive Controls: rat heart extract: sc-2393, SK-N-SH cell lysate: sc-2410 or HEL 92.1.7 cell lysate: sc-2270.

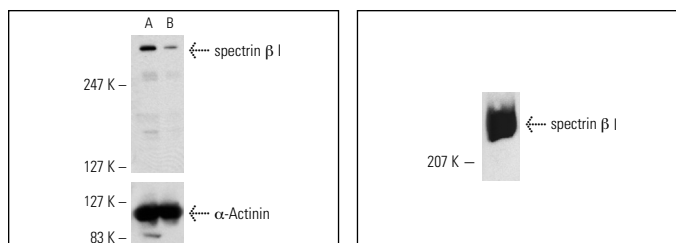
## STORAGE

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.

## DATA



spectrin  $\beta$  I siRNA (h): sc-36547. Western blot analysis of spectrin  $\beta$  I expression in non-transfected control (A) and spectrin  $\beta$  I siRNA transfected (B) HeLa cells. Blot probed with spectrin  $\beta$  I (C-18): sc-7466.  $\alpha$ -actinin (H-2): sc-17829 used as specificity and loading control.

spectrin  $\beta$  I (C-18): sc-7466. Western blot analysis of spectrin  $\beta$  I expression in rat heart extract.

## SELECT PRODUCT CITATIONS

- Sytnyk, V., et al. 2002. Neural cell adhesion molecule promotes accumulation of TGN organelles at sites of neuron-to-neuron contacts. *J. Cell Biol.* 159: 649-661.
- Jacobs-Helber, S.M., et al. 2002. Role of Jun B in erythroid differentiation. *J. Biol. Chem.* 277: 4859-4866.
- Ramos, M., et al. 2007. Monocrotaline pyrrole induces Smad nuclear accumulation and altered signaling expression in human pulmonary arterial endothelial cells. *Vascul. Pharmacol.* 46: 439-448.
- Puchkov, D., et al. 2011. NCAM/spectrin complex disassembly results in PSD perforation and postsynaptic endocytic zone formation. *Cereb. Cortex* 21: 2217-2232.

## PROTOCOLS

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Try **spectrin  $\beta$  I (B-1): sc-374309** or **spectrin  $\beta$  I (VD4): sc-53901**, our highly recommended monoclonal alternatives to spectrin  $\beta$  I (C-18).