

Product Specification Sheet

Na⁺/H⁺ Exchanger 5 (NHE5) Antibodies

Cat. NHE52-S	Chicken Anti-Human NHE5 (Antiserum # 2)	SIZE: 100 ul
Cat. NHE52-A	Chicken Anti-Human NHE5 (affinity pure) Ig G # 2	SIZE: 100 ug
Cat. NHE52-P	Human NHE5 control/blocking peptide	SIZE: 100 ug

Na⁺/H⁺ exchangers (**NHE**) of mammalian cells are plasma membrane intrinsic proteins mediating exchange of Na⁺ and H⁺ ions in various tissues. The NHE catalyzes the electroneutral transport of extracellular Na⁺ for intracellular H⁺. They play a major role in regulation of intracellular pH (pHi) in addition to trans-cellular absorption of Na⁺, cell volume regulation and possibly in cell proliferation. These primary functions of the Na⁺/H⁺ exchanger have been related to many pathophysiological states, include hypertension, organ growth and hypertrophy, regression of cancer and renal intestinal disorders. Five NHE isoforms (NHE1-5) have been cloned so far. They are all similar in their primary structure and predicted to have 10-12 transmembrane domains. The C-terminal domain of NHEs are predicted to be intracellular.

NHE5 (human 896 aa, chromosome 16q22.1; rat 898 aa) is expressed in human brain, testis, spleen and skeletal muscle. Its involved in pH regulation to eliminate acids generated by active metabolism. It's a major proton extruding system driven by the inward sodium ion chemical gradient (1).

SUBCELLULAR LOCATION: Cytoplasm (By similarity).

SIMILARITY: Contains 1 glutamine amidotransferase type-1 domain

Protein name Phosphoribosylformylglycinamide synthase 1

Synonyms EC 6.3.5.3

Phosphoribosylformylglycinamide synthase I FGAM synthase I

Gene name Name: purQ OrderedLocusNames: TM_1245

Source of Antigen and Antibodies

Antigen	13aa peptide of Rat NHE5/ Slc9a5; (protein accession #Q9X0X2 , refs 1) Designated (NHE52-P or control peptide) , conjugated to KLH; Epitope location ~N-terminus, Cytoplasmic
Ab Host/type	Chicken, polyclonal Unpurified antiserum (cat #NHE52-S) Aff pure IgG (cat #NHE52-A) purified over the antigen column
2-ab	Cat # 60320, goat anti-chicken IgG-HRP (AP, biotin, FITC conjugates also available
-ve control	# 20010-1, Chicken (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 using Chemiluminescence technique).

ELISA (1:100K; using 50-100 ng 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 NHE52-P sequence is 100% conserved in mouse, rat, and pig NHE5. No significant sequence homology exist with other NHE isoforms (NHE1-4). Actual crossreactivity of antibodies 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: www.4adi.com/data/abblock.html).

General References:

Attaphitya S et al (1999) J Biol. Chem. 274, 4383-4388; Baird NR et al (1999) J Biol. Chem. 274, 4377-4382; Klanke CA et al (1995) Genomics 25, 615-622; Chris Yun CH et al (1995) Am J Physiol. 269, G1-G11 (Review); Josette N and Pouyssegur J (1995) Am J Physiol. 268, C283-C296 (review).

Citations of ADI's antibodies for NHE (see updated list at: www.4adi.com/flr/nheflr.html)

*This product is for in vitro research use only.

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Western Blot recycling kit (Use the same blot to probe with multiple antibodies) **recycle blot at room temp in 5-10 min; No mercaptoethanol or heating required).**

NHE52-S-A-P

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India Contact:

Life Technologies (India) Pvt. Ltd.

306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi - 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444

Email: customerservice@lifetechindia.com Website: www.lifetechindia.com