

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

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

**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<sup>++</sup> 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**

<b>Antigen</b>	18-aa peptide from <b>rat CaT-1/ECAC2 (1); Designation (#CAT11-P, control/blocking peptide)</b> conjugated to KLH. Epitope location ~ N-terminus
<b>Ab Host/type</b>	Rabbit, Polyclonal unpurified antiserum (# <b>Cat11-S</b> ) and IgG, purified over antigen-agarose (Cat # <b>CAT11-A</b> )
<b>2-Ab</b>	Cat # 20320, <b>goat anti-rabbit IgG-HRP</b> (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**

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**