SANTA CRUZ BIOTECHNOLOGY, INC.

p-NHE-3 (14D5): sc-53962

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, NHE isoforms-2-6 have distinct tissue- and cell type- dependent expression, and inhibitiory characteristics by amiloride analogs. Mammalian NHE-3 protein, also known as solute carrier family 9 isoform-3 or SLC9A3, is a major absorptive NHE in kidney and intestine that influences ion homeostasis by mediating sodium absorption.

REFERENCES

1. Fliegel, L., et al. 1993. Cloning and analysis of the human myocardial Na^+/H^+ exchanger. Mol. Cell. Biochem. 125: 137-143.
2. 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: SLC9A3 (human) mapping to 5p15.33; Slc9a3 (mouse) mapping to 13 C1.

SOURCE

p-NHE-3 (14D5) is a mouse monoclonal antibody raised against a serine-phosphorylated synthetic peptide corresponding to amino acids 542-563 of NHE-3 of rat origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-NHE-3 (14D5) is available conjugated to agarose (sc-53962 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53962 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53962 PE), fluorescein (sc-53962 FITC), Alexa Fluor® 488 (sc-53962 AF488), Alexa Fluor® 546 (sc-53962 AF546), Alexa Fluor® 594 (sc-53962 AF594) or Alexa Fluor® 647 (sc-53962 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53962 AF680) or Alexa Fluor® 790 (sc-53962 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

p-NHE-3 (14D5) is recommended for detection of NHE-3 (phosphoserine 552) 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

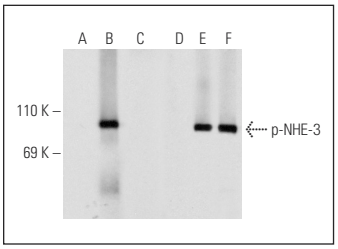
Suitable for use as control antibody for NHE-3 siRNA (h): sc-36059, NHE-3 siRNA (m): sc-36060, NHE-3 shRNA Plasmid (h): sc-36059-SH, NHE-3 shRNA Plasmid (m): sc-36060-SH, NHE-3 shRNA (h) Lentiviral Particles: sc-36059-V and NHE-3 shRNA (m) Lentiviral Particles: sc-36060-V.

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

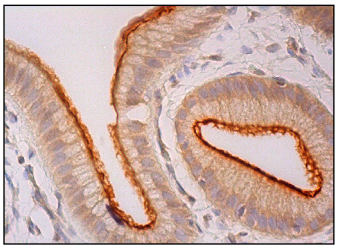
STORAGE

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

DATA



Western blot analysis of NHE-3 phosphorylation in non-transfected: sc-110760 (**A**,**D**), untreated mouse NHE-3 transfected: sc-179002 (**B**,**E**) and lambda protein phosphatase (sc-200312A) treated mouse NHE-3 transfected: sc-179002 (**C**,**F**) 293 whole cell lysates. Antibodies tested include p-NHE-3 (14D5): sc-53962 (**A**,**B**,**C**) and NHE-3 (53): sc-136368 (**D**,**E**,**F**).



p-NHE-3 (14D5): sc-53962. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing apical membrane staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Crajoinas, R.O., et al. 2010. Posttranslational mechanisms associated with reduced NHE3 activity in adult vs. young prehypertensive SHR. Am. J. Physiol. Renal Physiol. 299: F872-F881.
2. Queiroz-Leite, G.D., et al. 2012. Fructose acutely stimulates NHE3 activity in kidney proximal tubule. Kidney Blood Press. Res. 36: 320-334.
3. Crajoinas, R.O., et al. 2014. Changes in the activity and expression of protein phosphatase-1 accompany the differential regulation of NHE3 before and after the onset of hypertension in spontaneously hypertensive rats. Acta Physiol. 211: 395-408.
4. Crajoinas, R.O., et al. 2016. Angiotensin II counteracts the effects of cAMP/PKA on NHE3 activity and phosphorylation in proximal tubule cells. Am. J. Physiol., Cell Physiol. 311: C768-C776.
5. Chen, Y., et al. 2017. Phosphorylation and subcellular localization of Na^+/H^+ exchanger isoform 3 (NHE-3) are associated with altered gallbladder absorptive function after formation of cholesterol gallstones. J. Physiol. Biochem. 73: 133-139.
6. Cherezova, A., et al. 2019. Urinary concentrating defect in mice lacking Epac1 or Epac2. FASEB J. 33: 2156-2170.
7. McFarlin, B.E., et al. 2020. Coordinate adaptations of skeletal muscle and kidney to adjust extracellular [K^+] during K^+ deficient diet in mice. Am. J. Physiol., Cell Physiol. 319: C757-C770.
8. Fan, C., et al. 2021. NFAT5 is involved in GRP-enhanced secretion of GLP-1 by sodium. Int. J. Mol. Sci. 22: 3951.

RESEARCH USE

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