SANTA CRUZ BIOTECHNOLOGY, INC.

NCX3 (C-15): sc-48896

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. NCX3 (Na^+/Ca^{2+}-exchange protein 3), also known as SLC8A3 (solute carrier family 8 (sodium/calcium exchanger), member 3), is a 927 amino acid multi-pass membrane protein belonging to the sodium/potassium/calcium exchanger family. Expressed as three aternatively spliced isoforms, NCX3 rapidly transports Ca^{2+} during excitation-contraction coupling. Containing two Calx-β domains, NCX3 is expressed in brain, skeletal muscle and retina. As a major functional sodium-calcium exchanger in osteoblasts, NCX3 is involved in the translocation of Ca^{2+} out of oseoblasts into calcifying bone matrix.

REFERENCES

1. Li, Z., et al. 1994. Cloning of the NCX2 isoform of the plasma membrane Na^+/Ca^{2+} exchanger. J. Biol. Chem. 269: 17434-17439.
2. Kikuno, R., et al. 1999. Prediction of the coding sequences of unidentified human genes. XIV. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 6: 197-205.
3. Li, L., et al. 2000. Calcineurin controls the transcription of Na^+/Ca^{2+} exchanger isoforms in developing cerebellar neurons. J. Biol. Chem. 275: 20903-20910.
4. Fraysse, B., et al. 2001. Expression of the Na^+/Ca^{2+} exchanger in skeletal muscle. Am. J. Physiol., Cell Physiol. 280: C146-C154.
5. Canitano, A., et al. 2002. Brain distribution of the Na^+/Ca^{2+} exchanger-encoding genes NCX1, NCX2 and NCX3 and their related proteins in the central nervous system. Ann. N.Y. Acad. Sci. 976394-976404.

CHROMOSOMAL LOCATION

Genetic locus: SLC8A3 (human) mapping to 14q24.2; Slc8a3 (mouse) mapping to 12 D1.

SOURCE

NCX3 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of NCX3 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-48896 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

NCX3 (C-15) is recommended for detection of NCX3 isoforms 1, 2 and 3 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); may cross-react with NCX1 and NCX2.

NCX3 (C-15) is also recommended for detection of NCX3 isoforms 1, 2 and 3 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for NCX3 siRNA (h): sc-44910, NCX3 siRNA (m): sc-44911, NCX3 shRNA Plasmid (h): sc-44910-SH, NCX3 shRNA Plasmid (m): sc-44911-SH, NCX3 shRNA (h) Lentiviral Particles: sc-44910-V and NCX3 shRNA (m) Lentiviral Particles: sc-44911-V.

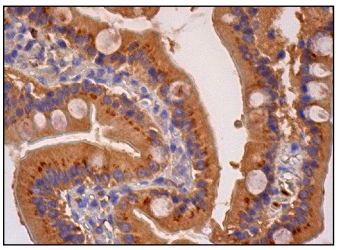
Molecular Weight of NCX3 precursor: 110-130 kDa.

Molecular Weight of degraded NCX3: 66 kDa.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



NCX3 (C-15): sc-48896. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Okumura, R., et al. 2010. Sodium-calcium exchangers in rat ameloblasts. J. Pharmacol. Sci. 112: 223-230.
2. Tsumura, M., et al. 2010. Ca^{2+} extrusion via Na^+-Ca^{2+} exchangers in rat odontoblasts. J. Endod. 36: 668-674.