

Product Specification Sheet

**Sodium Calcium Exchanger 2 (NCX2) Antibodies**

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

Ca<sup>2+</sup> plays a critical role in intracellular signaling. Intracellular Ca<sup>2+</sup> levels are tightly controlled by continuous removal of Ca<sup>2+</sup> via ATP-driven **Ca<sup>2+</sup> pump** in the endoplasmic reticulum and plasma membrane, and Ca<sup>2+</sup> transport system, the **Na<sup>+</sup>/Ca<sup>2+</sup> exchangers (NCX)**, in the plasma membrane. NCX can move Ca<sup>2+</sup> either into or out of cells, depending on the net Na<sup>+</sup>, Ca<sup>2+</sup>, and K<sup>+</sup> gradient across the membrane. In most cells, 3 Na<sup>+</sup> are exchanged for 1 Ca<sup>2+</sup>. 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 splicing 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**

<b>Antigen</b>	22-aa peptide of Rat (gene accession # P48768) <b>NCX2</b> ; <b>Designated (NCX21-P or control peptide)</b> . conjugated to KLH; Epitope location~N-terminus, Cytoplasmic
<b>Ab Host/type</b>	Rabbit, polyclonal; Unpurified antiserum (cat #NCX21-S) Aff pure IgG (cat #NCX21-A)
<b>2-ab</b>	Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
<b>-ve control</b>	# 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](http://www.4adi.com/data/abblock.html)).

**General References:** (1). LI Z et al (1994) J Biol. Chem. 276, 17434-17439; 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

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