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Claudin-2 (E1H9O) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP	H M Mk	Endogenous	20	Rabbit IgG	#P57739	9075

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

Claudin-2 (E1H9O) Rabbit mAb recognizes endogenous levels of total Claudin-2 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Asp196 of human Claudin-2 protein.

Background

Tight junctions, or zonula occludens, form a continuous barrier to fluids across the epithelium and endothelium. They function in regulation of paracellular permeability and in the maintenance of cell polarity, blocking the movement of transmembrane proteins between the apical and the basolateral cell surfaces. Tight junctions are composed of claudin and occludin proteins, which join the junctions to the cytoskeleton (1,2). The claudin family is composed of 23 integral membrane proteins, and their expression, which varies among tissue types, may determine both the strength and properties of the epithelial barrier. Alteration in claudin protein expression pattern is associated with several types of cancer (2,3). Claudin-1 is expressed primarily in keratinocytes (4) and normal mammary epithelial cells, but is absent or reduced in breast carcinomas and breast cancer cell lines (5,6).

Claudin-2 is expressed primarily in the proximal tubule of the normal mammalian kidney, where it regulates transepithelial ion (e.g., Na^+, Cl^-) reabsorption (7). Increased expression of Claudin-2 has been reported in some cancer cell lines (8), including A549 lung adenocarcinoma cells, where its nuclear distribution was positively associated with enhanced proliferation (9).

Background References

1. Shin, K. et al. (2006) *Annu Rev Cell Dev Biol* 22, 207-35.
2. Oliveira, S.S. and Morgado-Díaz, J.A. (2007) *Cell Mol Life Sci* 64, 17-28.
3. Hewitt, K.J. et al. (2006) *BMC Cancer* 6, 186.
4. Brandner, J.M. et al. (2002) *Eur J Cell Biol* 81, 253-63.
5. Krämer, F. et al. (2000) *Hum Genet* 107, 249-56.
6. Swisshelm, K. et al. (1999) *Gene* 226, 285-95.
7. Muto, S. et al. (2010) *Proc Natl Acad Sci U S A* 107, 8011-6.
8. Ikari, A. et al. (2012) *Biochim Biophys Acta* 1823, 1110-8.
9. Ikari, A. et al. (2014) *Biochim Biophys Acta* 1843, 2079-88.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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