

Product Specification Sheet

Na⁺-HCO₃⁻ cotransporters (NBC2) Antibodies

Cat. NBC21-S	Rabbit Anti-Human NBC2 antiserum # 1	SIZE: 100 ul
Cat. NBC21-A	Rabbit Anti-Human NBC2 IgG # 1 (aff pure)	SIZE: 100 ug
Cat. NBC21-P	Human NBC2 Control/blocking peptide # 1	SIZE: 100 ug

Bicarbonate, along with CO₂, is the major pH buffer of biological fluids. A great majority of HCO₃⁻ reabsorption occurs via trans-cellular coupling of the luminal Na⁺-H⁺-exchanger 3 and Na⁺-H⁺-ATPase with the basolateral **Na⁺-HCO₃⁻ cotransporters (NBC)**. Several related proteins constitute the emerging NBC family (**NBC1-3**) of membrane cotransporters that are found in a variety of epithelial and non-epithelial tissues, and may be tissue specific. Physiologically, NBC is electrogenic, Na⁺ and HCO₃⁻-dependent, Cl⁻ independent, and inhibited by stilbenes (DIDS and SITS). The NBC family of proteins are 30-35% related to anion exchangers (**AE2 and AE3; SLC4A1-SLC4A3**) and display the same protein topology: (a) At least 10 TM domains with both the N and C-termini predicted to be intracellular, (b) presence of a large, glycosylated, extracellular loop between TM5 and TM6; and (c) the lysine residues are conserved at predicted DIDS-reactive sites.

NBC2 (PSLC4A6; human 1018 aa), initially isolated from retina, is only 53% identical to NBC1. It is widely expressed in retinal, testis, spleen, colon, small intestine, ovary, thymus, prostate, skeletal muscle, heart, kidney, stomach, and bone marrow. It appears to be absent in pancreas and liver.

Source of Antigen and Antibodies

Antigen	A 20-aa peptide of human NBC2 (protein accession #, refs 1) ; Designated (NBC21-P or control peptide) conjugated to KLH; Epitope location ~ C-terminal, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal antiserum # NBC21-S and IgG, purified over antigen-agarose (Cat # NBC21-A) purified over antigen-agarose column
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control IgG	Cat # 20009-1, Rabbit (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied 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 -200C and powder at 4oC or -20oC..

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Western Blotting 1-10 ug/ml for affinity pure using Chemiluminescence technique.

ELISA (1:10K-1:100K; using 50-100 ng of control peptide/well).

Histochemistry & Immunofluorescence: Not tested. We recommend the use of affinity purified antibody at 2-20 ug/ml in formaldehyde fixed tissue.

Specificity & Cross-reactivity

Human NBC21-P sequence is 100% conserved in rat NBC2. No significant sequence homology of NBC21-P was found with NBC1 or NBC3. Antibody crossreactivity in various species is not established. 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 (see detailed protocol at the web site).

General References: Ishibashi K et al (1998) BBRC 246, 535-538; Solemani M & Burnham CE et al (2000) Kidney Intl. 57, 371-384 (review); Romero MF & Boron WF et al (1999) Ann. Rev. Physiol. 61, 699-723 (review)

*This product is for in vitro research use only.

Related material available from ADI

Antibodies to NBC1-3; NHE1-5, AE1-3; NCX, NKCC, NCC, OAT, OCT, AE13, NBCs, CLC1-7;

Western Blot recycling kit (Use the same blot to probe with multiple antibodies NBC1-3)

ReadyBlot Kidney Explorer (study distribution of proteins in pre-made protein blots from 9 regions of rat/kidney)

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