

# claudin-19 (H-4): sc-365968

## BACKGROUND

The claudin superfamily consists of many structurally related proteins in humans. These proteins are important structural and functional components of tight junctions in paracellular transport. Claudins are located in both epithelial and endothelial cells in all tight junction-bearing tissues. Three classes of proteins are known to localize to tight junctions, including the claudins, occludin and junction adhesion molecules. Claudins, which consist of four transmembrane domains and two extracellular loops, make up tight junction strands. Claudin expression is often highly restricted to specific regions of different tissues and may have an important role in transcellular transport through tight junctions. claudin-19 is a 224 amino acid multi-pass membrane protein that belongs to the claudin family and is expressed as two isoforms due to alternative splicing events. Defects in the gene encoding claudin-19 are the cause of hypomagnesemia renal with ocular involvement (HOMGO), a renal disease characterized by hypomagnesemia, hypercalciuria and nephrocalcinosis.

## REFERENCES

1. Fanning, A.S., et al. 1999. Transmembrane proteins in the tight junction barrier. *J. Am. Soc. Nephrol.* 10: 1337-1345.
2. Fujita, K., et al. 2000. Clostridium perfringens enterotoxin binds to the second extracellular loop of claudin-3, a tight junction integral membrane protein. *FEBS Lett.* 476: 258-261.
3. Heiskala, M., et al. 2001. The roles of claudin superfamily proteins in paracellular transport. *Traffic* 2: 93-98.
4. Nishiyama, R., et al. 2001. IL-2 receptor  $\beta$  subunit dependent and independent regulation of intestinal epithelial tight junctions. *J. Biol. Chem.* 276: 35571-35580.
5. Anderson, J.M. 2001. Molecular structure of tight junctions and their role in epithelial transport. *News Physiol. Sci.* 16: 126-130.
6. Rahner, C., et al. 2001. Heterogeneity in expression and subcellular localization of claudins 2, 3, 4, and 5 in the rat liver, pancreas and gut. *Gastroenterology* 120: 411-422.

## CHROMOSOMAL LOCATION

Genetic locus: CLDN19 (human) mapping to 1p34.2; Cldn19 (mouse) mapping to 4 D2.1.

## SOURCE

claudin-19 (H-4) is a mouse monoclonal antibody raised against amino acids 160-224 mapping at the C-terminus of claudin-19 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain 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-19 (H-4) is recommended for detection of claudin-19 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for claudin-19 siRNA (h): sc-88300, claudin-19 siRNA (m): sc-142364, claudin-19 shRNA Plasmid (h): sc-88300-SH, claudin-19 shRNA Plasmid (m): sc-142364-SH, claudin-19 shRNA (h) Lentiviral Particles: sc-88300-V and claudin-19 shRNA (m) Lentiviral Particles: sc-142364-V.

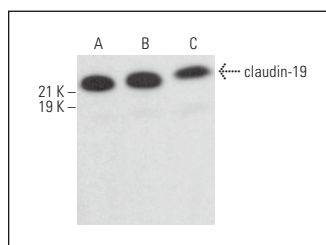
Molecular Weight of claudin-19: 22 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, NIH/3T3 whole cell lysate: sc-2210 or PC-12 cell lysate: sc-2250.

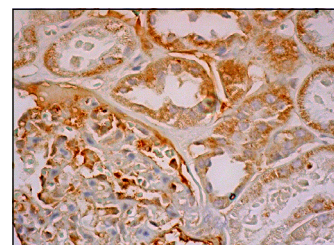
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



claudin-19 (H-4): sc-365968. Western blot analysis of claudin-19 expression in NIH/3T3 (A), Caki-1 (B) and PC-12 (C) whole cell lysates.



claudin-19 (H-4): sc-365968. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in glomeruli and cells in tubules.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.