

NHE-7 (E-14): sc-132386

BACKGROUND

Na⁺/H⁺ exchangers-1-8 (also designated NHE-1-8 or Na⁺/H⁺ antiporters) are integral membrane proteins that are expressed in most mammalian tissues, where they regulate intracellular pH and cell volume. NHEs mediate the transport of hydrogen (H⁺) ions out of cells in exchange for extracellular sodium (Na⁺) ions. While NHE-1 is ubiquitously expressed, the NHE isoforms 2-8 have distinct tissue- and cell type-dependent expression and inhibitory characteristics. Also, all NHE family members, except NHE-6 and NHE-7, which are located intracellularly, reside in the sarcolemmal membrane. NHE-7 interacts with tyrosinase related protein-1 (TRP1) to regulate melanosome pH and tyrosinase activity in human melanocytes.

REFERENCES

- Orlowski, J., Kandasamy, R.A. and Shull, G.E. 1992. Molecular cloning of putative members of the Na/H exchanger gene family. cDNA cloning, deduced amino acid sequence and mRNA tissue expression of the rat Na/H exchanger NHE-1 and two structurally related proteins. *J. Biol. Chem.* 267: 9331-9339.
- Harris, S.P., Strong, T.V., Wys, N., Richards, N.W., Pouyssegur, J., Ernst, S.A. and Dawson, D.C. 1997. Epithelial localization of a reptilian Na⁺/H⁺ exchanger homologous to NHE-1. *Am. J. Physiol.* 272: 1594-1606.
- Sangan, P., Rajendran, V.M., Geibel, J.P. and Binder, H.J. 2002. Cloning and expression of a chloride-dependent Na⁺/H⁺ exchanger. *J. Biol. Chem.* 277: 9668-9675.
- Goyal, S., Vanden Heuvel, G. and Aronson, P.S. 2003. Renal expression of novel Na⁺/H⁺ exchanger isoform NHE-8. *Am. J. Physiol. Renal Physiol.* 284: 467-473.
- Linz, W.J. and Busch, A.E. 2003. NHE-1 inhibition: from protection during acute ischaemia/reperfusion to prevention/reversal of myocardial remodeling. *Naunyn Schmiedeberg's Arch. Pharmacol.* 368: 239-246.
- Smith, D.R., Spaulding, D.T., Glenn, H.M. and Fuller, B.B. 2004. The relationship between Na⁺/H⁺ exchanger expression and tyrosinase activity in human melanocytes. *Exp. Cell Res.* 298: 521-534.
- Goyal, S., Mentone, S. and Aronson, P.S. 2005. Immunolocalization of NHE-8 in rat kidney. *Am. J. Physiol. Renal Physiol.* 288: 530-538.
- Xu, H., Chen, R. and Ghishan, F.K. 2005. Subcloning, localization and expression of the rat intestinal sodium-hydrogen exchanger isoform 8. *Am. J. Physiol. Gastrointest. Liver Physiol.* 289: 36-41.

CHROMOSOMAL LOCATION

Genetic locus: SLC9A7 (human) mapping to Xp11.23; Slc9a7 (mouse) mapping to X A1.3.

SOURCE

NHE-7 (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NHE-7 of human origin.

RESEARCH USE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-132386 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NHE-7 (E-14) is recommended for detection of NHE-7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other NHE family members.

NHE-7 (E-14) is also recommended for detection of NHE-7 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for NHE-7 siRNA (h): sc-91260, NHE-7 siRNA (m): sc-149956, NHE-7 shRNA Plasmid (h): sc-91260-SH, NHE-7 shRNA Plasmid (m): sc-149956-SH, NHE-7 shRNA (h) Lentiviral Particles: sc-91260-V and NHE-7 shRNA (m) Lentiviral Particles: sc-149956-V.

Molecular Weight of NHE-7: 80 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.