ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Life Technologies™ Your Molecular & Cell Technology Partner

Calcium Transport Protein 1 (CaT-1/ECAC2) Antibodies

Cat. # CAT11-S	Rabbit Anti-Rat CaT-1 antiserum #1	**SIZE**: 100 ul
Cat. # CAT11-A	Rabbit Anti-Rat CaT-1 IgG #1 (aff pure)	**SIZE**: 100 ug
Cat. # CAT11-P	Rat CaT-1 Control/blocking peptide	**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). When Ca levels are limiting then it must be taken up by active, transcellular pathways comprising (1) Ca^{++} entry across apical membrane, (2) cytosolic transport of Ca^{++} across the cell form apical to basolateral membrane facilitated by a family of low mol wt Calcium binding proteins (CABPs) that include vitamin D3-dependent **Ca^{++} binding proteins (calbindin-D9k, Calbindin-28k, Calretinin, Parvalbumin, S100, calmodulin)** and finally (3) an active extrusion of Ca^{++} through basolateral membrane mediated by **Ca^{++}-ATPase** and **Na^{+}-Ca^{++} exchangers (NCX).** 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.

CAT1 (rat/mouse 727 aa; human 725 aa, chromosome 7q33-q34; ~85 kDa) is also known as **ECAC2**, CAT-like (**CATL**) or **TRPV6** (transient receptor potential cation channel, subfamily V, member 6) contains a cytoplasmic N-terminus, 6 ankyrin repeat domains, 6 transmembrane domains, an extracellular pore region between TM5-6, and cytoplasmic C-terminus. CaT-1 shows 75% sequence identity to epithelial Ca^{++} channel (ECaC) protein from rabbit kidney. In rat, CaT-1 transcript (3-Kb) is expressed in duodenum, proximal jejunum cecum and colon but not in kidney; whereas ECaC in rabbit is expressed in apical cell membranes in distal part of nephron (kidney), duodenum, jejunum and placenta.

Source of Antigen and Antibodies

Antigen	18-aa peptide from **rat CaT-1/ECAC2 (1)**; **Designation (#CAT11-P, control/blocking peptide**) conjugated to KLH. Epitope location ~ N-terminus
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#**Cat11**-S) and IgG, purified over antigen-agarose (Cat # **CAT11**-A)
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 (aspurified)
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-1 is ~83 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: not tested. We recommend the use of affinity pure antibody at 2-20 ug/ml.

Specificity & Cross-reactivity

Rat CAT11-P peptide is 100% conserved in mouse, 88% in humans and 94% in Cat-1/htrp8A and htrp8b proteins. No significant sequence homology of CAT11-P is seen with CaT-2 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) Wissenbach et al. (2001) J. Biol. Chem. 276, 19461; Peng et al. (2000) J. Biol. Chem. 275, 28186; Peng et al. (1999) J. Biol. Chem. 274, 22739; Hoederop et al. (1999) J. Biol. Chem. 274, 8375.; Peng et al (2000) BBRC 278, 326;

*This product is for In vitro research use only.

Related materials available from ADI

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

CAT11-S-A-P 100217A

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