SANTA CRUZ BIOTECHNOLOGY, INC.

Ankyrin B (G-11): sc-365757



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. Both Ankyrin B and Ankyrin G are essential for normal neuronal functions. Ankyrin B, or brain Ankyrin is predominantly expressed in the plasma membrane of neurons as well as glial cells throughout the brain. Two transcripts have been described with alternative splicing resulting in additional isoforms. The Ankyrin B protein associates with the spectrin-actin network, mediates axon fasciculation, and stabilizes axon bundles. Ankyrin B is required for coordinated assembly of Na/Ca exchanger, Na/K ATPase, and inositol trisphosphate (InsP(3)) receptor at transverse-tubule/sarcoplasmic reticulum sites in cardiomyocytes.

REFERENCES

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- Bennett, V., et al. 1999. Physiological roles of axonal Ankyrins in survival of premyelinated axons and localization of voltage-gated sodium channels. J. Neurocytol. 28: 303-318.
- 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.
- Mohler, P.J., et al. 2003. Ankyrin B mutation causes type 4 long-QT cardiac arrhythmia and sudden cardiac death. Nature 421: 634-639.
- Mohler, P.J., et al. 2004. Inositol 1,4,5-trisphosphate receptor localization and stability in neonatal cardiomyocytes requires interaction with Ankyrin B. J. Biol. Chem. 279: 12980-12987.
- 6. Mohler, P.J., et al. 2004. Isoform specificity among Ankyrins. An amphipathic α -helix in the divergent regulatory domain of Ankyrin B interacts with the molecular co-chaperone Hdj1/Hsp40. J. Biol. Chem. 279: 25798-25804.

CHROMOSOMAL LOCATION

Genetic locus: ANK2 (human) mapping to 4q25.

SOURCE

Ankyrin B (G-11) is a mouse monoclonal antibody raised against amino acids 3625-3924 mapping at the C-terminus of Ankyrin B 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.

RESEARCH USE

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

APPLICATIONS

Ankyrin B (G-11) is recommended for detection of Ankyrin B of human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Ankyrin B siRNA (h): sc-29680, Ankyrin B shRNA Plasmid (h): sc-29680-SH and Ankyrin B shRNA (h) Lentiviral Particles: sc-29680-V.

Molecular Weight of Ankyrin B isoforms: 220 kDa.

Positive Controls: Y79 cell lysate: sc-2240, SK-N-SH cell lysate: sc-2410 or SH-SY5Y cell lysate: sc-3812.

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 B (G-11): sc-365757. Western blot analysis of Ankyrin B expression in Y79 (A) and SH-SY5Y (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Teunissen, M.W.A., et al. 2023. ANK2 loss-of-function variants are associated with epilepsy, and lead to impaired axon initial segment plasticity and hyperactive network activity in hiPSC-derived neuronal networks. Hum. Mol. Genet. 32: 2373-2385.
- Pintacuda, G., et al. 2023. Protein interaction studies in human induced neurons indicate convergent biology underlying autism spectrum disorders. Cell Genom. 3: 100250.

STORAGE

Store at 4° C, **D0 NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.