

spectrin (RG/26): sc-53444

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 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.

REFERENCES

1. Speicher, D.W. 1986. The present status of erythrocyte spectrin structure: the 106-residue repetitive structure is a basic feature of an entire class of proteins. *J. Cell. Biochem.* 30: 245-258.
2. Gardner, K. and Bennett, V. 1987. Modulation of spectrin-Actin assembly by erythrocyte adducin. *Nature* 328: 359-362.
3. Leto, T.L., et al. 1988. Comparison of nonerythroid α -spectrin genes reveals strict homology among diverse species. *Mol. Cell. Biol.* 8: 1-9.

SOURCE

Spectrin (RG/26) is a mouse monoclonal antibody raised against red cell membranes of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

spectrin (RG/26) is available conjugated to agarose (sc-53444 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53444 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53444 PE), fluorescein (sc-53444 FITC), Alexa Fluor® 488 (sc-53444 AF488), Alexa Fluor® 546 (sc-53444 AF546), Alexa Fluor® 594 (sc-53444 AF594) or Alexa Fluor® 647 (sc-53444 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53444 AF680) or Alexa Fluor® 790 (sc-53444 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

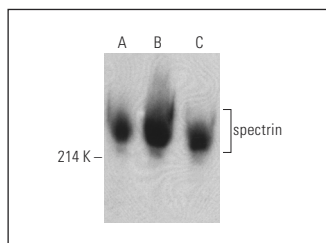
spectrin (RG/26) is recommended for detection of spectrin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Positive Controls: HEL 92.1.7 cell lysate: sc-2270, TF-1 cell lysate: sc-2412 or K-562 whole cell lysate: sc-2203.

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. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



spectrin (RG/26): sc-53444. Western blot analysis of spectrin expression in TF-1 (A), HEL 92.1.7 (B) and K-562 (C) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



spectrin (RG/26): sc-53444. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic and membrane staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Wagner, T., et al. 2014. Impact of constant storage temperatures and multiple warming cycles on the quality of stored red blood cells. *Vox Sang.* 106: 45-54.
2. Manfredola, F., et al. 2021. Ankrd31 in sperm and epididymal integrity. *Front. Cell Dev. Biol.* 9: 741975.
3. Ricci, G., et al. 2022. KISS1R and ANKRD31 cooperate to enhance Leydig cell gene expression via the cytoskeletal-nucleoskeletal pathway. *Front. Cell Dev. Biol.* 10: 877270.
4. Martínez-Vieyra, I., et al. 2024. Oxidative stress and cytoskeletal reorganization in hypertensive erythrocytes. *Antioxidants* 14: 5.

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.

PROTOCOLS

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