

# Ankyrin B (3G7): sc-70358

## 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

- Zhang, X., et al. 1998. Restriction of 480/270 kDa Ankyrin G to axon proximal segments requires multiple Ankyrin G-specific domains. *J. Cell Biol.* 142: 1571-1581.
- 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.
- Bonghenhielm, 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. A cardiac arrhythmia syndrome caused by loss of Ankyrin B function. *Proc. Natl. Acad. Sci. USA* 101: 9137-9142.
- 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.

## CHROMOSOMAL LOCATION

Genetic locus: ANK2 (human) mapping to 4q25; Ank2 (mouse) mapping to 3 G2.

## SOURCE

Ankyrin B (3G7) is a mouse monoclonal antibody raised against the spectrin binding domain of Ankyrin B of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> lambda 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 (3G7) is recommended for detection of Ankyrin B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Ankyrin B siRNA (h): sc-29680, Ankyrin B siRNA (m): sc-29681, Ankyrin B shRNA Plasmid (h): sc-29680-SH, Ankyrin B shRNA Plasmid (m): sc-29681-SH, Ankyrin B shRNA (h) Lentiviral Particles: sc-29680-V and Ankyrin B shRNA (m) Lentiviral Particles: sc-29681-V.

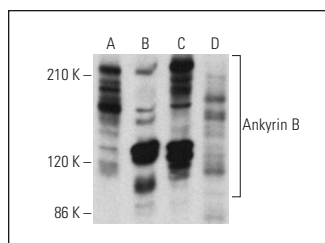
Molecular Weight of Ankyrin B isoforms: 220 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Neuro-2A whole cell lysate: sc-364185 or C6 whole cell lysate: sc-364373.

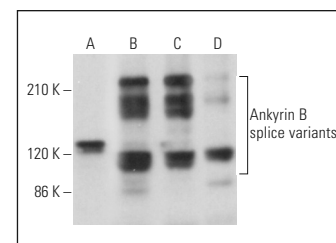
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



Ankyrin B (3G7): sc-70358. Western blot analysis of Ankyrin B expression in SH-SY5Y (A), NIH/3T3 (B), Neuro-2A (C) and C6 (D) whole cell lysates.



Ankyrin B (3G7): sc-70358. Western blot analysis of Ankyrin B expression in EOC 20 whole cell lysate (A) and rat hippocampus (B), mouse brain (C) and human cerebellum (D) tissue extracts.

## STORAGE

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

## PROTOCOLS

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