SANTA CRUZ BIOTECHNOLOGY, INC.

NKCC1 (F-4): sc-514858

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Na-K-Cl cotransporters (NKCC) are channel proteins that aid in the transcellular movement of chloride across both secretory and absorptive epithelia. NKCC1 is expressed in muscle cells, neurons, and red blood cells. In the basolateral membrane of secretory epithelia, NKCC1 mediates active chloride secretion. The gene encoding human NKCC1 maps to chromosome 5q23.3. In mice, disruption of the NKCC1 gene leads to deafness and impaired balance. NKCC2 is specifically expressed in the kidney where it mediates active reabsorption of sodium chloride in the thick ascending limb of the loop of Henle. NKCC2 is sensitive to the clinically important diuretics furosemide and bumetanide. The gene encoding human NKCC2 maps to chromosome 15q21.1 and mutations in this gene lead to Bartter's syndrome, an inherited hypokalaemic alkalosis. NCCT is a thiazide-sensitive Na-Cl cotransporter that is primarily expressed in the distal convoluted tubule of the kidney where it accounts for a significant fraction of net renal sodium reabsorption. The gene for human NCCT map to chromosome 16q13. Mutations in the gene encoding NCCT cause Gitelman's syndrome, a subset of Bartter's syndrome.

REFERENCES

1. Xu, J.C., et al. 1994. Molecular cloning and functional expression of the bumetanide-sensitive Na-K-Cl cotransporter. Proc. Natl. Acad. Sci. USA 91: 2201-2205.
2. Payne, J.A., et al. 1995. Primary structure, functional expression, and chromosomal localization of the bumetanide-sensitive Na-K-Cl cotransporter in human colon. J. Biol. Chem. 270: 17977-17985.
3. Quaggin, S.E., et al. 1995. Localization of the renal Na-K-Cl cotransporter gene (Slc12a1) on mouse chromosome 2. Mamm. Genome 6: 557-558.

CHROMOSOMAL LOCATION

Genetic locus: SLC12A2 (human) mapping to 5q23.3.

SOURCE

NKCC1 (F-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 78-99 near the N-terminus of NKCC1 of human origin.

PRODUCT

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

NKCC1 (F-4) is available conjugated to agarose (sc-514858 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514858 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514858 PE), fluorescein (sc-514858 FITC), Alexa Fluor® 488 (sc-514858 AF488), Alexa Fluor® 546 (sc-514858 AF546), Alexa Fluor® 594 (sc-514858 AF594) or Alexa Fluor® 647 (sc-514858 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514858 AF680) or Alexa Fluor® 790 (sc-514858 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-514858 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

NKCC1 (F-4) is recommended for detection of NKCC1 of 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), 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).

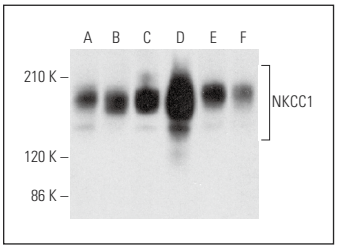
Suitable for use as control antibody for NKCC1 siRNA (h): sc-36071, NKCC1 shRNA Plasmid (h): sc-36071-SH and NKCC1 shRNA (h) Lentiviral Particles: sc-36071-V.

Molecular Weight of deglycosylated NKCC1: 135 kDa.

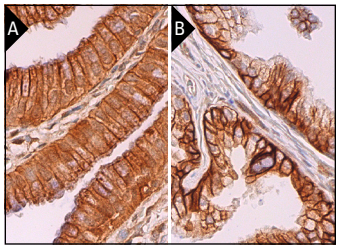
Molecular Weight of glycosylated NKCC1: 170 kDa.

Positive Controls: T98G cell lysate: sc-2294, RT-4 whole cell lysate: sc-364257 or T84 whole cell lysate: sc-364797.

DATA



NKCC1 (F-4): sc-514858. Western blot analysis of NKCC1 expression in T98G (**A**), HeLa (**B**), RT-4 (**C**), T84 (**D**), Jurkat (**E**) and K-562 (**F**) whole cell lysates.



NKCC1 (F-4): sc-514858. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue (**A**) and human prostate tissue (**B**) showing membrane and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Murase, M., et al. 2021. Novel histopathological classification of meningiomas based on dural invasion. J. Clin. Pathol. 74: 238-243.
2. Wang, H., et al. 2021. Colorectal cancer stem cell states uncovered by simultaneous single-cell analysis of transcriptome and telomeres. Adv. Sci. 8: 2004320.

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.