



Qty: 100µg/400 µL

## Rabbit anti-Claudin-14

For Research Use Only

Catalog No. 36-4200

Lot No. See product label

## Rabbit anti-Claudin-14

### FORM

This polyclonal antibody is supplied as a 400 µl aliquot at a concentration of 0.25 mg/ml in phosphate buffered saline (pH 7.4) containing 0.1% sodium azide. The antibody is epitope-affinity-purified from rabbit antiserum.

PAD: ZMD.286

### IMMUNOGEN

Synthetic peptide derived from the mid region of the human Claudin-14 protein.

### SPECIFICITY

This antibody reacts with the ~22 kDa human Claudin-14. Claudin-14 oligomers are observed at above 40 kDa in Western blots using HepG2 cell lysates.

### REACTIVITY

Reactivity is confirmed in Western blotting with human HepG2 hepatocellular carcinoma cell lysates. Immunofluorescence assays were performed using human Claudin-14 transfected-MDCK cells that were fixed with 1% paraformaldehyde, permeabilized with 0.2% Triton X-100, and quenched with 50 mM ammonium chloride.

Sample	Western Blotting	Immuno-fluorescence
Human	+++	++
Mouse	ND	ND

(Excellent +++, Good++, Poor +, No reactivity 0, Not applicable N/A, Not Determined ND)

### USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

**Immunofluorescence:** 3-9 µg/ml

**Western Blotting:** 1-3 µg/ml

### STORAGE

Store at 2-8°C for up to one month. Store at -20°C for long-term storage. Avoid repeated freezing and thawing.

(cont'd)

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PI364200

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## BACKGROUND

Tight junctions represent one mode of cell-to-cell adhesion in epithelial or endothelial cell sheets, forming continuous seals around cells and serving as a physical barrier to prevent ions, solutes, and water from passing freely through the paracellular space. In addition to this "barrier" function, the "fence" function of tight junctions plays an important role in maintaining epithelial cell-polarity by blocking the diffusion of membrane proteins between apical (luminal) and basolateral cell surfaces. Recent studies have also shown that tight junctions represent complex structures involved in signaling cascades that control cell growth and differentiation.<sup>1</sup> Tight junction strands are composed of multiple four-transmembrane domain proteins, occludin, and various combinations of claudin family members in various tissues.<sup>2</sup> The permeability properties of tight junction complexes vary in different epithelia, mainly as a result of the particular claudins and interacting proteins that are present.<sup>3</sup> Many proteins integrate with tight junctions, including scaffolding proteins containing PDZ domains, tumor suppressors, transcription factors, and proteins involved in vesicle transport.<sup>1</sup> Specific peripheral proteins associated with tight junctions include ZO-1, ZO-2, ZO-3, cingulin, symplekin, JAM-1, and 7H6 antigen.

Claudin-14 is one of at least 20 claudins that have been identified, and the claudin-14 gene was first identified when human chromosome 21 was sequenced.<sup>4</sup> Like most claudins, claudin-14 has a molecular weight of ~22 kDa, four transmembrane domains, and a carboxyl terminal end recognized by PDZ domains of the submembranous plaque proteins ZO-1, ZO-2, and ZO-3.<sup>5</sup> Claudin-14 expression has been localized to the cochlea, liver, and kidney. Mutations in the claudin-14 gene have been shown to cause autosomal recessive deafness *DFNB29*.<sup>5</sup> A study using human microvascular endothelial cells (MVEC) also identified claudin-14 as a regulated gene and provided evidence for its involvement in the formation or stabilization of tubular structures.<sup>6</sup>

## REFERENCES

1. Gonzalez-Mariscal L, et al. *Prog Biophys Mol Biol* 81(1): 1-44, 2003.
2. Tsukita S and Furuse M. *Genes Cells* 3(9): 569-573, 1998.
3. Tsukita S and Furuse M. *J Cell Biol* 149(1): 13-6, 2000.
4. Hattori M, et al. *Nature* 405: 311-9, 2000.
5. Wilcox ER, et al. *Cell* 104: 165-172, 2001.
6. Glienke J, et al. *Eur J Biochem* 267: 2820-2830, 2000.

## RELATED PRODUCTS

<b>Product</b>	<b>Clone/PAD*</b>	<b>Cat. No.</b>
Rabbit anti-Claudin-1	JAY.8	51-9000
Rabbit anti-Claudin-1	MH25	71-7800
Rabbit anti-Claudin-2	MH44	51-6100
Rabbit anti-Claudin-3	Z23.JM	34-1700
Mouse anti-Claudin-4	3E2C1	32-9400
Mouse anti-Claudin-5	4C3C2	35-2500
Rabbit anti-Claudin-5	Z43.JK	34-1600
Rabbit anti-Claudin-7	ZMD.241	34-9100
Mouse anti-Claudin-15	4C12C5	32-9800
Rabbit anti-Claudin-16	ZMD.178	34-5400
Claudin Sampler Pack		90-0900
Mouse anti-Occludin	OC-3F10	33-1500
Rabbit anti-Occludin	Z-T22	71-1500
Mouse anti-ZO-1	ZO-1-1A12	33-9100
Rabbit anti-ZO-1	Z-R1	61-7300
Rabbit anti-ZO-2	Z54.PL	71-1400
Rabbit anti-ZO-3 (Mid)	ZMD.260	36-4000
Rabbit anti-ZO-3 (C-term)	ZMD.261	36-4100
Rabbit anti-JAM-1	ZMD.275	36-1700
Rabbit anti-Symplekin	ZMD.274	36-1600
Tight Junction Antibody Sampler Pack		90-1200

\*PAD: Polyclonal Antibody Designation

<b>Conjugate</b>	<b>ZyMAX™ Goat x Rabbit IgG (H+L)</b>	<b>ZyMAX™ Goat x Mouse IgG (H+L)</b>
Purified	81-6100	81-6500
FITC	81-6111	81-6511
TRITC	81-6114	81-6514
Cy™3	81-6115	81-6515
Cy™5	81-6116	81-6516
HRP	81-6120	81-6520
AP	81-6122	81-6522
Biotin	81-6140	81-6540

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