abcam

ab2869

Anti-NCX1 antibody [C2C12]

Key facts

Isotype	IgM
Host species	Mouse
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS, 6.97% L-Arginine
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	C2C12
Epitope	This antibody recognizes an epitope between amino acids 371-525 on the intracellular side of the plasma membrane.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20 - 1/100
Notes	ab91545 - Mouse monoclonal IgM, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat, Rabbit, Guinea pig, Dog, Pig
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	5 µg/mL
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Predicted

Species	Mouse, Rat, Rabbit, Guinea pig, Dog, Pig
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Human
Dilution info	1 µg/mL
Notes	PubMed: 21408028

Predicted

Species	Mouse, Rat, Rabbit, Guinea pig, Dog, Pig
Dilution info	-
Notes	-

Target data

See full target information SLC8A1

Function	Mediates the exchange of one Ca(2+) ion against three to four Na(+) ions across the cell membrane, and thereby contributes to the regulation of cytoplasmic Ca(2+) levels and Ca(2+)-dependent cellular processes (PubMed:11241183, PubMed:1374913, PubMed:1476165). Contributes to Ca(2+) transport during excitation-contraction coupling in muscle (PubMed:11241183, PubMed:1374913, PubMed:1476165). In a first phase, voltage-gated channels mediate the rapid increase of cytoplasmic Ca(2+) levels due to release of Ca(2+) stores from the endoplasmic reticulum (PubMed:11241183, PubMed:1374913, PubMed:1476165). SLC8A1 mediates the export of Ca(2+) from the cell during the next phase, so that cytoplasmic Ca(2+) levels rapidly return to baseline (PubMed:11241183, PubMed:1374913, PubMed:1476165). Required for normal embryonic heart development and the onset of heart contractions (By similarity).

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

Notes

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

Supplementary info

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

Activity summary	NCX1 also known as the Sodium-Calcium Exchanger 1 plays a critical role in removing calcium ions from cells by exchanging them for sodium ions. It operates as an antiporter mechanism facilitating the transport of three sodium ions into the cell in exchange for one calcium ion being transported out. The protein has a molecular mass of approximately 120 kDa. NCX1 is widely expressed in various tissues including heart brain kidney and skeletal muscle indicating its importance in multiple physiological processes.
Biological function summary	NCX1 contributes significantly to controlling intracellular calcium levels important for muscle contraction and neuronal function. The protein forms part of a larger complex that includes several regulatory proteins which modulate its activity according to the cellular environment. By managing calcium ion concentration inside cells NCX1 influences various cellular processes such as muscle relaxation and excitatory signaling in neurons.
Pathways	NCX1 integrates itself into the cellular calcium homeostasis and cardiac excitation-contraction coupling pathways. In the cardiac tissue it works alongside other proteins like the L-type calcium channel contributing to the regulation of the heart’s rhythm and contraction force. Another pathway involves its interaction with the sodium-potassium ATPase which helps maintain the cell's electrochemical gradient essential for proper muscle and nerve function.
Associated diseases and disorders	NCX1 has been linked to cardiovascular diseases such as heart failure and arrhythmias. Abnormal NCX1 function can disrupt calcium balance leading to these conditions. Moreover the protein's relationship with the L-type calcium channel is important because alterations in their interaction can exacerbate such cardiovascular disorders. Additionally NCX1 has connections to disorders like epilepsy where other ion channels and transporters also play critical roles in maintaining neural excitability and preventing seizure activities.

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

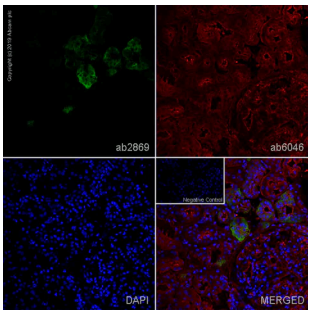
We do not recommend this combination. It is not covered by our product promise.

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.

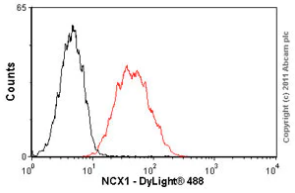
4 product images



Immunohistochemistry (Frozen sections) - Anti-NCX1 antibody [C2C12] (ab2869)

NCX1 Immunohistochemistry (Frozen sections) staining using mouse Anti-NCX1 antibody

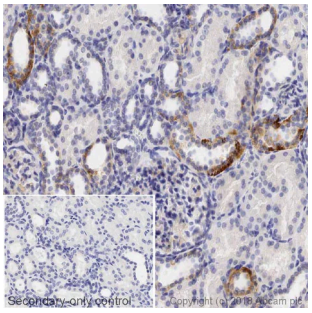
IHC image of NCX1 staining in a section of frozen normal human kidney*. The section was fixed using 10% formaldehyde in 1XPBS for 10 minutes. No antigen retrieval step was performed prior to staining. Non-specific protein-protein interactions were then blocked in TBS containing 0.025% (v/v) Triton X-100, 0.3M glycine and 1% (w/v) BSA for 1h at room temperature. The section was then incubated overnight at +4°C in TBS containing 0.025% (v/v) Triton X-100 and 1% (w/v) BSA with ab2869 at 1µg/ml and ab6046 (Rabbit polyclonal to beta Tubulin - Loading Control) at 1/1000. The section was then incubated with ab150117 (Goat Anti-Mouse IgG H&L (Alexa Fluor® 488), 1/1000)) (shown in green) and ab150080 Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 594), 1/1000) (shown in red) for 1 hour at room temperature. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM. The secondary-only control insert image is taken from an identical assay without primary antibody. The section was then mounted using Fluoromount®. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). For IHC staining systems (automated and non-automated), customers should optimize variable parameters such as antibody concentrations and incubation times. *Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre.



Flow Cytometry (Intracellular) - Anti-NCX1 antibody [C2C12] (ab2869)

NCX1 Flow Cytometry (Intracellular) staining using mouse Anti-NCX1 antibody

Overlay histogram showing HEK293 cells stained with ab2869 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab2869, 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgM (mu chain) (ab97007) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgM [ICIGM] (ab91545, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in HEK293 cells fixed with 4% paraformaldehyde (10 min)/permeabilized in 0.1% PBS-Tween used under the same conditions.

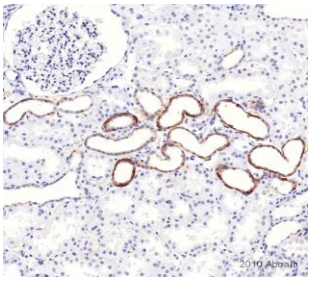


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NCX1 antibody [C2C12] (ab2869)

NCX1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-NCX1 antibody

IHC image of NCX1 staining in a section of formalin-fixed paraffin-embedded normal human kidney* performed on a Leica BOND^{TM} system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20mins. The section was then incubated with ab2869, 5ug/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody. For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

* *Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre*



This image is courtesy of an anonymous customer review

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NCX1 antibody [C2C12] (ab2869)

ab2869 staining NCX1 in Human kidney tissue sections by Immunohistochemistry (IHC-P - formaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde, permeabilized with 0.05% Tween20 and blocked with 5% normal goat serum in 1XPBS + 0.05% Tween20 for 1 hour at 25°C; antigen retrieval was by heat mediation in sodium citrate (pH 6.0) buffer. Samples were incubated with primary antibody (1/100 in blocking buffer) for 1 hour at 25°C. ab47827 (1/500) was used as the secondary antibody.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.