

Product Specification Sheet

**Na<sup>+</sup>/H<sup>+</sup> Exchanger 6 (NHE6) Antibodies**

<b>Cat.</b> NHE61-S	Rabbit Anti-Human NHE6 antiserum #1	<b>SIZE:</b> 100 ul
<b>Cat.</b> NHE61-A	Rabbit Anti-Human NHE6 (aff pure) IgG#1	<b>SIZE:</b> 100 ug
<b>Cat.</b> NHE61-P	Human NHE6 Control/blocking peptide 31	<b>SIZE:</b> 100 ug

Na<sup>+</sup>/H<sup>+</sup> exchangers (NHE) of mammalian cells are plasma membrane intrinsic proteins mediating exchange of Na<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. 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. A mammalian homolog of yeast NHA2 has been identified and classified as **NHE6** (KIAA0267). NHE6 is 669 aa (mol wt ~75 kDa), and predicted to contain 12 TM domains within the cytoplasmic N-terminus, the C-terminus may reside in the matrix. NHE6 is ubiquitously expressed but it is most abundant in mitochondrial-rich tissues such as brain, skeletal muscle, and heart.

**FUNCTION:** Electroneutral exchange of protons for Na<sup>(+)</sup> and K<sup>(+)</sup> across the mitochondrial inner membrane. Contributes to organellar volume and calcium homeostasis.

**SUBCELLULAR LOCATION:** Mitochondrion membrane; Multi-pass membrane protein.

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

**Protein name** Sodium/hydrogen exchanger 6

**Synonyms** Na<sup>(+)</sup>/H<sup>(+)</sup> exchanger 6, NHE-6

Solute carrier family 9 member 6

**Gene name** Name: SLC9A6 ; Synonyms: KIAA0267, NHE6

**Source of Antigen and Antibodies**

<b>Antigen</b>	18-aa peptide of Human NHE6/SLC9A6; (gene accession # Q92581) <b>Designated (NHE61-P or control peptide /blocking peptide)</b> conjugated to KLH; Epitope location ~ C-terminus, Cytoplasmic domain
<b>Ab Host/type</b>	Rabbit, Polyclonal unpurified antiserum ( <b>#NHE61-S</b> ) and IgG, purified over antigen-agarose (Cat # <b>NHE61-A</b> )
<b>2-Ab</b>	Cat # 20320, <b>goat anti-rabbit IgG-HRP</b> (AP, biotin, FITC conjugates also available).
<b>-ve control</b>	# 20009-1, Rabbit (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 1 mg/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 -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 ECL). NHE6 has a calculated mol wt of ~75 kDa. (see published refs using this antibody in 2).

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

**Histochemistry & Immunofluorescence:** we recommend the use of affinity purified antibody at 2-20 ug/ml in formaldehyde fixed tissue. (see published refs using this antibody in 2).

**Specificity & Cross-reactivity**

Human NHE61-P sequence has no significant sequence homology with other NHE isoforms (NHE1-5). It is 77% conserved in mouse and rat NHE6. 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) Numata M et al (1998) J. Biol. Chem. 272, 6951-6959; Nagase T et al (1996) DNA Res. 3, 321-329; 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) Citations of ADI's antibodies for NHE** (see updated list at: [www.4adi.com/flr/nheflr.html](http://www.4adi.com/flr/nheflr.html))

Smith DR, 2004. Exp. Cell Research, 298, 521-534 WB, IHC

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

**Some related Antibodies from ADI...**

- NHE1-7, NCX, KCX, NBCs, AE, AQP6

NHE61-S-A-P

100315A

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