Technical Data Sheet

Purified Mouse Anti-NHE

Product Information

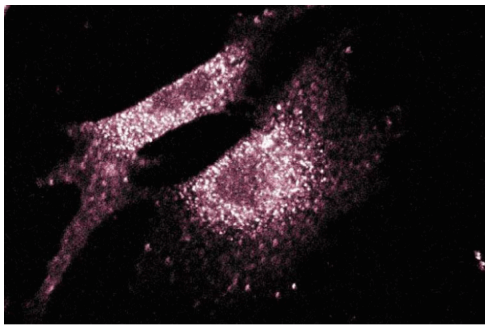
Material Number:	**611774**
Alternate Name:	Na+/H+ Exchangers
Size:	50 µg
Concentration:	250 µg/ml
Clone:	54/NHE
Immunogen:	Rat NHE-1 aa. 682-801
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Human Tested in Development: Mouse, Rat, Dog
Target MW:	92 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

Description

The extrusion of H+ in exchange for extracellular Na+ is important for many cellular processes, such as pH homeostasis, volume regulation, and transepithelial ion and water transport. Na+/H+ Exchangers (NHE) are integral membrane proteins that mediate electroneutral exchange of one Na+ ion for one H+ ion. Six NHE forms, NHE-1 thru -6, have been identified. NHE-1 and NHE-6 are widely expressed, while the other NHE forms have restricted expression. The common structure of all NHE forms includes 10-12 N-terminal membrane (M) spanning regions, a conserved M6 and M7 region that may participate in ion transport, and a large C-terminal cytoplasmic region that may be involved in the regulation of ion exchange activity. NHE-1, for example, contains 12 M regions plus domains for volume sensitivity, calmodulin-binding, CHP-binding, and PKC phosphorylation in the cytoplasmic region. Regulation of NHE-1 ion exchange activity may occur through phosphoinositide binding, as well as PKC- and PKA-dependent signaling pathways. Mutation of NHE-1 in mice causes neuronal death in the cerebellum and brainstem, leading to ataxia and seizures. Thus, NHE-1 is a ubiquitous NHE that is essential for normal brain function.

Although this antibody was developed against the NHE-1 antigen, investigators should note that crossreactivity to other NHE isoforms or variants may be possible.

Western blot analysis for NHE on a HEK-293 cell lysate (Human embryonic kidney cells; ATCC CRL-1573). *Lane 1: 1:250, lane 2: 1:500, lane 3: 1:1000 dilution of the Mouse Anti-NHE antibody.*



Immunofluorescence staining of NIH/3T3 cells (Mouse embryo fibroblast cells; ATCC CRL-1658).

Preparation and Storage

Store undiluted at -20°C.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

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Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Tested During Development

Recommended Assay Procedure:

Western blot: Please refer to http://www.bdbiosciences.com/pharmingen/protocols/Western_Blotting.shtml

Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Ig	0.5 mg	Polyclonal

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

Aharonovitz O, Zaun HC, Balla T, York JD, Orlowski J, Grinstein S. Intracellular pH regulation by Na(+)/H(+) exchange requires phosphatidylinositol 4,5-bisphosphate. *J Cell Biol.* 2000; 150(1):213-224. (Biology)

Cox GA, Lutz CM, Yang CL. Sodium/hydrogen exchanger gene defect in slow-wave epilepsy mutant mice. *Cell.* 1997; 91(1):139-148. (Biology)

DNA Damage-Induced Bcl-XL Deamidation Is Mediated by NHE-1 Antiport Regulated Intracellular pH. DNA Damage-Induced Bcl-XL Deamidation Is Mediated by NHE-1 Antiport Regulated Intracellular pH. 2007; 5(1) Available: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1702560/pdf/pbio.0050001.pdf JAN 2007. (Biology)

Kandasamy RA, Yu FH, Harris R, Boucher A, Hanrahan JW, Orlowski J. Plasma membrane Na+/H+ exchanger isoforms (NHE-1, -2, and -3) are differentially responsive to second messenger agonists of the protein kinase A and C pathways. *J Biol Chem.* 1995; 270(49):29209-29216. (Biology)

Orlowski J, Kandasamy RA, Shull GE. 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.* 1992; 267(13):9331-9339. (Biology)