

Product Specification Sheet

Paracellin-1 (PCLN-1) Antibodies

Cat. # PCLN11-P	Human Paracellin-1 control/blocking Peptide # 1	SIZE: 100 ug
Cat. # PCLN11-S	Rabbit Anti-Human Paracellin-1 antiserum # 1	SIZE: 100 ul
Cat. # PCLN11-A	Rabbit Anti-Human Paracellin-1 IgG, aff. pure # 1	SIZE: 100 ug

Reconstitute powder in PBS at 1mg/ml

Magnesium as a cofactor is required in many cellular activities. Mg²⁺ reabsorption in the kidney is mediated primarily by a poorly understood paracellular pathway (passage of solutes between the cells) in the thick ascending limb of Henle (TAL). Tight junctions constitute the barrier to paracellular conductance. Familial hypomagnesaemia with hypercalciuria and nephrocalcinosis (FHHNC, MIM 248250) is a complex renal tubular disorder characterized by hypomagnesaemia, hypercalciuria, advanced nephrocalcinosis, hyposthenuria and progressive renal failure. The mode of inheritance is autosomal recessive. A primary defect in the reabsorption of magnesium in the TAL has been proposed to be essential in FHHNC pathophysiology. Recently, mutations in the gene **paracellin-1 (PCLN-1/Claudin-16)** have been identified as the underlying genetic defect in FHHNC. Null mutation of PCLN-1/Claudin-16 has been shown to produce chronic interstitial nephritis in cattle. PCLN-1 gene codes for a protein of 305 aa (chromosome 3q27), with four TM domains and intracellular NH₂- and COOH-termini. PCLN-1 belongs to the Claudin family of proteins. It is 10-18% related with claudins. PCLN-1 is only expressed in tight junction of TAL implicated in Mg²⁺-reabsorption.

FUNCTION: Plays a major role in tight junction-specific obliteration of the intercellular space, through calcium-independent cell-adhesion activity.

SUBCELLULAR LOCATION: Cell junction, tight junction; Multi-pass membrane protein.

SIMILARITY: Belongs to the claudin family.

Protein name Claudin-16

Synonyms Paracellin-1, PCLN-1

Gene name Name: CLDN16; Synonyms: PCLN1

Source of Antigen and Antibodies

Antigen	17-aa peptide of Human PCLN-1; (protein accession #Q9Y5I7, refs 1) (designated as PCLN11-P, control peptide) conjugated to KLH; Epitope location ~ C-terminus
Ab Host/type	Rabbit, polyclonal Aff pure IgG1 (cat #PCLN11-A) purified over the antigen column
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

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 (1:1-:1:3K) 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 testing of affinity pure antibodies (2-10 ug/ml) for this purpose.

Specificity & Cross-reactivity

The human PCLN11-P is 70% conserved in bovine PCLN-1. Antibody cross-reactivity 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

General References:

(1). Simon DB et al (1999) Science 285, 103-106; Wong V and Goodenough DA (1999) Science 285, 62; Ohba Y et al (2000) Genomics 68, 229-36; Weber S et al (2000) Eur J Hum Genet 8, 414-22.

Citation of ADI's Cx antibodies

Please see the list at: www.4adi.com/refs/cxrefs.html

*This product is for In vitro research use only.

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