

NHE-3 (4F5): sc-53963

BACKGROUND

Na⁺/H⁺ exchangers 1-8, also designated Na⁺/H⁺ antiporters or NHE-1-8, 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. While NHE-1 is ubiquitously expressed, NHE isoforms 2-8 have distinct tissue and cell type dependent expression and inhibitory characteristics. NHE-3 localizes to the apical membrane of renal proximal tubules where it is responsible for most of the sodium transport and fluid reabsorption. NHE-3 translocates to internal pools where it mediates natriuresis when blood pressure increases abruptly. NHE-3 is also expressed in the stomach and functions to protect the mucosa by secreting protons that diffuse into the mucous cells.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: Slc9a3 (mouse) mapping to 13 C1.

SOURCE

NHE-3 (4F5) is a mouse monoclonal antibody raised against amino acids 702-832 of NHE-3 of rabbit origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

NHE-3 (4F5) is recommended for detection of NHE-3 of mouse, rat and rabbit 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

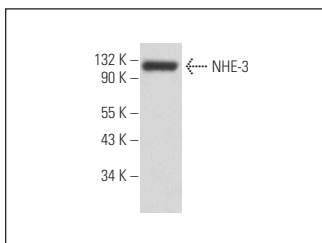
Molecular Weight of glycosylated NHE-3 isoforms: 93/80-100 kDa.

Positive Controls: rat kidney extract: sc-2394.

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, TBS Blotto A Blocking Reagent: sc-2333 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-3 (4F5): sc-53963. Western blot analysis of NHE-3 expression in rat kidney tissue extract.

SELECT PRODUCT CITATIONS

- da Costa-Pessoa, J.M., Damasceno, R.S., Machado, U.F., Beloto-Silva, O., Oliveira-Souza, M. 2014. High glucose concentration stimulates NHE-1 activity in distal nephron cells: the role of the Mek/Erk1/2/p90^{RSK} and p38^{MAPK} signaling pathways. *Cell. Physiol. Biochem.* 33: 333-343.

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 for detailed protocols and support products.