

NKCC1 (N-16): sc-21545

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 15q15-q21 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.

CHROMOSOMAL LOCATION

Genetic locus: SLC12A2 (human) mapping to 5q23.3; Slc12a2 (mouse) mapping to 18 D3.

SOURCE

NKCC1 (N-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of NKCC1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21545 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NKCC1 (N-16) is recommended for detection of NKCC1 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).

NKCC1 (N-16) is also recommended for detection of NKCC1 in additional species, including bovine and porcine.

Suitable for use as control antibody for NKCC1 siRNA (h): sc-36071, NKCC1 siRNA (m): sc-36072, NKCC1 shRNA Plasmid (h): sc-36071-SH, NKCC1 shRNA Plasmid (m): sc-36072-SH, NKCC1 shRNA (h) Lentiviral Particles: sc-36071-V and NKCC1 shRNA (m) Lentiviral Particles: sc-36072-V.

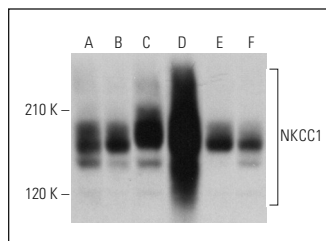
Molecular Weight of NKCC1: 135/170 kDa.

Positive Controls: T84 whole cell lysate: sc-364797, T98G cell lysate: sc-2294 or HeLa whole cell lysate: sc-2200.

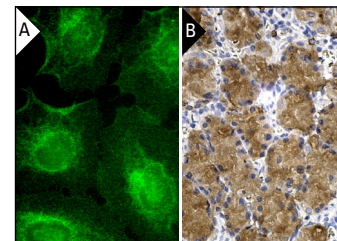
STORAGE

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

DATA



NKCC1 (N-16): sc-21545. 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 (N-16): sc-21545. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Liedtke, C.M., et al. 2005. Role for protein phosphatase 2A in the regulation of Calu-3 epithelial Na⁺-K⁺-2Cl⁻, type 1 co-transport function. *J. Biol. Chem.* 280: 25491-25498.
- Bussolati, B., et al. 2005. Isolation of renal progenitor cells from adult human kidney. *Am. J. Pathol.* 166: 545-555.
- Kelly, T., et al. 2009. Ammonium-evoked alterations in intracellular sodium and pH reduce glial glutamate transport activity. *Glia* 57: 921-934.
- Thomassen, M., et al. 2010. Effect of 2-wk intensified training and inactivity on muscle Na⁺-K⁺ pump expression, phospholemman (FXD1) phosphorylation, and performance in soccer players. *J. Appl. Physiol.* 108: 898-905.
- Xiong, H., et al. 2011. Simultaneously reduced NKCC1 and Na,K-ATPase expression in murine cochlear lateral wall contribute to conservation of endocochlear potential following a sensorineural hearing loss. *Neurosci. Lett.* 488: 204-209.
- Iaia, F.M., et al. 2011. Relationship between performance at different exercise intensities and skeletal muscle characteristics. *J. Appl. Physiol.* 110: 1555-1563.
- Huang, L.Q., et al. 2014. Hypertonic saline alleviates cerebral edema by inhibiting microglia-derived TNF-α and IL-1β-induced Na-K-Cl cotransporter up-regulation. *J. Neuroinflammation* 11: 102.

RESEARCH USE

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



Try **NKCC1 (F-4): sc-514858** or **NKCC1 (A-6): sc-514774**, our highly recommended monoclonal alternatives to NKCC1 (N-16).