

claudin-5 (C-15): sc-17668

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 may have an important role in transcellular transport through tight junctions. Claudin-5 is expressed in the endothelial junctions of the rat liver and in junctions of acinar cells of the pancreas. Human claudin-5 is abundantly expressed in adult lung, heart and skeletal muscle and is deleted in patients with velocardiofacial syndrome, which is characterized by cleft palate, facial dysmorphology and conotruncal heart defects.

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 β subunit dependent and independent regulation of intestinal epithelial tight junctions. *J. Biol. Chem.* 276: 35571-35580.
5. 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: CLDN5 (human) mapping to 22q11.21; Cldn5 (mouse) mapping to 16 A3.

SOURCE

claudin-5 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of claudin-5 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-17668 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

claudin-5 (C-15) is recommended for detection of claudin-5 of mouse, rat and human 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).

claudin-5 (C-15) is also recommended for detection of claudin-5 in additional species, including bovine and porcine.

Suitable for use as control antibody for claudin-5 siRNA (h): sc-43044, claudin-5 siRNA (m): sc-43045, claudin-5 shRNA Plasmid (h): sc-43044-SH, claudin-5 shRNA Plasmid (m): sc-43045-SH, claudin-5 shRNA (h) Lentiviral Particles: sc-43044-V and claudin-5 shRNA (m) Lentiviral Particles: sc-43045-V.

Molecular Weight of phosphorylated claudin-5: 23 kDa.

Molecular Weight of glycosylated claudin-5: 31-35 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. Ye, L., et al. 2003. Biphasic effects of 17- β -Estradiol on expression of Occludin and transendothelial resistance and paracellular permeability in human vascular endothelial cells. *J. Cell Physiol.* 196: 362-369.
2. Martin, T.A., et al. 2004. Hepatocyte growth factor disrupts tight junctions in human breast cancer cells. *Cell Biol. Int.* 28: 361-371.
3. Neuhaus, W., et al. 2008. Expression of claudin-1, claudin-3 and claudin-5 in human blood-brain barrier mimicking cell line ECV304 is inducible by glioma-conditioned media. *Neurosci. Lett.* 446: 59-64.

RESEARCH USE

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

MONOS
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Try **claudin-5 (A-12): sc-374221**, our highly recommended monoclonal alternative to claudin-5 (C-15). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **claudin-5 (A-12): sc-374221**.