SANTA CRUZ BIOTECHNOLOGY, INC.

# Ankyrin-1 (8C3): sc-12733

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Ankyrin-1 (8C3) is a mouse monoclonal antibody raised against Ankyrin-1 from erythrocytes of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ankyrin-1 (8C3) is available conjugated to agarose (sc-12733 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-12733 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-12733 PE), fluorescein (sc-12733 FITC), Alexa Fluor® 488 (sc-12733 AF488), Alexa Fluor® 546 (sc-12733 AF546), Alexa Fluor® 594 (sc-12733 AF594) or Alexa Fluor® 647 (sc-12733 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-12733 AF680) or Alexa Fluor® 790 (sc-12733 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

Ankyrin-1 (8C3) is recommended for detection of Ankyrin-1 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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.

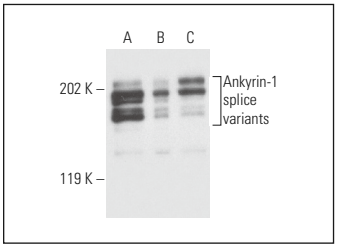
Molecular Weight of Ankyrin-1: 171-206 kDa.

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

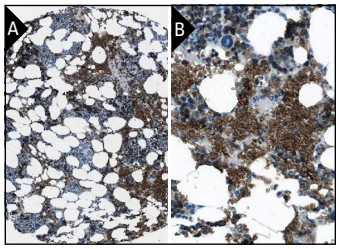
## STORAGE

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

## DATA




Ankyrin-1 (8C3): sc-12733. Western blot analysis of Ankyrin-1 expression in HEL 92.1.7 (**A**), TF-1 (**B**) and K-562 (**C**) whole cell lysates.




Ankyrin-1 (8C3): sc-12733. Immunoperoxidase staining of formalin fixed, paraffin-embedded human bone marrow tissue showing cytoplasmic and membrane staining of bone marrow poietic cells at low (**A**) and high (**B**) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

## SELECT PRODUCT CITATIONS


1. Ciana, A., et al. 2011. On the association of lipid rafts to the spectrin skeleton in human erythrocytes. Biochim. Biophys. Acta 1808: 183-190.
2. Hughes, M.R., et al. 2011. A novel ENU-generated truncation mutation lacking the spectrin-binding and C-terminal regulatory domains of ANK1 models severe hemolytic hereditary spherocytosis. Exp. Hematol. 39: 305-20, 320.e1-2.
3. Christensen, I.B., et al. 2013. Polarization of membrane associated proteins in the choroid plexus epithelium from normal and slc4a10 knockout mice. Front. Physiol. 4: 344.
4. Tu, H., et al. 2015. Low red blood cell vitamin c concentrations induce red blood cell fragility: a link to diabetes via glucose, glucose transporters, and dehydroascorbic acid. EBioMedicine 2: 1735-1750.
5. Xu, L., et al. 2022. A novel splicing mutation of ANK1 is associated with phenotypic heterogeneity of hereditary spherocytosis in a Chinese family. Biochim. Biophys. Acta Mol. Basis Dis. 1869: 166595.
6. Pan, Y., et al. 2022. Fatigue of red blood cells under periodic squeezes in ECMO. Proc. Natl. Acad. Sci. USA 119: e2210819119.


## 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.