ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Sodium Calcium Exchanger 2 (NCX2) Antibodies

Cat. # NCX21-P	Rat NCX2 control/blocking Peptide	**SIZE**: 100 ug
Cat. # NCX21-S	Rabbit Anti-rat NCX2 antiserum	**SIZE**: 100 ul
Cat. # NCX21-A	Rabbit Anti-rat NCX2 IgG (affinity pure)	**SIZE**: 100 ug

Ca2+ plays a critical role in intracellular signaling. Intracellular Ca2+ levels are tightly controlled by continuos removal of Ca2+ via ATP-driven **Ca2+ pump** in the endoplasmic reticulum and plasma membrane, and Ca2+ transport system, the **Na+/Ca2+ exchangers (NCX)**, in the plasma membrane. NCX can move Ca2+ either into or out of cells, depending on the net Na+, Ca2+, and K+ gradient across the membrane. In most cells, 3 Na+ are exchanged for 1 Ca2+. In mammals, at least 5 distinct genes code for the exchangers: Three **NCX (NCX1, NCX2, and NCX3),** and two in the **NCKX family (NCKX1 and NCKX2**). NCX share significant sequence homology (~70%), display 11 TM domains, a large central, intracellular hydrophilic regulatory loop between TM5 and 6, extracellular N-terminus and cytoplasmic C-terminus. The N-terminal signal peptide is cleaved off from the mature exchanger protein.

NCX1 (rat 971 aa, human 970 aa, mouse 970 aa) is most prominently expressed in the heart where it plays a major role in excitation-contraction coupling, but is also present in most other tissues. Alternative spicing of NCX1/NACA1 produces numerous tissue specific isoforms (heart NACA1; Kidney NACA2, -3, and –7; brain NACA4-6). **NCX2** (rat 921 aa) is restricted to brain and skeletal muscle. **NCX3** (rat 927 aa) shares 73-75% with NCX1 and NCX2. NCX3 is also restricted to brain and muscle.

FUNCTION: Rapidly transports Ca(2+) during excitation-contraction coupling. Ca(2+) is extruded from the cell during relaxation so as to prevent overloading of intracellular stores
SUBCELLULAR LOCATION: Membrane; Multi-pass membrane protein
SIMILARITY: Belongs to the sodium/potassium/calcium exchanger family. SLC8 subfamily.

Protein name Sodium/calcium exchanger 2 [Precursor]
Synonym Na(+)/Ca(2+)-exchange protein 2
Gene name Name: Slc8a2 ; Synonyms: Ncx2

Source of Antigen and Antibodies

Antigen	22-aa peptide of Rat (gene accession # P48768) **NCX2** ; **Designated (NCX21-P or control peptide).** conjugated to KLH; Epitope location~N-terminus, Cytoplasmic
Ab Host/type	Rabbit, polyclonal; Unpurified antiserum (cat #NCX21-S) Aff pure IgG (**cat #NCX21-A**)
2-ab	Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied in Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage
Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..
Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure antibody using ECL technique).

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:10-50K for neat serum and 0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: Not tested. We recommend the use of affinity purified antibody at 5-20 ug/ml in paraformaldehyde fixed sections of tissues.

Specificity & Cross-reactivity

The rat NCX21-P control peptide is 100% conserved in mouse, and 81% in human NCX2. Antibody cross-reactivity in various species has not been studied. The **NCX22-P** Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at: www.4adi.com\data\abblock.html).

General References: (1). LI Z et al (1994) J Biol. Chem. 276, 1743417439; Nicoll DA et al (1996) J Biol. Chem. 271, 24914-24921; Blaustein and Lederer (1999) Physiol Rev. 79, 763-854 (review).

Citation of ADI antibodies for NCX2:
Pignataro G (2004) Two Sodium/Calcium Exchanger Gene Products, NCX1 and NCX3, Play a Major Role in the Development of Permanent Focal Cerebral Ischemia, Stroke, Oct 2004 in press (WB)

*This product is for In vitro research use only.

Related material available from ADI

Antibodies CLC1-7 and CLC-K1; KCCL1-3; AQP1-9 and RUT; OCT/OCTN1-3, OAT1-3, OATK1/K2, AE1-3, and NCKX1-3

Recycle your blot in Just 5-10 min at room temp. (use the same strip for various NCX)
NCX21-S-A-P 70904J

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com
☎ (800) 786-5777; (210) 561-9515; **Fax**: (210) 561-9544; **Web Site**: www.4adi.com