

# claudin-1 (A-9): sc-166338

## 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-1 is a multi-pass membrane protein that is expressed at high levels in kidney and liver and at lower levels in spleen, heart, brain, lung and testis. Defects in the gene encoding claudin-1 are the cause of ichthyosis-sclerosing cholangitis neonatal syndrome (NISCH), an autosomal recessive syndrome characterized by vulgar type ichthyosis, scalp hypotrichosis, scarring alopecia and sclerosing cholangitis.

## CHROMOSOMAL LOCATION

Genetic locus: CLDN1 (human) mapping to 3q28; Cldn1 (mouse) mapping to 16 B2.

## SOURCE

claudin-1 (A-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 168-207 at the C-terminus of claudin-1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

claudin-1 (A-9) is available conjugated to agarose (sc-166338 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166338 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166338 PE), fluorescein (sc-166338 FITC), Alexa Fluor® 488 (sc-166338 AF488), Alexa Fluor® 546 (sc-166338 AF546), Alexa Fluor® 594 (sc-166338 AF594) or Alexa Fluor® 647 (sc-166338 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166338 AF680) or Alexa Fluor® 790 (sc-166338 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166338 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

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

## PROTOCOLS

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

## APPLICATIONS

claudin-1 (A-9) is recommended for detection of claudin-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), 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).

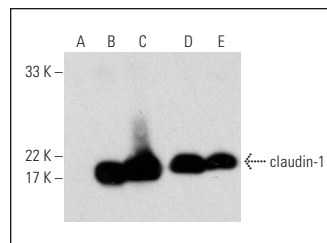
claudin-1 (A-9) is also recommended for detection of claudin-1 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for claudin-1 siRNA (h): sc-43040, claudin-1 siRNA (m): sc-43041, claudin-1 shRNA Plasmid (h): sc-43040-SH, claudin-1 shRNA Plasmid (m): sc-43041-SH, claudin-1 shRNA (h) Lentiviral Particles: sc-43040-V and claudin-1 shRNA (m) Lentiviral Particles: sc-43041-V.

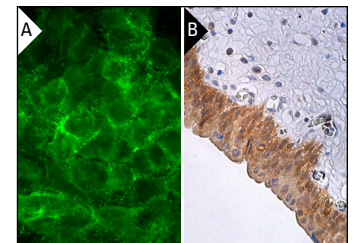
Molecular Weight of claudin-1: 22 kDa.

Positive Weight: claudin-1 (h): 293T Lysate: sc-113827, SCC-4 whole cell lysate: sc-364363 or T24 cell lysate: sc-2292.

## DATA



claudin-1 (A-9) HRP: sc-166338 HRP. Direct western blot analysis of claudin-1 expression in non-transfected 293T: sc-117752 (A), human claudin-1 transfected 293T: sc-113827 (B), SCC-4 (C), RT-4 (D) and T24 (E) whole cell lysates.



claudin-1 (A-9): sc-166338. Immunofluorescence staining of formalin-fixed Hep G2 cells showing membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic staining of urothelial cells (B).

## SELECT PRODUCT CITATIONS

- Michel, D., et al. 2005. PATJ connects and stabilizes apical and lateral components of tight junctions in human intestinal cells. *J. Cell Sci.* 118: 4049-4057.
- Lin, S.S., et al. 2018. Alterations in the gut barrier and involvement of Toll-like receptor 4 in murine postoperative ileus. *Neurogastroenterol. Motil.* 30: e13286.
- Koch, F., et al. 2019. Heat stress directly impairs gut integrity and recruits distinct immune cell populations into the bovine intestine. *Proc. Natl. Acad. Sci. USA* 116: 10333-10338.
- Wang, H., et al. 2020. Modulation of gut microbiota contributes to effects of intensive insulin therapy on intestinal morphological alteration in high-fat-diet-treated mice. *Acta Diabetol.* 57: 455-467.

## RESEARCH USE

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