

# spectrin $\beta$ I (4C3): sc-58851

## 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  $\alpha$  and  $\beta$  chains, which aggregate side-to-side in an antiparallel 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.

## REFERENCES

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4. Saxton, M.J. 1989. The spectrin network as a barrier to lateral diffusion in erythrocytes. A percolation analysis. *Biophys. J.* 55: 21-28.
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## CHROMOSOMAL LOCATION

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

## SOURCE

spectrin  $\beta$  I (4C3) is a mouse monoclonal antibody raised against purified erythrocyte spectrin  $\beta$  I of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

spectrin  $\beta$  I (4C3) 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with spectrin  $\alpha$  or either of the fodrin subunits.

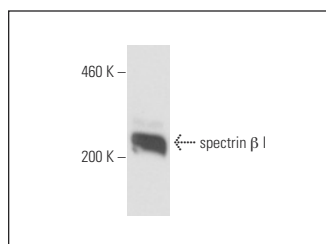
Suitable for use as control antibody for spectrin  $\beta$  I siRNA (h): sc-36547, spectrin  $\beta$  I siRNA (m): sc-36548, spectrin  $\beta$  I shRNA Plasmid (h): sc-36547-SH, spectrin  $\beta$  I shRNA Plasmid (m): sc-36548-SH, spectrin  $\beta$  I shRNA (h) Lentiviral Particles: sc-36547-V and spectrin  $\beta$  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: HEL 92.1.7 cell lysate: sc-2270, SK-N-SH cell lysate: sc-2410 or rat heart extract: sc-2393.

## DATA



spectrin  $\beta$  I (4C3): sc-58851. Western blot analysis of spectrin  $\beta$  I expression in HEL 92.1.7 whole cell lysate.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.