

Product Specification Sheet

**C28R2 (Ca<sup>++</sup>-ATPase Autoinhibitory Domain) Antibodies**

Cat. # C28R21-P	Human C28R2 Control Peptide #1	<b>SIZE:</b> 100 ug
Cat. # C28R21-S	Rabbit Anti-Human C28R2 antiserum #1	<b>SIZE:</b> 100 ul
Cat. # C28R21-A	Rabbit Anti-Human C28R2, Ig G#1 aff 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. 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)**. The N-terminal signal peptide is cleaved off from the mature exchanger protein. NCX contains a highly basic region in the large hydrophilic, intracellular loop called **XIP (Exchange inhibitory peptide)**; RRLLFYKYVYKRYRAGKQRG 20 aa), that inhibits Na-Ca<sup>+</sup> exchange in cardiac sarcolemmal vesicles and in other cells. Little or no sequence identity is found between the NCX and the Ca-pump. However, XIP also inhibits the Ca pumps with more or less same efficiency as **C28R2** peptide sequence (LRRGQILWFRGLNRIQTQIRVVKAFRSS, 28 aa) corresponding to the autoinhibitory domain of Ca-pump. **C28R2** is located in within the cytoplasmic, C-terminal domain of Ca<sup>++</sup>-ATPases. The C28R2 sequence is very conserved in various isoforms among various species.

**Source of Antigen and Antibodies**

<b>Antigen</b>	28aa peptide of Human C28R2 ; <b>Designated (C28R21-P or control peptide) conjugated to KLH; Epitope location~ C-terminal, Cytoplasmic domain</b>
<b>Ab Host/type</b>	Rabbit, polyclonal Unpurified antiserum (cat #C28R21-S) Aff pure IgG (cat #C28R21-A) purified over antigen-agarose column
<b>2-ab</b>	<b>Goat Anti-rabbit IgG-HRP</b> cat # 20320 (AP, biotin, FITC conjugates also available)
<b>-ve control IgG</b>	<b># 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control</b>

**Form & Storage of Antibodies/Peptide Control**

**Antiserum (unpurified)**  
100ul solution lyophilized powder  
Supplied 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 -200C and powder at 40C 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.

**Shipping:** 4oC for solutions and room temp for powder

**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 28 AA human C28R2 sequence is 100% conserved in human Ca<sup>++</sup>-ATPase isoforms 1, 2, 3b, 96% in 1b, 92% in 4, and 85% in 3a/3b. It is also 100% conserved in mouse, and rat isoform 2. A high degree of conservation (77-100%) is also seen in Ca<sup>++</sup>-ATPase isoforms from many other species. Antibody cross-reactivity of C28R2 or its exchange inhibitory properties in various species has not been studied. 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 the web site).

**General References:**

- Street VA (1998) Nat. Genet. 19, 390; Heim R (1992) Eur. J. Biochem. 205, 330; Brandt P (1992) Genomics 14, 484; Latif F (1993) Cancer Res. 53, 861; Keeton TP (1995) Biochem. J. 306, 779; shull GE (1988) JBC 263, 8646; Brown BJ (1996) BBA 1283, 10; Hale CC (1997) BBRC 236, 113; Xu W (1997) Arch. Biochem. Biophys. 341, 273

**Citations of ADI's antibodies for C28R22:**

Zhong, Ning 2001, J. Neurosci. 21: 9598-9607, Roles for Mitochondrial and Reverse Mode Na<sup>+</sup>/Ca<sup>2+</sup> Exchange and the Plasmalemma Ca<sup>2+</sup> ATPase in Post-Tetanic Potentiation at Crayfish Neuromuscular Junctions

\*This product is for In vitro research use only.

**Related material available from ADI**

Antibodies NCX1-3/NCKX1-3, CLC1-7/CLC-K1; KCC1-3; AQP1-9 and RUT; OCT1-3, OAT1-3, AE1-4, and NCKX1-3

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