

NCX1 (C-15): sc-30306

BACKGROUND

Sodium/calcium exchanger proteins are integral membrane proteins primarily seen in cardiac cells. In cardiac myocytes, the concentration of Ca^{2+} alternates between low levels during relaxation and high levels during contraction. The Na^+/Ca^{2+} exchanger 1 (NCX1) protein mediates Ca^{2+} extrusion from cardiac cells during relaxation. Four NCX1 isoforms (NCX1.1, NCX1.3, NCX1.7, and NCX1.10) result from alternate splicing. NCX1 mRNA is present at high levels in the heart, with lower levels present in the brain. NCX2 is most abundantly expressed in brain, in contrast the the broader distribution of NCX1, which is also expressed in heart, kidney, lung, smooth and skeletal muscle. The difference in expression for the transporter subtypes is believed to reflect differences in their functional roles. Regulation mechanisms for these exchanger proteins have not been fully characterized.

REFERENCES

1. Komuro, I., et al. 1992. Molecular cloning and characterization of the human cardiac Na^+/Ca^{2+} exchanger cDNA. Proc. Natl. Acad. Sci. USA 89: 4769-4773.
2. McDaniel, L.D., et al. 1993. Mapping of the human cardiac Na^+/Ca^{2+} exchanger gene (NCX1) by fluorescent *in situ* hybridization to chromosome region 2p22→p23. Cytogenet Cell Genet. 63: 192-193.
3. Xie, X., et al. 2004. Presence of sodium-calcium exchanger/GM1 complex in the nuclear envelope of non-neural cells: nature of exchanger-GM1 interaction. Neurochem. Res. 29: 2135-2146.
4. Pignataro, G., et al. 2004. Two sodium/calcium exchanger gene products, NCX1 and NCX3, play a major role in the development of permanent focal cerebral ischemia. Stroke 35: 2566-2570.
5. Otsu, K., et al. 2005. Na^+/K^+ ATPase and its functional coupling with Na^+/Ca^{2+} exchanger in mouse embryonic stem cells during differentiation into cardiomyocytes. Cell Calcium 37: 137-151.
6. Egger, M., et al. 2005. Rapid turnover of the "functional" Na^+-Ca^{2+} exchanger in cardiac myocytes revealed by an antisense oligodeoxynucleotide approach. Cell Calcium 37: 233-243.
7. Wang, C., et al. 2005. Egr-1 negatively regulates expression of the sodium-calcium exchanger-1 in cardiomyocytes *in vitro* and *in vivo*. Cardiovasc. Res. 65: 187-194.
8. Katanosaka, Y., et al. 2005. Calcineurin inhibits Na^+/Ca^{2+} exchange in phenylephrine-treated hypertrophic cardiomyocytes. J. Biol. Chem. 280: 5764-5772.
9. SWISS-PROT/TrEMBL (P32418). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

SOURCE

NCX1 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of NCX1 precursor of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-30306 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NCX1 (C-15) is recommended for detection of NCX1, NCX2 and NCX3, precursor and mature of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

NCX1 (C-15) is also recommended for detection of NCX1, NCX2 and NCX3, precursor and mature in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of NCX1: 67 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, Y79 cell lysate: sc-2240 or SK-N-SH cell lysate: sc-2410.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Yang, H., et al. 2011. Distinct expression of the calcium exchangers, NCKX3 and NCX1, and their regulation by steroid in the human endometrium during the menstrual cycle. Reprod Sci. 18: 577-585.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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