

NHE-11 (N-19): sc-248073

BACKGROUND

Na⁺/H⁺ exchangers (NHEs) are integral membrane proteins 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. NHE-11 (Na⁺/H⁺ exchanger 11), also known as SLC9A11 (solute carrier family 9 member 11), is a 1,124 amino acid multi-pass membrane protein that belongs to the monovalent cation:proton antiporter 1 (CPA1) transporter family. Involved in pH regulation, NHE-11 contains one cyclic nucleotide-binding domain and is encoded by a gene that maps to human chromosome 1q24.3. Human chromosome 1 spans 260 million base pairs, contains over 3,000 genes, comprises nearly 8% of the human genome and houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome.

REFERENCES

- Igarashi, P., Reilly, R.F., Hildebrandt, F., Biemesderfer, D., Rebouças, N.A., Slayman, C.W. and Aronson, P.S. 1991. Molecular biology of renal Na⁺/H⁺ exchangers. *Kidney Int. Suppl.* 33: S84-S89.
- 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.
- Eudy, J.D., Weston, M.D., Yao, S., Hoover, D.M., Rehm, H.L., Ma-Edmonds, M., Yan, D., Ahmad, I., Cheng, J.J., Ayuso, C., Cremers, C., Davenport, S., Moller, C., Talmadge, C.B., Beisel, K.W., et al. 1998. Mutation of a gene encoding a protein with extracellular matrix motifs in Usher syndrome type IIa. *Science* 280: 1753-1757.
- Tayebi, N., Callahan, M., Madike, V., Stubblefield, B.K., Orvisky, E., Krasnewich, D., Fillano, J.J. and Sidransky, E. 2001. Gaucher disease and parkinsonism: a phenotypic and genotypic characterization. *Mol. Genet. Metab.* 73: 313-321.
- Plasilova, M., Russell, A.M., Wanner, A., Wolf, A., Dobbie, Z., Müller, H.J. and Heinemann, K. 2004. Exclusion of an extracolonic disease modifier locus on chromosome 1p33-36 in a large Swiss familial adenomatous polyposis kindred. *Eur. J. Hum. Genet.* 12: 365-371.
- Betarbet, R., Anderson, L.R., Gearing, M., Hodges, T.R., Fritz, J.J., Lah, J.J. and Levey, A.I. 2008. Fas-associated factor 1 and Parkinson's disease. *Neurobiol. Dis.* 31: 309-315.
- Holliday, E.G., Nyholt, D.R., Tirupati, S., John, S., Ramachandran, P., Ramamurti, M., Ramadoss, A.J., Jeyagurunathan, A., Kottiswaran, S., Smith, H.J., Filippich, C., Nertney, D.A., Nancarrow, D.J., et al. 2009. Strong evidence for a novel schizophrenia risk locus on chromosome 1p31.1 in homogeneous pedigrees from Tamil Nadu, India. *Am. J. Psychiatry* 166: 206-215.
- Balcáková, J., Urbánková, H., Scudla, V., Holzerová, M., Bacovský, J., Indrák, K. and Jarosová, M. 2009. Gain of chromosome arm 1q in patients in relapse and progression of multiple myeloma. *Cancer Genet. Cytogenet.* 192: 68-72.

CHROMOSOMAL LOCATION

Genetic locus: SLC9C2 (human) mapping to 1q25.1.

SOURCE

NHE-11 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of NHE-11 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.

Blocking peptide available for competition studies, sc-248073 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NHE-11 (N-19) is recommended for detection of NHE-11 of 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).

Suitable for use as control antibody for NHE-11 siRNA (h): sc-88128, NHE-11 shRNA Plasmid (h): sc-88128-SH and NHE-11 shRNA (h) Lentiviral Particles: sc-88128-V.

Molecular Weight of NHE-11: 129 kDa.

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.

RESEARCH USE

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

PROTOCOLS

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