

Ankyrin-1 (D-3): sc-374105

BACKGROUND

Members of the Ankyrin family of proteins mediate the attachment of integral membrane proteins to the cytoskeleton. ANK1, ANK2 and ANK3 genes encode for the proteins in this family, Ankyrin-1 (also designated Ankyrin R), Ankyrin B and Ankyrin G, respectively. The proteins are structured similarly each composed of an N-terminal domain with multiple ankyrin repeats, a highly conserved central spectrin binding domain, and C-terminal regulatory domains which are susceptible to the most variance. Ankyrin-1 is a membrane protein that links the cytoskeleton to the plasma membrane in erythrocytes, cardiac and skeletal muscle, and brain. It is expressed as many isoforms, including a full length protein and several shorter isoforms. Ankyrin-1 has also been found to be defective in patients with hereditary spherocytosis (HS), a common hemolytic anemia.

REFERENCES

1. Eber, S.W., et al. 1996. Ankyrin-1 mutations are a major cause of dominant and recessive hereditary spherocytosis. *Nat. Genet.* 13: 214-218.
2. Gallagher, P.G., et al. 1997. Structure and organization of the human Ankyrin-1 gene. Basis for complexity of pre-mRNA processing. *J. Biol. Chem.* 272: 19220-19228.
3. Zhou, D., et al. 1997. Small, membrane-bound, alternatively spliced forms of Ankyrin-1 associated with the sarcoplasmic reticulum of mammalian skeletal muscle. *J. Cell Biol.* 136: 621-631.
4. Zhang, X. and Bennett, V. 1998. Restriction of 480/270 kDa Ankyrin G to axon proximal segments requires multiple Ankyrin G-specific domains. *J. Cell Biol.* 142: 1571-1581.
5. Gallagher, P.G. and Forget, B.G. 1998. An alternate promoter directs expression of a truncated, muscle-specific isoform of the human Ankyrin-1 gene. *J. Biol. Chem.* 273: 1339-1348.
6. Bennett, V. and Lambert, S. 1999. Physiological roles of axonal Ankyrins in survival of premyelinated axons and localization of voltage-gated sodium channels. *J. Neurocytol.* 28: 303-318.
7. Bongenhielm, U., et al. 2000. Expression of sodium channel SNS/PN3 and Ankyrin (G) mRNAs in the trigeminal ganglion after inferior alveolar nerve injury in the rat. *Exp. Neurol.* 164: 384-395.

CHROMOSOMAL LOCATION

Genetic locus: ANK1 (human) mapping to 8p11.21; Ank1 (mouse) mapping to 8 A2.

SOURCE

Ankyrin-1 (D-3) is a mouse monoclonal antibody raised against amino acids 820-952 mapping within an internal region of Ankyrin-1 isoform 9 of human origin.

PRODUCT

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

APPLICATIONS

Ankyrin-1 (D-3) is recommended for detection of Ankyrin-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 Ankyrin-1 siRNA (h): sc-43615, Ankyrin-1 siRNA (m): sc-43262, Ankyrin-1 shRNA Plasmid (h): sc-43615-SH, Ankyrin-1 shRNA Plasmid (m): sc-43262-SH, Ankyrin-1 shRNA (h) Lentiviral Particles: sc-43615-V and Ankyrin-1 shRNA (m) Lentiviral Particles: sc-43262-V.

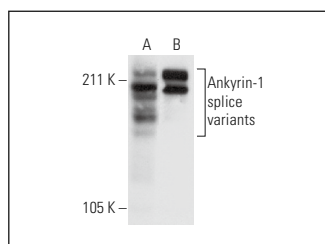
Molecular Weight of Ankyrin-1: 171-206 kDa.

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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Ankyrin-1 (D-3): sc-374105. Western blot analysis of Ankyrin-1 expression in HEL 92.1.7 (A) and K-562 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. 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.