

claudin-12 (H-49): sc-98608

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^{2+} channels in intestinal epithelia and may be critical for vitamin D-dependent calcium homeostasis.

REFERENCES

- Acharya, P., et al. 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., et al. 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., et al. 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., et al. 2007. Exogenous expression of claudin-5 induces barrier properties in cultured rat brain capillary endothelial cells. *J. Cell. Physiol.* 210: 81-86.
- Belanger, M., et al. 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.
- Shimizu, F., et al. 2008. Peripheral nerve pericytes originating from the blood-nerve barrier expresses tight junctional molecules and transporters as barrier-forming cells. *J. Cell. Physiol.* 217: 388-399.

CHROMOSOMAL LOCATION

Genetic locus: CLDN1 (human) mapping to 7q21.13; Cldn12 (mouse) mapping to 5 A1.

SOURCE

claudin-12 (H-49) is a rabbit polyclonal antibody raised against amino acids 196-244 mapping at the C-terminus of claudin-12 of human origin.

PRODUCT

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

STORAGE

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

APPLICATIONS

claudin-12 (H-49) 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 μ g per 100-500 μ g 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).

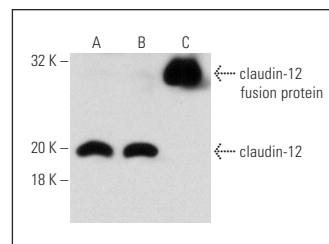
claudin-12 (H-49) is also recommended for detection of claudin-12 in additional species, including equine, canine, bovine and porcine.

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.

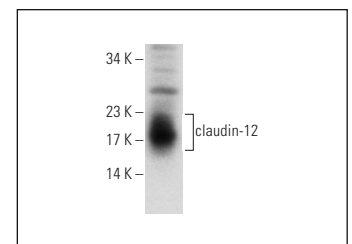
Molecular Weight of claudin-12: 27 kDa.

Positive Controls: mouse liver extract: sc-2256, T24 cell lysate: sc-2292 or NTERA-2 cl.D1 whole cell lysate: sc-364181.

DATA



claudin-12 (H-49): sc-98608. Western blot analysis of claudin-12 expression in T24 (A) and NTERA-2 cl.D1 (B) whole cell lysates and human recombinant claudin-12 fusion protein (C).



claudin-12 (H-49): sc-98608. Western blot analysis of claudin-12 expression in mouse liver tissue extract.

SELECT PRODUCT CITATIONS

- Charoenphandhu, N., et al. 2009. Two-step stimulation of intestinal Ca^{2+} absorption during lactation by long-term prolactin exposure and suckling-induced prolactin surge. *Am. J. Physiol. Endocrinol. Metab.* 297: E609-E619.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.