abcam

ab230449

Anti-Sodium/Hydrogen Exchanger 1/NHE-1 antibody

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Constituents: PBS, 50% Glycerol (glycerin, glycerine)
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human SLC9A1. The exact immunogen used to generate this antibody is proprietary information. Database link P19634
Purification technique	Affinity purification Immunogen

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

WB

Tested

Species	Human
Dilution info	1/500
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100
Notes	-

Target data

See full target information SLC9A1

Function

Electroneutral Na(+) /H(+) antiporter that extrudes Na(+) in exchange for external protons driven by the inward sodium ion chemical gradient, protecting cells from acidification that occurs from metabolism (PubMed:11350981, PubMed:11532004, PubMed:14680478, PubMed:15035633, PubMed:15677483, PubMed:17073455, PubMed:17493937, PubMed:22020933, PubMed:27650500, PubMed:32130622, PubMed:7110335, PubMed:7603840). Exchanges intracellular H(+) ions for extracellular Na(+) in 1:1 stoichiometry (By similarity). Plays a key role in maintening intracellular pH neutral and cell volume, and thus is important for cell growth, proliferation, migration and survival (PubMed:12947095, PubMed:15096511, PubMed:22020933, PubMed:8901634). In addition, can transport lithium Li(+) and also functions as a Na(+)/Li(+) antiporter (PubMed:7603840). SLC9A1 also functions in membrane anchoring and organization of scaffolding complexes that coordinate signaling inputs (PubMed:15096511).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The Sodium/Hydrogen Exchanger 1 (NHE-1) also known as NHE transporter or antisodium exchanger plays a significant role in regulating intracellular pH and cell volume by exchanging sodium ions for hydrogen ions across the plasma membrane. NHE-1 is a type of NHE protein with a molecular weight of approximately 85-110 kDa. This transmembrane protein is widely expressed in various tissues including the heart brain kidneys and skeletal muscles where it helps maintain cellular homeostasis.
Biological function summary	NHE-1 impacts cellular processes by modulating pH levels within cells and participating in the regulation of cell proliferation differentiation and apoptosis. It doesn't function as part of a larger complex but plays an independent role essential to cellular ionic balance. The proper functioning of NHE-1 is critical for the survival and functionality of many cell types as it helps adapt to changes in metabolic and environmental conditions.
Pathways	NHE-1 integrates into key cellular signaling systems such as the mitogen-activated protein kinase (MAPK) pathway and the Apoptosis signaling pathway. In the MAPK pathway NHE-1 interacts with signaling molecules to influence cellular responses to growth signals. Additionally its regulation of intracellular pH and ionic concentrations intersects with pathways involving proteins like Calcineurin which can impact various cellular responses and adaptations.
Associated diseases and disorders	NHE-1 is heavily linked to several cardiovascular conditions including hypertension and cardiac hypertrophy. Its dysregulation can alter cardiac cell function contributing to the pathology of these diseases. In cancer aberrant NHE-1 activity may lead to increased cell survival and proliferation. The protein also connects to disorders like ischemia where its function influences the role of related proteins like Na+/K+ ATPase further implying NHE-1's involvement in pathological states.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

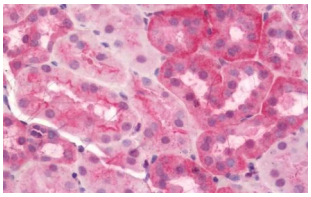
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

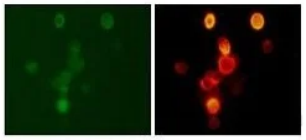
3 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Sodium/Hydrogen Exchanger 1/NHE-1 antibody (ab230449)

Sodium/Hydrogen Exchanger 1/NHE-1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Sodium/Hydrogen Exchanger 1/NHE-1 antibody

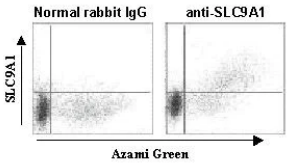
Formalin-fixed, paraffin-embedded human-kidney tissue stained for Sodium/Hydrogen Exchanger 1/NHE-1 using ab230449 at 1/100 dilution in immunohistochemical analysis.



Immunocytochemistry/ Immunofluorescence - Anti-Sodium/Hydrogen Exchanger 1/NHE-1 antibody (ab230449)

Sodium/Hydrogen Exchanger 1/NHE-1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Sodium/Hydrogen Exchanger 1/NHE-1 antibody

HEK-293T (human epithelial cell line from embryonic kidney transformed with large T antigen) cells transiently expressing Sodium/Hydrogen Exchanger 1/NHE-1 stained for Sodium/Hydrogen Exchanger 1/NHE-1 (red) using ab230449 at 1/100 dilution in ICC/IF. Left panel stained with Azami-green.



Flow Cytometry (Intracellular) - Anti-Sodium/Hydrogen Exchanger 1/NHE-1 antibody (ab230449)

Sodium/Hydrogen Exchanger 1/NHE-1 Flow Cytometry (Intracellular) staining using rabbit Anti-Sodium/Hydrogen Exchanger 1/NHE-1 antibody

Intracellular flow cytometric analysis of intracellular Sodium/Hydrogen Exchanger 1/NHE-1 expression in HEK-293T (human epithelial cell line from embryonic kidney transformed with large T antigen) cells transeintly expressing Sodium/Hydrogen Exchanger 1/NHE-1 and Azami green, using Normal rabbit IgG (left) and ab230449 at 1/100 dilution (right).

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