

# NKCC1 (C-14): sc-21547

## BACKGROUND

Na-K-Cl cotransporters (NKCC) are channel proteins that aid in the trans-cellular movement of chloride across both secretory and absorptive epithelia. NKCC1 is expressed in muscle cells, neurons and red blood cells. In the baso-lateral 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

NKCC1 (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region 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-21547 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

NKCC1 (C-14) 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), 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 (C-14) is also recommended for detection of NKCC1 in additional species, including canine, 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.

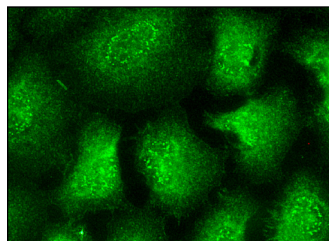
Molecular Weight of NKCC1: 135/170 kDa.

Positive Controls: T84 whole cell lysate: sc-364797.

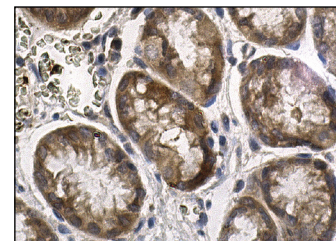
## STORAGE

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

## DATA



NKCC1 (C-14): sc-21547. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.



NKCC1 (C-14) sc-21547. Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing cytoplasmic staining of glandular cells.

## SELECT PRODUCT CITATIONS

- Wang, X., et al. 2007. Effects of inhibition of the Na<sup>+</sup>/K<sup>+</sup>/2Cl<sup>-</sup> cotransporter on myogenic and Angiotensin II responses of the rat afferent arteriole. *Am. J. Physiol. Renal Physiol.* 292: F999-F1006.
- Gao, J., et al. 2007. Orphan glutamate receptor δ1 subunit required for high-frequency hearing. *Mol. Cell. Biol.* 27: 4500-4512.
- Li, X., et al. 2008. Long-term expressional changes of Na<sup>+</sup>-K<sup>+</sup>-Cl<sup>-</sup> cotransporter 1 (NKCC1) and K<sup>+</sup>-Cl<sup>-</sup> co-transporter 2 (KCC2) in CA1 region of hippocampus following lithium-pilocarpine induced status epilepticus (PISE). *Brain Res.* 1221: 141-146.
- Funk, K., et al. 2008. Modulation of chloride homeostasis by inflammatory mediators in dorsal root ganglion neurons. *Mol. Pain* 4: 32.
- Wu, J., et al. 2008. GABA<sub>A</sub> receptor-mediated excitation in dissociated neurons from human hypothalamic hamartomas. *Exp. Neurol.* 213: 397-404.
- Hengl, T., et al. 2010. Molecular components of signal amplification in olfactory sensory cilia. *Proc. Natl. Acad. Sci. USA* 107: 6052-6057.
- Zhu, J.X., et al. 2011. Cellular localization of NKCC2 and its possible role in the Cl<sup>-</sup> absorption in the rat and human distal colonic epithelia. *Transl. Res.* 158: 146-154.

## RESEARCH USE

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


 MONOS  
 Satisfaction  
 Guaranteed

Try **NKCC1 (F-4): sc-514858** or **NKCC1 (A-6): sc-514774**, our highly recommended monoclonal alternatives to NKCC1 (C-14).