ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Life Technologies™ — Your Molecular & Cell Technology Partner

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

□ Cat. # CAT21-S	Rabbit Anti-Rat CaT-2 antiserum #1	**SIZE**: 100 ul
□ Cat. # CAT21-A	Rabbit Anti-Rat CaT-2 IgG#1 (aff pure)	**SIZE**: 100 ug
□ Cat. # CAT21-P	Rat CaT-2 Control/blocking peptide #1	**SIZE**: 100 ug

Calcium (Ca+2 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+- levels are sensed and regulated by Calcium Sensing receptor (CASR). Ca^{++} absorption in intestine and its reabsorption in kidney are carried out by Ca^{++} 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_{28K} and Na^{+} channel exchanger 1 (NCX1). CaT-2 mediates saturable apical Ca^{++} uptake by the cells of distal convoluted tubule and connecting segment of nephron where active re-absorption of Ca^{++} takes place via transcellular route. CaT-2 has moderate abilities to transport Sr^{++} and Ba^{++}. A strong inhibition of CaT-2 mediated Ca^{++} transport by Cd^{++} leads to hypercalciurea and renal stone formation.

Source of Antigen and Antibodies

Antigen	20-aa peptide of rat CaT-2/ECAC1 (1); Designated (CAT21-P or control peptide). Epitope location ~ cytoplasmic C-terminus .
Ab Host/type	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
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (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 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

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