

NCKX3 (S-15): sc-50129

BACKGROUND

Plasma membrane sodium/calcium exchangers are crucial for the maintenance of intracellular calcium homeostasis and the modulation of electrical conduction. Potassium-dependent sodium/calcium exchangers, such as NCKX3 (SLC24A3), presumably transport one intracellular calcium and one potassium ion in exchange for four extracellular sodium ions. NCKX3 is a deduced 644-amino acid protein which contains 11 transmembrane segments and 2 α -repeat regions, as well as 2 putative glycosylation sites at the N terminus and several putative phosphorylation sites in the central presumptive cytoplasmic loop. Human KCNX3 shares over 95% homology with mouse and rat NCKX3. Expression of NCKX3 is observed in almost all regions of the brain, with highest expression observed in the thalamus, hippocampus, amygdala and cerebellum. NCKX3 also demonstrates high expression in aorta, uterus and skeletal muscle tissues.

REFERENCES

1. Kraev, A., et al. 2001. Molecular cloning of a third member of the potassium-dependent sodium-calcium exchanger gene family, NCKX3. *J. Biol. Chem.* 276: 23161-23172.
2. Aneiros, E., et al. 2004. Modulation of Ca^{2+} signaling by Na^+/Ca^{2+} exchangers in mast cells. *J. Immunol.* 174: 119-130.
3. Schnetkamp, P.P. 2004. The SLC24 Na^+/Ca^{2+} - K^+ exchanger family: vision and beyond. *Pflugers Arch.* 447: 683-688.
4. Zhang, S., et al. 2005. Role of Na^+/Ca^{2+} exchange artery smooth muscle cells. *Am. J. Physiol., Cell Physiol.* 288: 245-252.
5. Dong, H., et al. 2006. Novel role for K free Ca^{2+} and contractility in arterial smooth muscle. *Am. J. Physiol. Heart Circ. Physiol.* 291: 1226-1235.

CHROMOSOMAL LOCATION

Genetic locus: SLC24A3 (human) mapping to 20p11.23; Slc24a3 (mouse) mapping to 2 G1.

SOURCE

NCKX3 (S-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NCKX3 of human origin.

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-50129 P, (100 μ g 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.

PROTOCOLS

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

APPLICATIONS

NCKX3 (S-15) is recommended for detection of NCKX3 (sodium/potassium/calcium exchanger 3 precursor) 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).

NCKX3 (S-15) is also recommended for detection of NCKX3 (sodium/potassium/calcium exchanger 3 precursor) in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for NCKX3 siRNA (h): sc-61160, NCKX3 siRNA (m): sc-61161, NCKX3 shRNA Plasmid (h): sc-61160-SH, NCKX3 shRNA Plasmid (m): sc-61161-SH, NCKX3 shRNA (h) Lentiviral Particles: sc-61160-V and NCKX3 shRNA (m) Lentiviral Particles: sc-61161-V.

Molecular Weight of NCKX3: 72 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) 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. Lee, G.S., et al. 2009. K^+ -dependent Na^+/Ca^{2+} exchanger 3 is involved in renal active calcium transport and is differentially expressed in the mouse kidney. *Am. J. Physiol. Renal Physiol.* 297: F371-F379.
2. Shumilina, E., et al. 2010. Regulation of calcium signaling in dendritic cells by 1,25-dihydroxyvitamin D_3 . *FASEB J.* 24: 1989-1996.
3. 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.

RESEARCH USE

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