ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Thiazide-Sensitive Na-Cl Transporter (TSC or NCC) Antibodies

Cat. # TSC11-P	Rat TSC control/blocking Peptide #1	**SIZE**: 100 ug
Cat. # TSC11-S	Rabbit Anti-rat TSC antiserum #1	**SIZE**: 100 ul
Cat. # TSC11-A	Rabbit Anti-rat TSC IgG#1 (affinity pure)	**SIZE**: 100 ug

Chloride is a critical component of all living cells. It is also the single most dominant diffusible anion inside of most cells - the others are mostly impermeable organic anions. The cation chloride cotransporters (CCC) protein family is involved in the electroneutral movement of ions across the cell membrane. It includes the thiazide-sensitive Na+-Cl-cotransporters (**NCC or TSC**), the loop diuretics-sensitive Na+-K+-Cl^- (NKCC) cotransporters (**NKCC1/CCC1/BSC2 and NKCC2/CCC2/BSC1**), and the K+-Cl^--cotransporters (KCC1-4). These co-transporters share a common predicted membrane topology, with 12 TM domains (~500 aa), and long hydrophilic, intracellular N-and C-termini containing regulatory phosphorylation sites. NKCC transport Na, K, and Cl ions into and out of a wide variety of epithelial and non-epithelial cells. The transport process is characterized by electroneutrality (almost always with stoichiometry of 1Na:1K:2Cl) and inhibition by the loop diuretic bumetanide, benzametanide, and furosemide.

In the distal convoluted tubule (DCT) of the kidney, the primary apical entry pathway for Na is via the thiazide-sensitive Na-Cl transporter (**TSC** or **NCC**; human 1021 aa, rat/mouse 1002 aa; ~60 % identity with NKCC). TSC is specifically detected at the apical cell membrane of DCT.

Function: Electrically silent transporter system. Mediates sodium and chloride reabsorption.
Subcellular Location: Membrane; Multi-pass membrane protein.
Similarity: Belongs to the SLC12A transporter family.
Protein name Solute carrier family 12 member 3
Synonyms Thiazide-sensitive sodium-chloride cotransporter
Na-Cl symporter
Gene name Name: Slc12a3; Synonyms: Tsc

Source of Antigen and Antibodies

Antigen	18-aa peptide of Rat TSC; (protein accession #P55018 , refs 1) **Designated (TSC11-P or control peptide /blocking peptide**) conjugated to KLH; Epitope location ~ N-terminus, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#TSC11-S) and IgG, purified over antigen-agarose (Cat # TSC11-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied in Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage
Short-term: unopened, undiluted liquid vials at 20°C and powder at 4°C or -20°C..
Long-term: at –20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20°C or below.
Shipping: 4°C for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure antibody using ECL technique). Full length human TSC is ~150 kDa (1).

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:10-50K for neat serum and 0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: We recommend the use of affinity purified antibody at 2-20 ug/ml in paraformaldehyde fixed sections of tissues (1).

Specificity & Cross-reactivity

The 18 AA rat TSC11-P control peptide is 88% conserved in mouse and rabbit, and 83% in human TSC. No significant sequence homology is detected with other CCC. Antibody cross-reactivity in various species has not been studied. The TSC11-P control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity

General References:

(1). Gamba G et al (1994) J Biol. Chem. 269, 17713-17722; Simon DB et al (1996) Nature Genet. 12, 24-30; Mount DB et al (1995) J Am. Soc. Nephrol. 6, 347; Igarashi P et al (1995) Am. J. Physiol. 269, F405-418; Haas M et al (1987) Am. J. Physiol. 253, C243; Mount DB et al (1998) J. Exptl. Biol. 201, 2091 (review).

*This product is for In vitro research use only.

Related material available from ADI

Antibodies CLC1-7 and CLC-K1; KCC1-4; AQP-9 and RUT; NHE1-5; OCT and OAT, AE1-3, and NCX, NaHCO3 (NBC1-3) and NaPi transporters

Western blot Recycling Kit- Reuse blots in Just 5-10 min. (use the same strip for various antibodies)

TSC11-S-A-P 70927J

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