

claudin-3 (C-20): sc-17660

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 molecule (JAM). Claudins, which consist of four trans-membrane domains and two extracellular loops, make up tight junction strands. Claudin expression is highly restricted to specific regions of different tissues and variations of Claudin expression may have an important role in transcellular transport through tight junctions. In rat liver, claudin-3 is uniformly expressed, whereas in the pancreas, claudin-3 is expressed in junctions of the duct epithelia and junctions of acinar cells. Claudin-3 binds the peptide toxin *Clostridium perfringens* enterotoxin (CPE) at the cell surface via the second extracellular loop of claudin-3. The gene encoding human claudin-3 maps to chromosome 7q11.23.

REFERENCES

1. Fanning, A.S., Mitic, L.L. and Anderson, J.M. 1999. Transmembrane proteins in the tight junction barrier. *J. Am. Soc. Nephrol.* 10: 1337-1345.
2. Fujita, K., Katahira, J., Horiguchi, Y., Sonoda, N., Furuse, M. and Tsukita, S. 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., Peterson, P.A. and Yang, Y. 2001. The roles of claudin superfamily proteins in paracellular transport. *Traffic* 2: 93-98.
4. Nishiyama, R., Sakaguchi, T., Kinugasa, T., Gu, X., MacDermott, R.P., Podolsky, D.K. and Reinecker, H.C. 2001. IL-2 receptor β 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.

CHROMOSOMAL LOCATION

Genetic locus: CLDN3 (human) mapping to 7q11.23; Cldn3 (mouse) mapping to 5 G2.

SOURCE

claudin-3 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of claudin-3 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.

Blocking peptide available for competition studies, sc-17660 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

claudin-3 (C-20) is recommended for detection of claudin-3 of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for claudin-3 siRNA (h): sc-43042, claudin-3 shRNA Plasmid (h): sc-43042-SH and claudin-3 shRNA (h) Lentiviral Particles: sc-43042-V.

Molecular Weight of claudin-3: 23 kDa.

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) 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.

SELECT PRODUCT CITATIONS

1. McLaughlin, J., Padfield, P.J., Burt, J.P., O'Neill, C.A. 2004. Ochratoxin A increases permeability through tight junctions by removal of specific claudin isoforms. *Am. J. Physiol., Cell Physiol.* 287: C1412-C1417.

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 or our catalog for detailed protocols and support products.

MONOS
Satisfaction
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Try **claudin-3 (2F2): sc-293219**, our highly recommended monoclonal alternative to claudin-3 (C-20).