SANTA CRUZ BIOTECHNOLOGY, INC.

claudin-3 (1E7): sc-517546

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 transmembrane domains and two extracellular loops, make up tight junction strands. Claudin expression is highly restricted to specfic 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. 21: 35571-35580.
5. Rahner, C., Mitic, L.L. and Anderson, J.M. 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: CLDN3 (human) mapping to 7q11.23.

SOURCE

claudin-3 (1E7) is a mouse monoclonal antibody raised against full length recombinant claudin-3 of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2b} in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, 1% glycerol and < 0.1% stabilizer protein.

STORAGE

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

APPLICATIONS

claudin-3 (1E7) is recommended for detection of claudin-3 of 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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.

SELECT PRODUCT CITATIONS

1. Jang, Y.J., Kim, W.K., Han, D.H., Lee, K. and Ko, G. 2019. *Lactobacillus fermentum* species ameliorate dextran sulfate sodium-induced colitis by regulating the immune response and altering gut microbiota. Gut Microbes 3: 1-16.
2. Zhou, S., Piao, X., Wang, C., Wang, R. and Song, Z. 2019. Identification of claudin-1, -3, -7 and -8 as prognostic markers in human laryngeal carcinoma. Mol. Med. Rep. 20: 393-400.
3. Kothari, C., Clemenceau, A., Ouellette, G., Ennour-Idrissi, K., Michaud, A., C-Gaudreault, R., Diorio, C. and Durocher, F. 2021. TBC1D9: an important modulator of tumorigenesis in breast cancer. Cancers 13: 3557.
4. Yokoi, A., Ukai, M., Yasui, T., Inokuma, Y., Hyeon-Deuk, K., Matsuzaki, J., Yoshida, K., Kitagawa, M., Chattrairat, K., Iida, M., Shimada, T., Manabe, Y., Chang, I.Y., Asano-Inami, E., Koya, Y., Nawa, A., Nakamura, K., et al. 2023. Identifying high-grade serous ovarian carcinoma-specific extracellular vesicles by polyketone-coated nanowires. Sci. Adv. 9: eade6958.

RESEARCH USE

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

PROTOCOLS

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