

# claudin-12 (W-18): sc-69356

## BACKGROUND

The claudin superfamily consists of many structurally related proteins that are important structural and functional components of tight junctions. Claudin-12, also known as CLDN12, is a 244 amino acid multi-pass membrane protein that is expressed in the brain, duodenum, jejunum, ileum, and colon. Claudin-12 localizes to cell junctions and may be involved in tight junction integrity by regulating hyperammonemia. Ammonia can alter brain capillary endothelial cell gene expression and transporter function. Claudin-12 is upregulated in enterocytes through vitamin D receptors which strongly suggest that claudin-12 forms paracellular Ca<sup>2+</sup> channels in intestinal epithelia and may be critical for vitamin D-dependent calcium homeostasis.

## REFERENCES

- Acharya, P., Beckel, J., Ruiz, W.G., Wang, E., Rojas, R., Birder, L. and Apodaca, G. 2004. Distribution of the tight junction proteins ZO-1, Occludin, and claudin-4, -8, and -12 in bladder epithelium. *Am. J. Physiol. Renal Physiol.* 287: F305-F318.
- Fujita, H., Chiba, H., Yokozaki, H., Sakai, N., Sugimoto, K., Wada, T., Kojima, T., Yamashita, T. and Sawada, N. 2006. Differential expression and subcellular localization of claudin-7, -8, -12, -13, and -15 along the mouse intestine. *J. Histochem. Cytochem.* 54: 933-944.
- Gröne, J., Weber, B., Staub, E., Heinze, M., Klamann, I., Pilarsky, C., Hermann, K., Castanos-Velez, E., Röpcke, S., Mann, B., Rosenthal, A. and Buhr, H.J. 2007. Differential expression of genes encoding tight junction proteins in colorectal cancer: frequent dysregulation of claudin-1, -8 and -12. *Int. J. Colorectal Dis.* 22: 651-659.
- Ohtsuki, S., Sato, S., Yamaguchi, H., Kamoi, M., Asashima, T. and Terasaki, T. 2007. Exogenous expression of claudin-5 induces barrier properties in cultured rat brain capillary endothelial cells. *J. Cell. Physiol.* 210: 81-86.
- Belanger, M., Asashima, T., Ohtsuki, S., Yamaguchi, H., Ito, S. and Terasaki, T. 2007. Hyperammonemia induces transport of taurine and creatine and suppresses claudin-12 gene expression in brain capillary endothelial cells *in vitro*. *Neurochem. Int.* 50: 95-101.

## CHROMOSOMAL LOCATION

Genetic locus: CLDN12 (human) mapping to 7q21.13; Cldn12 (mouse) mapping to 5 A1.

## SOURCE

claudin-12 (W-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal extracellular domain of claudin-12 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-69356 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

claudin-12 (W-18) is recommended for detection of claudin-12 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

claudin-12 (W-18) is also recommended for detection of claudin-12 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for claudin-12 siRNA (h): sc-72915, claudin-12 siRNA (m): sc-72916, claudin-12 shRNA Plasmid (h): sc-72915-SH, claudin-12 shRNA Plasmid (m): sc-72916-SH, claudin-12 shRNA (h) Lentiviral Particles: sc-72915-V and claudin-12 shRNA (m) Lentiviral Particles: sc-72916-V.

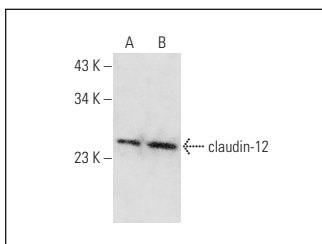
Molecular Weight of claudin-12: 27 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



claudin-12 (W-18): sc-69356. Western blot analysis of claudin-12 expression in HeLa (A) and Jurkat (B) whole cell lysates.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.