

Product Specification Sheet

**Na<sup>+</sup>/H<sup>+</sup> Exchanger 5 (NHE5) Antibodies**

<b>Cat.</b> NHE51-S	Rabbit Anti-Human NHE5 antiserum # 1	<b>SIZE:</b> 100 ul
<b>Cat.</b> NHE51-A	Rabbit Anti-Human NHE5 IgG # 1 (aff pure)	<b>SIZE:</b> 100 ug
<b>Cat.</b> NHE51-P	Human NHE5 Control/blocking peptide	<b>SIZE:</b> 100 ug

**Reconstitute powder** in PBS at 1 mg/ml

Na<sup>+</sup>/H<sup>+</sup> exchangers (NHE) of mammalian cells are plasma membrane intrinsic proteins mediating exchange of N<sup>+</sup> and H<sup>+</sup> ions in various tissues. The NHE catalyzes the electroneutral transport of extracellular Na<sup>+</sup> for intracellular H<sup>+</sup>. They play a major role in regulation of intracellular pH (pHi) in addition to trans-cellular absorption of Na<sup>+</sup>, cell volume regulation and possibly in cell proliferation. These primary functions of the Na<sup>+</sup>/H<sup>+</sup> 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).

**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 (By similarity).

**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 5

**Synonyms** Na(+)/H(+) exchanger 5, NHE-5

Solute carrier family 9 member 5

**Gene name** Name: SLC9A5 ; Synonyms: NHE5

**Source of Antigen and Antibodies**

<b>Antigen</b>	13aa peptide of Rat NHE5/SLC9A5 ; (Gene Accession #Q14940) <b>Designated (NHE51-P or control peptide)</b> . conjugated to KLH; Epitope location ~N-terminus, Cytoplasmic
<b>Ab Host/type</b>	Rabbit, polyclonal; Unpurified antiserum (cat #NHE51-S) Aff pure IgG ( <b>cat #NHE51-A</b> ) purified over the antigen column
<b>2-ab</b>	<b>Goat Anti-rabbit IgG-HRP</b> cat # 20320 (AP, biotin, FITC conjugates also available)
<b>-ve control</b>	<b># 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control</b>

**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

**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 -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** (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique). NHE5 has a calculated mol wt of ~100 kDa.

**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 NHE51-P sequence is 100% conserved in mouse, rat, and pig NHE5. No significant sequence homology exist with other NHE isoforms (NHE1-4). 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](http://www.4adi.com/data/abblock.html)).

**General References:**

- (1) 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](http://www.4adi.com/flr/nheflr.html))

\*This product is for in vitro research use only.

**Some New Antibodies from ADI...**

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).**

NHE51-S-A-P 70904J

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