

NHE-1 (H-160): sc-28758

BACKGROUND

Na⁺/H⁺ exchangers-1-6 (Na⁺/H⁺ antiporters, NHE-1-6) are integral membrane proteins that are expressed in most mammalian tissues, where they regulate intracellular pH and cell volume. NHEs mediate the secondary active extrusion of hydrogen (H⁺) ions out of cells in exchange for extracellular sodium (Na⁺). Excluding NHE-1, which is ubiquitously expressed, the NHE isoforms NHE-2-6 have distinct tissue- and cell type-dependent expression and inhibitory characteristics by amiloride analogs. Human NHE-1 protein, known also as solute carrier family 9 isoform-1 (SLC9A1), is a ten transmembrane domain-spanning receptor that contains an N-terminal amphiphatic domain and two putative N-glycosylation sites.

CHROMOSOMAL LOCATION

Genetic locus: SLC9A1 (human) mapping to 1p36.11; Slc9a1 (mouse) mapping to 4 D2.3.

SOURCE

NHE-1 (H-160) is a rabbit polyclonal antibody raised against amino acids 656-815 mapping within a C-terminal cytoplasmic domain of NHE-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

NHE-1 (H-160) is recommended for detection of NHE-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

NHE-1 (H-160) is also recommended for detection of NHE-1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for NHE-1 siRNA (h): sc-42650, NHE-1 siRNA (m): sc-42651, NHE-1 shRNA Plasmid (h): sc-42650-SH, NHE-1 shRNA Plasmid (m): sc-42651-SH, NHE-1 shRNA (h) Lentiviral Particles: sc-42650-V and NHE-1 shRNA (m) Lentiviral Particles: sc-42651-V.

Molecular Weight of NHE-1 precursor: 90 kDa.

Molecular Weight of glycosylated NHE-1: 110-130 kDa.

Molecular Weight of NHE-1 dimer: 210 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233, Caki-1 cell lysate: sc-2224 or K-562 whole cell lysate: sc-2203.

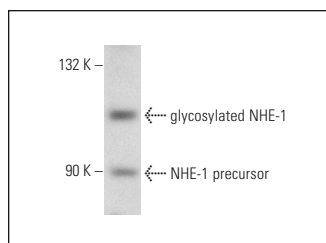
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

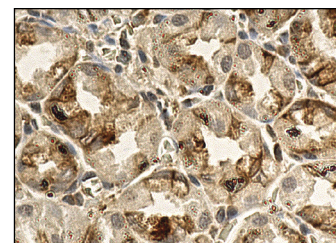
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



NHE-1 (H-160): sc-28758. Western blot analysis of NHE-1 expression in Caki-1 whole cell lysate.



NHE-1 (H-160): sc-28758. Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing membrane and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Simonin, A. and Fuster, D. 2010. Nedd4-1 and β -arrestin-1 are key regulators of Na⁺/H⁺ exchanger 1 ubiquitylation, endocytosis, and function. *J. Biol. Chem.* 285: 38293-38303.
2. Cingolani, O.H., et al. 2011. *In vivo* key role of reactive oxygen species and NHE-1 activation in determining excessive cardiac hypertrophy. *Pflugers Arch.* 462: 733-743.
3. Villa-Abrille, M.C., et al. 2011. Silencing of cardiac mitochondrial NHE1 prevents mitochondrial permeability transition pore opening. *Am. J. Physiol. Heart Circ. Physiol.* 300: H1237-H1251.
4. Jenkins, E.C., et al. 2012. Intracellular pH regulation by Na⁺/H⁺ exchanger-1 (NHE1) is required for growth factor-induced mammary branching morphogenesis. *Dev. Biol.* 365: 71-81.
5. Blough, M.D., et al. 2012. DNA hypermethylation and 1p Loss silence NHE-1 in oligodendroglioma. *Ann. Neurol.* 71: 845-849.
6. Estrella, V., et al. 2013. Acidity generated by the tumor microenvironment drives local invasion. *Cancer Res.* 73: 1524-1535.
7. Yeves, A.M., et al. 2014. Physiological cardiac hypertrophy: critical role of AKT in the prevention of NHE-1 hyperactivity. *J. Mol. Cell. Cardiol.* 76: 186-195.
8. Li, H., et al. 2015. Matrigel basement membrane matrix induces eccrine sweat gland cells to reconstitute sweat gland-like structures in nude mice. *Exp. Cell Res.* 332: 67-77.
9. Mahdee, A., et al. 2016. Complex cellular responses to tooth wear in rodent molar. *Arch. Oral Biol.* 61: 106-114.

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Try **NHE-1 (54): sc-136239**, our highly recommended monoclonal alternative to NHE-1 (H-160).