SANTA CRUZ BIOTECHNOLOGY, INC.

NCCT (N-19): sc-21552

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The Power to Question

BACKGROUND

NCCT (Na-Cl cotransporter), also known as NCC, TSC (thiazide-sensitive sodium-chloride cotransporter) or SLC12A3 (solute carrier family 12 (sodium/chloride transporters), member 3), is a 1,021 amino acid cell membrane protein that is predominately expressed in kidney. Belonging to the SLC12A transporter family, NCCT plays an important role in renal sodium reabsorption, functioning as a renal thiazide-sensitive sodium-chloride cotransporter. Mutations to the NCCT gene are the cause of Gitelman syndrome, an autosomal recessive disorder characterized by hypokalemic alkalosis combined with hypomagnesemia, low urinary calcium, and increased renin activity associated with normal blood pressure.

REFERENCES

1. Mastroianni, N., et al. 1996. Novel molecular variants of the Na-Cl cotransporter gene are responsible for Gitelman syndrome. Am. J. Hum. Genet. 59: 1019-1026.
2. Mastroianni, N., et al. 1996. Molecular cloning, expression pattern, and chromosomal localization of the human Na-Cl thiazide-sensitive cotransporter (SLC12A3). Genomics 35: 486-493.
3. Takeuchi, K., et al. 1996. Association of a mutation in thiazide-sensitive Na-Cl cotransporter with familial Gitelman's syndrome. J. Clin. Endocrinol. Metab. 81: 4496-4499.
4. Simon, D.B., et al. 1996. Gitelman's variant of Bartter's syndrome, inherited hypokalaemic alkalosis, is caused by mutations in the thiazide-sensitive Na-Cl cotransporter. Nat. Genet. 12: 24-30.
5. Lemmink, H.H., et al. 1998. Novel mutations in the thiazide-sensitive NaCl cotransporter gene in patients with Gitelman syndrome with predominant localization to the C-terminal domain. Kidney Int. 54: 720-730.
6. Melander, O., et al. 2000. Genetic variants of thiazide-sensitive NaCl- cotransporter in Gitelman's syndrome and primary hypertension. Hypertension 36: 389-394.
7. Monkawa, T., et al. 2000. Novel mutations in thiazide-sensitive Na-Cl cotransporter gene of patients with Gitelman's syndrome. J. Am. Soc. Nephrol. 11: 65-70.
8. Cruz-Rangel, S., et al. 2011. Similar effects of all WNK3 variants on SLC12 cotransporters. Am. J. Physiol., Cell Physiol. 301: C601-C608.
9. Louis-Dit-Picard, H., et al. 2012. KLHL3 mutations cause familial hyperkalemic hypertension by impairing ion transport in the distal nephron. Nat. Genet. 44: 456-460.

CHROMOSOMAL LOCATION

Genetic locus: SLC12A3 (human) mapping to 16q13; Slc12a3 (mouse) mapping to 8 C5.

SOURCE

NCCT (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of NCCT 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-21552 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NCCT (N-19) is recommended for detection of NCCT of human and, to a lesser extent, mouse and rat 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NCCT siRNA (h): sc-42515, NCCT siRNA (m): sc-42516, NCCT shRNA Plasmid (h): sc-42515-SH, NCCT shRNA Plasmid (m): sc-42516-SH, NCCT shRNA (h) Lentiviral Particles: sc-42515-V and NCCT shRNA (m) Lentiviral Particles: sc-42516-V.

Molecular Weight of NCCT: 114 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Angelotti, M.L., et al. 2012. Characterization of renal progenitors committed toward tubular lineage and their regenerative potential in renal tubular injury. Stem Cells 30: 1714-1725.

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 or our catalog for detailed protocols and support products.