ALPHA DIAGNOSTIC INTERNATIONAL

Life Technologies™ Your Molecular & Cell Technology Partner

Product Specification Sheet

Na+-HCO3- cotransporters (NBC3) Antibodies

Cat. NBC32-S	Rabbit Anti-Human NBC3 antiserum # 2	**SIZE**: 100 ul
Cat. NBC32-A	Rabbit Anti-Human NBC3 IGG # 2 (aff pure)	**SIZE**: 100 ug
Cat. NBC32-P	Human NBC3 Control/blocking peptide # 2	**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.

NBC3 (SLC4A?; mouse 1089 aa, human 1044 aa) has 3 three transcripts, which are expressed in a tissue specific manner (9 kb in brain, placenta, lung, liver, muscle, kidney, pancreas, stomach, thyroid, and adrenal etc). NBC3 has two variants. NBC3 is 56% identical with NBC1 and 76% with NBC2.

Source of Antigen and Antibodies

Antigen	A 16-aa peptide of **human NBC3** (protein accession #, refs 1) ; **Designated (NBC32-P or control peptide)** conjugated to KLH; **epitope location** ~ N-terminal, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal antiserum # **NBC32**-S and IgG, purified over antigen-agarose (Cat # **NBC32**-A)
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.

Short-term: unopened, undiluted liquid vials at -20OC 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 NBC32-P sequence is 100% conserved in mouse NBC3. No significant sequence homology of NBC32-P was found with NBC1 or NBC2. 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: Pushkin A et al (1999) J. Biol. Chem. 274, 16569-16575; Choi I et al (1999) gene Accession # AF070475; Amlal H et al (1999) Am. J. Physiol. 276, F903-F913; 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)

Citations of for Glut-2 (see updated list at the web site)

Kristensen CJ 2004 Acta Physiologica Scandinavica 182 (1
van Wijk E 2006 Hum. Mol. Genet., Mar 2006; 15: 751 - 765

*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

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)

NBC32-S-A-P 71209A

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