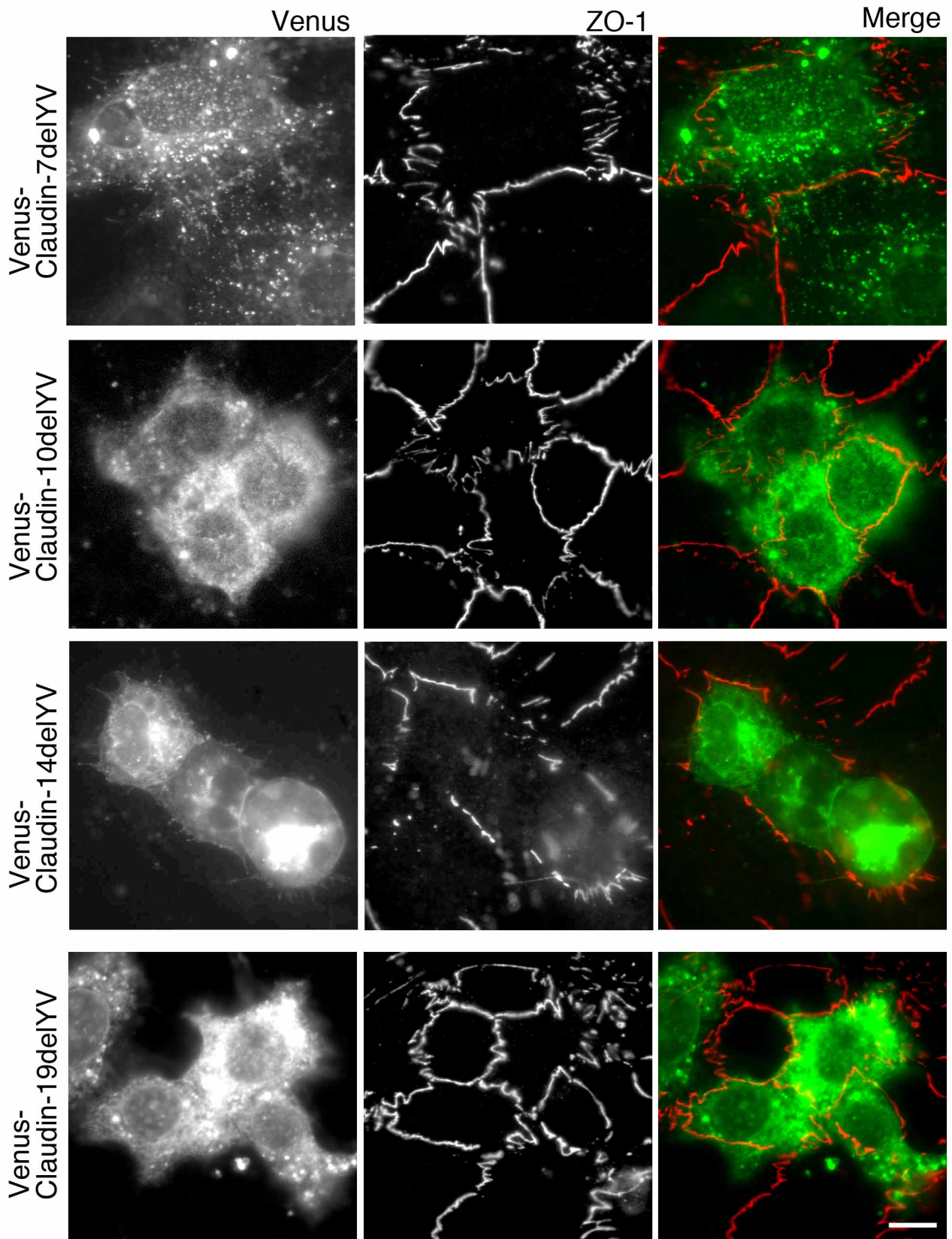
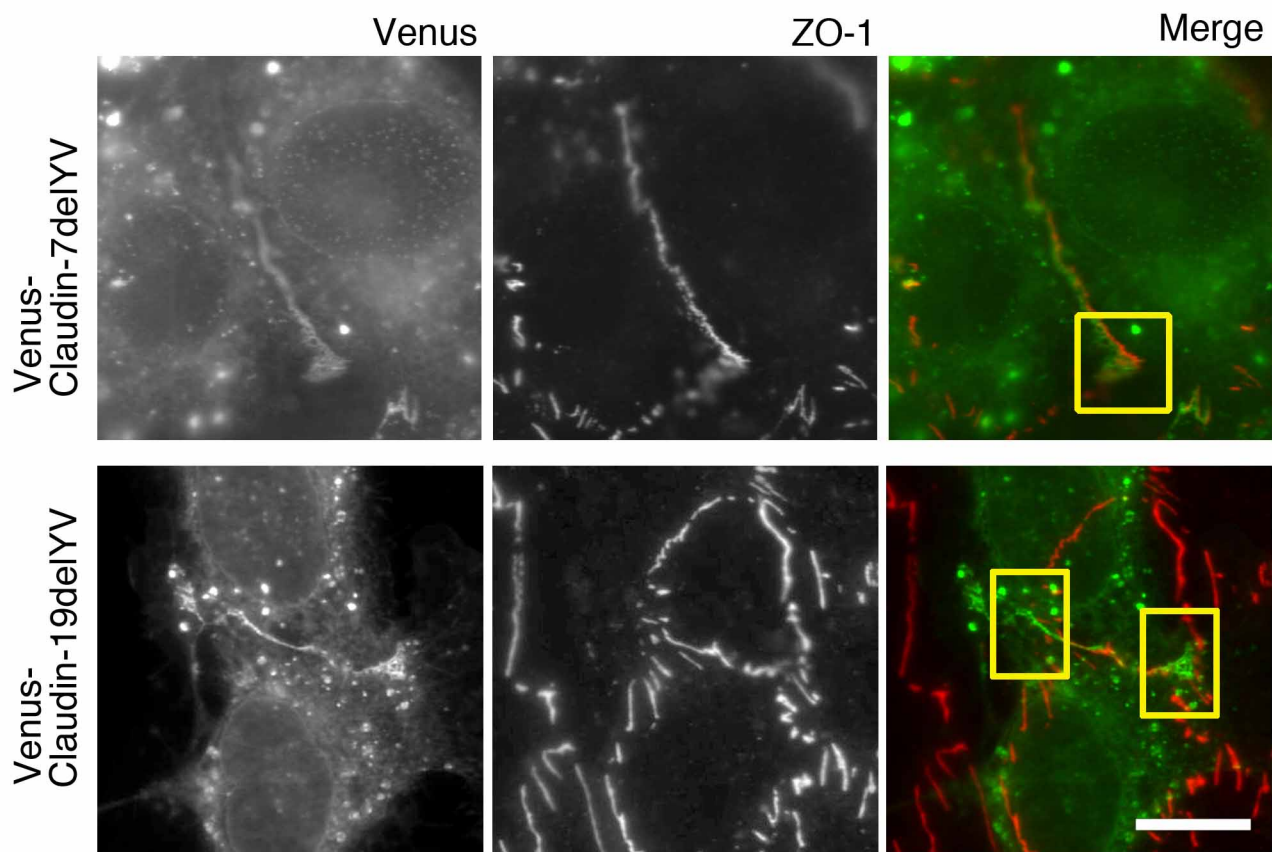


*Supplementary Figure S1 Yamazaki et al.*



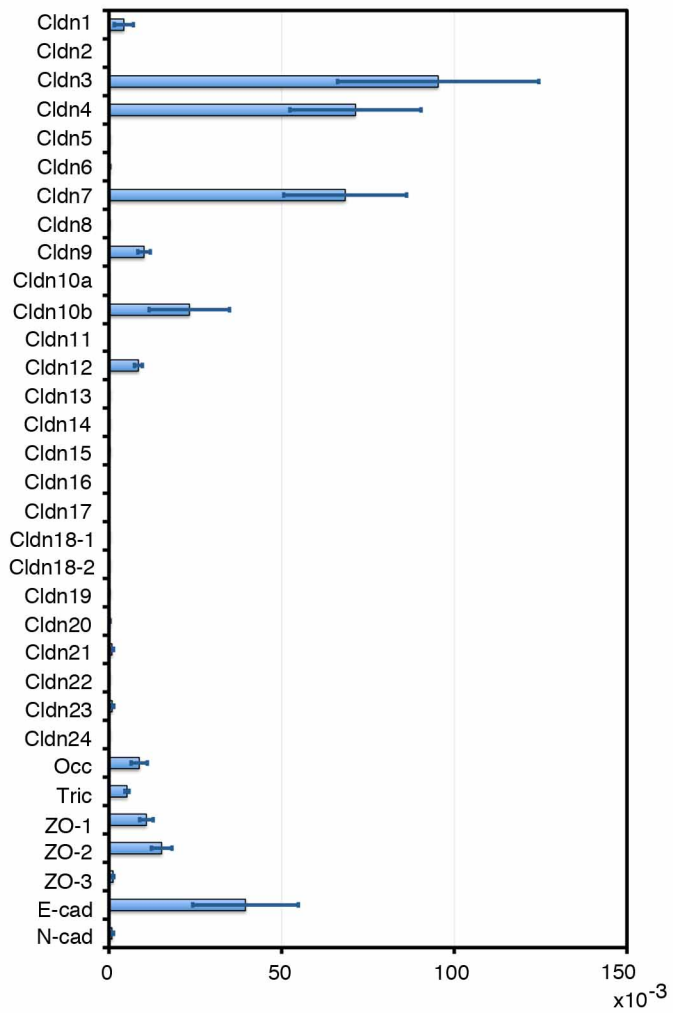
Supplementary Figure S2 Yamazaki et al.



Supplementary Figure S3 Yamazaki et al.

# Realtime RT-PCR of Eph4 cells

Relative ratio vs GAPDH



Supplementary Figure S4 Yamazaki et al.

## Microarray analysis of claudins, occludin, and tricellulin in SF7cells

Probe Name	Signal	Detection	p-value	Gene
1437932_a_at	2.6	A	0.718506	claudin 1
1438850_at	5	A	0.457764	claudin 1
1417231_at	76.2	A	0.219482	claudin 2
1417232_at	47.2	A	0.334473	claudin 2
1426332_a_at	19	A	0.828613	claudin 3
1434651_a_at	8.4	A	0.601074	claudin 3
1418283_at	52.5	A	0.601074	claudin 4
1417839_at	32.9	A	0.171387	claudin 5
1417845_at	18.8	A	0.533936	claudin 6
1448393_at	10.7	A	0.303711	claudin 7
1449091_at	0.9	A	0.753906	claudin 8
1450524_at	4.6	A	0.72583	claudin 9
1439427_at	48.2	P	0.001221	claudin 9
1426147_s_at	52.1	A	0.171387	claudin 10
1416003_at	4.2	A	0.432373	claudin 11
1433781_a_at	6573	P	0.000244	claudin 12
1433782_at	2217.6	P	0.000244	claudin 12
1422920_at	35.6	A	0.219482	claudin 13
1420345_at	3.1	A	0.533936	claudin 14
1418920_at	52.1	A	0.067627	claudin 15
1420434_at	5.8	A	0.753906	claudin 16
1425445_a_at	53	A	0.149658	claudin 18
1449428_at	5.3	A	0.633789	claudin 18
1425727_at	32	A	0.45752	claudin 19
1430237_at	95.9	A	0.095215	claudin 22
1424409_at	2.3	A	0.870361	claudin 23
1425191_at	386.5	P	0.000244	occludin
1448873_at	158.2	P	0.000244	occludin
1426914_at	3.8	A	0.80542	tricellulin

## Primers designed for Real-time PCR

name of gene	Sequence (5' → 3')	
	Forward	Reverse
Cldn1	CTGGAAGATGATGAGGTGCAGAAGA	CCACTAATGTCGCCAGACCTGAA
Cldn2	ATACTACCCTTTAGCCCTGACCGAGA	CAGTAGGAGCACACATAACAGCTACCAC
Cldn3	CAGTGTACCAACTGCGTACAAGAC	ACCGGTACTAAGGTGAGCAGAG
Cldn4	GGTAGCTCAGCTGTGACTTTGGACTC	CTGGAGTAACGTGTAGGCTGAGTGAG
Cldn5	TAACCTGAAAGGGCAGCTGGAGAAAC	AGGTCCAGGCTAAGTCCTTTGGTTCAGTAG
Cldn6	TGCCCACTCTATCATCCAGGACTTC	AGGCCTGAGGCTGCCAG
Cldn7	ACGCCCATGAACGTTAAGTACGAG	CTTTGCTTTCACTGCCTGGACA
Cldn8	CTGGGGATAAAAGAGAAGGAGGCTGA	AGGCTGCAAAGCAGGATAGCAGAAAG
Cldn9	CTTGAGCTAACCCCTCTGTAGTGGTTG	CCAGAGTAAGAAAGTCCAGGAGAGCA
Cldn10a	TCCCACACTTCAAGCCATGAGA	GCAGACACTGGACAAAACCTTCCAC
Cldn10b	TGGGTGCTAGTGTCTTCCACACTG	GAATCGGTAACGCAGATCTTCCAC
Cldn11	CTGCCGAAAAATGGACGAACTG	TGCACGTAGCCTGGAAGGATGA
Cldn12	CAGACCAGTGTGTACTCAGACTTTCTACCC	GAAGCAACATACTGACTGTCTCCTGACG
Cldn13	GTCAACATCCAGTATGCAGAGACTTTC	GCTGGCCATCAAACATCTAAGGTATC
Cldn14	GCAGCGTTGATAGCTGAAACTAGGTG	CCAAGGCTGCTAGAACTTTGCTG
Cldn15	GCAGGGACCCTCCACATACTTG	AGTTCATACTTGGTTCCAGCATAACAGTG
Cldn16	CTGGAGGTGAGCACTAAATGCAGAG	AGTTACCACCAGCTTCAAGGGATGTTC
Cldn17	CTTCCACCAGCTACGTCTAAGGCTTACTTC	CTGAAGTACTCACAGTTTCTGGGGTGAC
Cldn18-1	AGTATGAAGGGCTCTGGAGGAGTTG	AGAACAATGCCACGATCATCAG
Cldn18-2	GTATTCAACTACCAAGGGCTATGGCGTTC	ATCATCAGGGCTCGTACAGCTTGC
Cldn19	CAGGTCTCTGTACTTTGACTGCTGTCTC	CCAAATTCGTACCTGGCATTGAC
Cldn20	GGTACACCAAGGAGATCATAGCGAAC	ATGTACAGGGCTCCTCCAGGTTCCATA
Cldn21	CCTGCAGCCTCGAGTCACTATG	CTTTAGGCTGTACAGTTCCATTTTCTAGG
Cldn22	CTCCCAGAACGTTCTAATGGGCTTAG	AGTGCGGCAAGTAGTTTGTAAAGGCAG
Cldn23	TGGAGTCTGAGGGTGACTTGAACCTCTG	AAGGAAGGCTTGACCTCCAGTTAGAGGAAG
Cldn24	ACTCTGGAAGCATCAGCTTCCAGCTACTACC	GGATGCTGTTCATCCAGAAGTCTTGA
Occludin	GGACCCTGACCACTATGAAACAGACTAC	ATAGGTGGATATTCCCTGACCCAGTC
Tricellulin	GCAGGCTCCCACATCATTCTG	TTGAGGTAATCGCAACGCTCC
ZO-1	AGCTCATAGTTCAACACAGCCTCCAG	TTCTTCCACAGCTGAAGGACTCACAG
ZO-2	GGAGACCAGATTCTGAAGGTGAACACAC	ACCTTTGGGGATTTCTAGCAGGTAGAGGAC
ZO-3	GGATGAGATCTTGCAGGTGAATGG	TCCTGTTTGCTCTGTGTTACCAGCTC
E-cadherin	AGGAAATGCACCCCTCCAAT	AATCGGCCAGCATTTTCTG
N-cadherin	GGTGGAGGAGAAGAAGACCAG	GGCATCAGGCTCCACAGT

## **Supplementary Figure Legends**

### **Supplementary Figure S1**

Immunofluorescence micrographs of claudins in SF7 cells. A) Immunofluorescent detection of endogenous claudins in SF7 cells. Claudin-9 was not detected, although it showed a positive signal in the microarray analysis. Green: claudin-9, Red: ZO-1, Bar: 10  $\mu\text{m}$ . B) Immunofluorescence micrographs of claudin-12. The staining for claudin-12 showed a dotted pattern at cell-cell contacts, but most of it did not coincide with ZO-1 staining. Green: claudin-12 Red: ZO-1, Bar: 10  $\mu\text{m}$ . C) Immunofluorescence micrographs of the transient expression of Venus-claudin-12 in SF7 cells. Only a small amount of the Venus-claudin-12 overlapped with the ZO-1 staining; most of it was distributed over the whole plasma membrane. Green: Venus, Red: ZO-1, Bar: 10  $\mu\text{m}$ .

### **Supplementary Figure S2**

Immunofluorescence micrographs of Venus-tagged claudin mutants in which the ZO-1/2-binding regions were deleted, in SF7 cells. The claudin-7, -10, -14, and -19 mutants did not co-localize with ZO-1. Green: Venus, Red: ZO-1, Bar: 10  $\mu\text{m}$ .

### **Supplementary Figure S3**

Immunofluorescence micrographs of Venus-tagged claudin mutants in which the ZO-1/2-binding regions were deleted, in SF7 cells. Note that the mutants of claudin-7 and -19 appeared to polymerize independently of ZO-1. Yellow boxes indicate regions of claudin polymerization. Green: Venus, Red: ZO-1, Bar, 10  $\mu\text{m}$ .

**Supplementary Figure S4**

Real-time RT-PCR of claudins, other tight-junction proteins, and adherens-junction proteins in Eph4 cells. Various claudin species were detected at the transcriptional level. The expression levels relative to that of GAPDH are shown.

**Supplementary Table S1 Microarray analysis of claudin expression in SF7 cells.**

Among the twenty-four claudin members, signals for claudin-9 and claudin-12 were detected. The signal for occludin was also positive. Note that only one of two probes against claudin-9 could detect a signal, suggesting that the claudin-9 expression was low.

**Supplementary Table S2 Primers for real-time RT-PCR**

The primers for real-time RT-PCR are listed.