

**Calcium Transport Protein 2 (CaT-2/ECAC1) Antibodies**

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|---|--|---------------------|
| <input type="checkbox"/> Cat. # CAT21-S | Rabbit Anti-Rat CaT-2 antiserum #1     | <b>SIZE:</b> 100 ul |
| <input type="checkbox"/> Cat. # CAT21-A | Rabbit Anti-Rat CaT-2 IgG#1 (aff pure) | <b>SIZE:</b> 100 ug |
| <input type="checkbox"/> Cat. # CAT21-P | Rat CaT-2 Control/blocking peptide #1  | <b>SIZE:</b> 100 ug |

Calcium (Ca<sup>2+</sup> or Ca) is the most abundant cation and it is required for many physiological activities such as bone formation and it acts as a second messenger in signal transduction. Extracellular Ca<sup>+</sup> levels are sensed and regulated by Calcium Sensing receptor (CASR). Ca<sup>++</sup> absorption in intestine and its reabsorption in kidney are carried out by Ca<sup>++</sup> Transport (CaT) proteins, **CaT-1**, **CaT-2** or **Epithelial Ca Channel (ECAC1/ECAC2/CaT-Like (CaT-L)** proteins. **CaT2** (rat 723 aa; human 729 aa, chromosome 7q35) is also known as **ECAC1** or **TRPV5**) is ~75% homologous with CAT1. In contrast to CaT-1, CaT-2 is exclusively expressed in kidney and absent in intestine, brain, heart, liver, lung, skeletal muscle, spleen, thymus, testis, adrenal gland. It co-localizes with calbindin D<sub>28K</sub> and Na<sup>+</sup> channel exchanger 1 (NCX1). CaT-2 mediates saturable apical Ca<sup>++</sup> uptake by the cells of distal convoluted tubule and connecting segment of nephron where active re-absorption of Ca<sup>++</sup> takes place via transcellular route. CaT-2 has moderate abilities to transport Sr<sup>++</sup> and Ba<sup>++</sup>. A strong inhibition of CaT-2 mediated Ca<sup>++</sup> transport by Cd<sup>++</sup> leads to hypercalciurea and renal stone formation.

**Source of Antigen and Antibodies**

|                     |  |
|---------------------|--|
| <b>Antigen</b>      | 20-aa peptide of rat CaT-2/ECAC1 (1); Designated (CAT21-P or control peptide). Epitope location ~ cytoplasmic C-terminus.                          |
| <b>Ab Host/type</b> | Rabbit, Polyclonal unpurified antiserum (Cat # CAT21-S) and IgG purified over antigen-agarose (Cat # CAT21-A) supplied in PBS+0.1% BSA+0.05% azide |
| <b>2-Ab</b>         | Cat # 20320, goat anti-rabbit IgG-HRP (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 20°C and powder at 4°C or -20°C..

**Long-term:** at -20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

**Stability:** 6-12 months at -20°C or below.

**Shipping:** 4°C 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 using Chemiluminescence technique). The expected size of Cat-2 is ~85 kDa. However, posttranslational modification may alter its size depending upon the species and cell type.

**ELISA** (1:10K-1:100K; using 50-100 ng of control peptide/well).

**Histochemistry & Immunofluorescence:** We recommend the use of affinity pure antibody at 2-20 ug/ml. (see published refs in 2).

**Specificity & Cross-reactivity**

The CAT21-P peptide is 90% conserved in rabbit, 80% in human and 85% in mouse Cat-2/ECAC1-1. No significant sequence homology of CAT11-P is seen with CaT-1 or other proteins. Antibody reactivity in various species is not known. 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:** (1) Peng et al. (2000) J. Biol. Chem. 275, 28186; Muller D et al (2000) Genomics 67, 48-53; Muller D et al (2000) BBRC 275, 47-52

**(2) Citations of ADI's Antibodies** (see web site for updated list)

Lee C-T, 2004, AJP Renal Physiol, 287: 1164 – 1170, mice kidney, 4% PF, IF

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

**Related materials available from ADI**

Antibodies: CaT-1/2; Calbindins, S100, Parvalbumin, Calretinin

CAT21-S-A-P

71216S