

NHERF-1 (h2): 293T Lysate: sc-116473

BACKGROUND

The Na⁺/H⁺ exchange protein (NHE3) functions in transepithelial Na⁺ absorption and is primarily expressed in the intestinal and renal brush border membrane. NHE3 regulatory factor 1 (NHERF-1) interacts with NHE3 through two PDZ (for PSD-95, discs-large and ZO-1 homology) domains, which are protein-protein interaction modules that associate with specific carboxy-terminal motifs on target proteins. Also known as EBP50, NHERF-1 facilitates cAMP inhibition of NHE3 to decrease Na⁺ adsorption. NHERF-1 functions as a scaffold for an essential multiprotein complex of Ezrin and NHE3 for cAMP-mediated phosphorylation and consequent inhibition of NHE3. The amino-terminal PDZ domain regulates the dimerization of NHERF-1 *in vivo*. G protein-coupled receptor kinase 6A phosphorylates NHERF-1 at Ser 289 via a PDZ domain-mediated interaction. NHERF-2, also known as E3KARP, is an ubiquitously expressed protein which also functions in NHE2 regulation.

REFERENCES

1. Aronson, P.S., et al. 1986. Molecular-properties and physiological roles of the renal Na⁺/H⁺ exchanger. *Curr. Top. Mem. Trans.* 26: 57-75.
2. Sheng, M. 1996. PDZs and receptor/channel clustering: rounding up the latest suspects. *Neuron* 17: 575-578.
3. Yun, C.H., et al. 1997. cAMP-mediated inhibition of the epithelial brush border Na⁺/H⁺ exchanger, NHE3, requires an associated regulatory protein. *Proc. Natl. Acad. Sci. USA* 94: 3010-3015.
4. Poulat, F., et al. 1997. The human testis determining factor SRY binds a nuclear factor containing PDZ protein interaction domains. *J. Biol. Chem.* 272: 7167-7172.
5. Imai, K., et al. 1998. Genomic structure and sequence of a human homologue (NTHL1/NTH1) of *Escherichia coli* endonuclease III with those of the adjacent parts of TSC2 and SLC9A3R2 genes. *Gene* 222: 287-295.
6. Hall, R.A., et al. 1999. G protein-coupled receptor kinase 6A phosphorylates the Na⁺/H⁺ exchanger regulatory factor via a PDZ domain-mediated interaction. *J. Biol. Chem.* 274: 24328-24334.
7. Weinman, E.J., et al. 2000. NHERF associations with sodium-hydrogen exchanger isoform 3 (NHE3) and Ezrin are essential for cAMP-mediated phosphorylation and inhibition of NHE3. *Biochem.* 39: 6123-6129.
8. Shenolikar, S., et al. 2001. N-terminal PDZ domain is required for NHERF dimerization. *FEBS Lett.* 489: 233-236.

CHROMOSOMAL LOCATION

Genetic locus: NHERF (human) mapping to 17q25.1.

PRODUCT

NHERF-1 (h2): 293T Lysate represents a lysate of human NHERF-1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

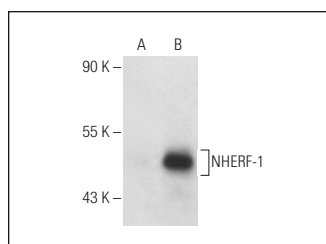
APPLICATIONS

NHERF-1 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive NHERF-1 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

NHERF-1 (4i337): sc-71697 is recommended as a positive control antibody for Western Blot analysis of enhanced human NHERF-1 expression in NHERF-1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

DATA



NHERF-1 (4i337): sc-71697. Western blot analysis of NHERF-1 expression in non-transfected: sc-117752 (A) and human NHERF-1 transfected: sc-116473 (B) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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