

Product Specification Sheet

Na⁺/H⁺ Exchanger 3 (NHE3) Antibodies

Cat. NHE32-S	Chicken Anti-Rat NHE3 antiserum # 2	SIZE: 100 ul
Cat. NHE32-A	Chicken Anti- Rat NHE3 (aff pure) IgG # 2	SIZE: 100 ug
Cat. NHE32-P	Rat NHE3 control/blocking peptide # 2	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. At least 7 NHE isoforms (**NHE1-7**) 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.

NHE3 (rat, 831aa; human chromosome 5 p15.3) is involved in trans-epithelial Na⁺-absorption. The NHE3 mRNA is found in kidney cortex, medulla, jejunum, ileum, colon and stomach (1).

FUNCTION: Involved in pH regulation to eliminate acids generated by active metabolism or to counter adverse environmental conditions. Major proton extruding system driven by the inward sodium ion chemical gradient. Plays an important role in signal transduction.

SUBCELLULAR LOCATION: Membrane; Multi-pass membrane protein.

SIMILARITY: Belongs to the Na(+)/H(+) exchanger (TC 2.A.36.5.1) family [view classification].

Protein name Sodium/hydrogen exchanger 3

Synonyms Na(+)/H(+) exchanger 3, NHE-3

Solute carrier family 9 member 3

Gene name Name: Slc9a3; Synonyms: Nhe3

Source of Antigen and Antibodies

Antigen	22aa peptide of Rat NHE3/ Slc9a3 ; (protein accession #P26433 , refs 1) Designated (NHE32-P or control peptide) , conjugated to KLH; Epitope location ~C-terminal, Cytoplasmic
Ab Host/type	Chicken, polyclonal Unpurified antiserum (cat #NHE32-S) Aff pure IgG (cat #NHE32-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 -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.

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique). A band of ~90 kDa has been detected in brush border membrane (2).

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

The rat NHE31-P sequence has 90% homology with mouse, and 76% homology with the human NHE3. No significant sequence homology exist with other NHE isoforms (NHE1, 2, 4, and 5). 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: www.4adi.com/data/abblock.html).

General References: (1) Brant SR et al (1995) Am. J. Physiol. 269, C198-C206; Orłowski J et al (1992) J Biol Chem 267, 9331; 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); (2) Yoshioka et al (1997) J Biol. Chem. 122, 641.

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.

Some New Antibodies from ADI...

- Acetylcholine • BGT-1 • Dopamine • GABA (GAT1, -2, -3) • VGAT
- Glycine (Glyt 1, 2) • Glutamate (GLT1, GLAST, EAAC1) • Serotonin • Proline, VGAT • NET • Taurine • Arginine Vasopressin Receptors 1/2 • Aquaporins (AQP 1-9 and RUT2).

NHE32-S-A-P

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