SANTA CRUZ BIOTECHNOLOGY, INC.

NHE-1 (B-12): sc-515950

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 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.

REFERENCES

1. Sardet, C., et al. 1989. Molecular cloning, primary structure, and expression of the human growth factor-activatable Na^+/H^+ antiporter. Cell 56: 271-280.
2. Orlowski, J., et al. 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.
3. Fliegel, L., et al. 1993. Cloning and analysis of the human myocardial Na^+/H^+ exchanger. Mol. Cell. Biochem. 125: 137-143.
4. Biemesderfer, D., et al. 1993. NHE-3: a Na^+/H^+ exchanger isoform of renal brush border. Am. J. Physiol. 265: 736-742.

CHROMOSOMAL LOCATION

Genetic locus: SLC9A1 (human) mapping to 1p36.11.

SOURCE

NHE-1 (B-12) is a mouse monoclonal 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_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NHE-1 (B-12) is available conjugated to agarose (sc-515950 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515950 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515950 PE), fluorescein (sc-515950 FITC), Alexa Fluor® 488 (sc-515950 AF488), Alexa Fluor® 546 (sc-515950 AF546), Alexa Fluor® 594 (sc-515950 AF594) or Alexa Fluor® 647 (sc-515950 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515950 AF680) or Alexa Fluor® 790 (sc-515950 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

NHE-1 (B-12) is recommended for detection of NHE-1 of human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

Molecular Weight of NHE-1 precursor: 90 kDa.

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

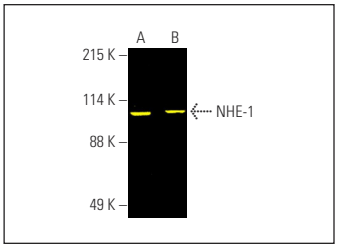
Molecular Weight of NHE-1 dimer: 210 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, U-87 MG cell lysate: sc-2411 or SK-BR-3 cell lysate: sc-2218.

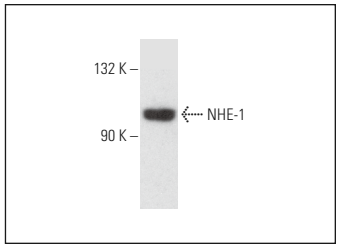
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



NHE-1 (B-12) Alexa Fluor® 488: sc-515950 AF488. Direct fluorescent western blot analysis of NHE-1 expression in U-87 MG (**A**) and SK-BR-3 (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



NHE-1 (B-12): sc-515950. Western blot analysis of NHE-1 expression in K-562 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Maity, D., et al. 2022. Extracellular hydraulic resistance enhances cell migration. Adv. Sci. 9: e2200927.

RESEARCH USE

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