9765 Clairemont Mesa Blvd, Suite C
San Diego, CA 92124
Tel: 858.875.1900 Fax: 858.622.0609

Na+/Ca2+ Exchanger 1 (NCX-1) Antibody

Affinity purified polyclonal antibody
Catalog # AG1159

Specification

Na+/Ca2+ Exchanger 1 (NCX-1) Antibody - Product Information

Application	**WB, IHC**
Primary Accession	Q01728
Reactivity	**Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Calculated MW	**108185**
Homology	**Human, mouse-identical.**

Na+/Ca2+ Exchanger 1 (NCX-1) Antibody - Additional Information

Gene ID
29715

Other Names
Sodium/calcium exchanger 1, Na(+)/Ca(2+)-exchange protein 1, Solute carrier family 8 member 1, Slc8a1, Ncx1

Related products for control experiments
Control peptide antigen (supplied with the antibody free of charge).

Target/Specificity
Peptide (C)EVDERDQDDEEAR, corresponding to amino acid residues 308-320 of rat NCX-1 (Accession Q01728). 3rd intracellular loop.

Dilution
WB~~1:200-1:2000
IHC~~1:100

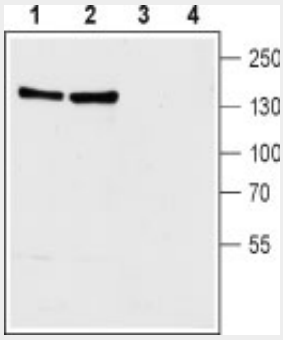
Peptide Confirmation
Confirmed by mass-spectrography and amino acid analysis.

Format
Affinity purified antibody, lyophilized powder

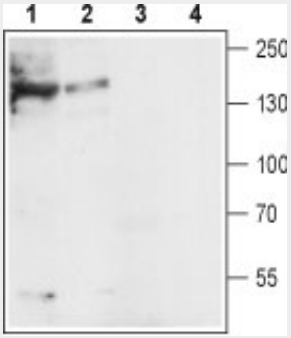
Reconstitution
50 µl or 0.2 ml deionized water, depending on the sample size.

Antibody Concentration After Reconstitution
0.8 mg/ml.

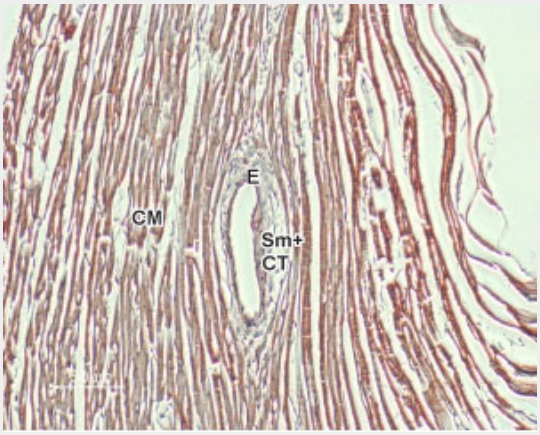
Buffer After Reconstitution
Phosphate buffered saline (PBS), pH 7.4, 1% BSA, 0.05% NaN3.



Western blot analysis of rat (lanes 1 and 3) and mouse (lanes 2 and 4) brain membranes: 1, 2. **Anti-Na^+/Ca^{2+} Exchanger 1 (NCX-1)** antibody (#AG1159), (1:200).
3, 4. Anti-Na^+/Ca^{2+} Exchanger 1 (NCX-1) antibody, preincubated with the control peptide antigen.



Western blot analysis of mouse (lanes 1 and 3) and rat (lanes 2 and 4) heart lysates: 1, 2. **Anti-Na^+/Ca^{2+} Exchanger 1 (NCX-1)** antibody (#AG1159), (1:200).
3, 4. Anti-Na^+/Ca^{2+} Exchanger 1 (NCX-1) antibody, preincubated with the control peptide antigen.



Storage Before Reconstitution
Lyophilized powder can be stored intact at room temperature for several weeks. For longer periods, it should be stored at -20°C.

Storage After Reconstitution
The reconstituted solution can be stored at 4ºC for up to 2 weeks. For longer periods, small aliquots should be stored at -20ºC or below. Avoid multiple freezing and thawing. The further dilutions should be made using a carrier protein such as BSA (1%). Centrifuge all antibody preparations before use (10000 × g 5 min).

Control Antigen Storage Before Reconstitution
Lyophilized powder can be stored intact at room temperature for several weeks. For longer periods, it should be stored at -20°C.

Control Antigen Reconstitution
100 µl DDW.

Control Antigen Storage After Reconstitution
-20ºC.

Preadsorption Control
1 µg peptide per 1 µg antibody.

Na+/Ca2+ Exchanger 1 (NCX-1) Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Expression of NCX-1 in rat heart
Immunohistochemical staining of rat heart paraffin-embedded sections using **Anti-Na^+/Ca^{2+} Exchanger 1 (NCX-1)** antibody (#AG1159), (1:100). Hematoxilin is used as the counterstain. NCX-1 labeling (brown) appears in the cardiac muscle cells (CM), and not in other parts of the tissue, such as the blood vessel endothelium (E), the connective tissue (CT) and smooth muscle (SM).

Na+/Ca2+ Exchanger 1 (NCX-1) Antibody - Background

Ca^{2+} has proven to be a universal signaling molecule in excitable and non-excitable cells. However, being that its intracellular concentration is 1000 time lower than the extracellular milieu, it is important for the cell to keep this ratio for proper function. NCX, a Na^+/Ca^{2+} exchanger is responsible for most of the efflux of Ca^{2+} out from the cell[1-3]. The NCX transporter is a member of the SLC8 family of solute carriers which in turn belong to the CaCA superfamily[1,4,5]. NCX-1 is one of three Na^+/Ca^{2+} exchangers (NCX-1, NCX-2, NCX-3) leading to one Ca^{2+} movement across the plasma membrane in exchange of three Na+ influx. However, the transporter can reverse the direction of the transport if the concentrations of Na^+ and Ca^{2+} change[6]. The transporter has nine transmembrane domains and intracellular N- and C-terminals. Between tansmembrane domains 5 and 6, the presence of an extra-long intracellular loop, termed the f loop is responsible for regulating the activity of NCX-1 via several different mechanisms like ion binding, phosphorylation, etc. The f loop also has sites which undergo alternative splicing[7]. Of the three NCX-1 expressed in mammalian cells, NCX-1 is the most widely expressed. Its expression is detected in the heart, brain, and kidney. NCX-1 undergoes alternative splicing in a tissue dependent manner. The first splice region does not change the overall structure of the protein but rather enables the expression of the gene specific to the tissues which require the expression of the gene. The second splicing site leads to a number of proteins varying in length. NCX-2 expression is much more limited; it is expressed only in neurons. NCX-3 is expressed in skeletal muscle and in some regions of the brain and undergoes alternative splicing in a similar fashion to that of NCX-1[1,8]. Due to its central role in modulating Ca^{2+} levels in the cell, NCX-1 has become a pharmaceutical target in the development of drugs for various heart diseases and neurological disorders[1]. Abgent is pleased to offer a highly specific antibody directed against an epitope of rat NCX1. Anti-Na^+/Ca^{2+} Exchanger 1 (NCX-1) antibody (#AG1159) can be used in western blot and immunohistochemistry applications, and has been designed to recognize NCX-1 from human, rat and mouse samples.

Na+/Ca2+ Exchanger 1 (NCX-1) Antibody - References

References 1. Lytton, J. (2007) *Biochem. J.* 406, 365. 2. Lee, S. *et al.* (2002) *J. Neurosci.* 22, 6891. 3. Wanaverbecq, N. *et al.* (2003) *J. Physiol.* 550, 83. 4. Schwarz, E. and Benzer, S. (1997) *Proc. Natl. Acad. Sci. U.S.A.* 94, 10249. 5. Cai, X. and Lytton, J. (2004) *Mol. Biol. Evol.* 21, 1692. 6. Kimura, J. *et al.* (2009) *Biol. Pharm. Bull.* 32, 325. 7. Annunziato, L. *et al.* (2004) *Pharmacol. Rev.* 56, 633. 8. Papa, M. *et al.* (2003) *J. Comp. Neurol.* 461, 31.