SANTA CRUZ BIOTECHNOLOGY, INC.

NCX1 (P-13)-R: sc-30304-R

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.

CHROMOSOMAL LOCATION

Genetic locus: SLC8A1 (human) mapping to 2p22.1; Slc8a1 (mouse) mapping to 17 E3.

SOURCE

NCX1 (P-13)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an extracellular domain of NCX1 precursor of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-30304 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NCX1 (P-13)-R is recommended for detection of NCX1, precursor and mature of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 (P-13)-R is also recommended for detection of NCX1, precursor and mature in additional species, including equine, canine, bovine, avian and feline.

Suitable for use as control antibody for NCX1 siRNA (h): sc-44342, NCX1 siRNA (m): sc-44515, NCX1 shRNA Plasmid (h): sc-44342-SH, NCX1 shRNA Plasmid (m): sc-44515-SH, NCX1 shRNA (h) Lentiviral Particles: sc-44342-V and NCX1 shRNA (m) Lentiviral Particles: sc-44515-V.

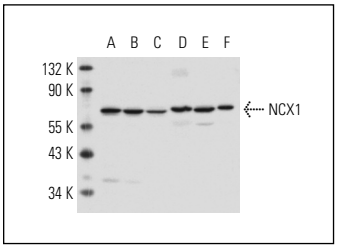
Molecular Weight of NCX1: 67 kDa.

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 goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



NCX1 (P-13)-R: sc-30304-R. Western blot analysis of NCX1 expression in MIA PaCa-2 (**A**), SK-N-SH (**B**), Y79 (**C**), PC-12 (**D**), NIH/3T3 (**E**) and C6 (**F**) whole cell lysates.

NCX1 (P-13)-R: sc-30304-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing membrane staining of cells in seminiferous ducts.

SELECT PRODUCT CITATIONS

1. Zhu, C., et al. 2007. Cyclophilin A participates in the nuclear translocation of apoptosis-inducing factor in neurons after cerebral hypoxia-ischemia. J. Exp. Med. 204: 1741-1748.
2. Kim, M.H., et al. 2009. Dexamethasone differentially regulates renal and duodenal calcium-processing genes in calbindin-D9k and -D28k knockout mice. Exp. Physiol. 94: 138-151.
3. Persson, A.K., et al. 2010. Sodium-calcium exchanger and multiple sodium channel isoforms in intra-epidermal nerve terminals. Mol. Pain 6: 84.
4. Okumura, R., et al. 2010. Sodium-calcium exchangers in rat ameloblasts. J. Pharmacol. Sci. 112: 223-230.
5. Tsumura, M., et al. 2010. Ca^{2+} extrusion via Na^{+}-Ca^{2+} exchangers in rat odontoblasts. J. Endod. 36: 668-674.

STORAGE

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

RESEARCH USE

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