

doi: 10.1387/ijdb.150364nn

SUPPLEMENTARY MATERIAL

corresponding to:

**Evolution of the vertebrate claudin gene family:
insights from a basal vertebrate, the sea lamprey**

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Full text for this paper is available at: <http://dx.doi.org/10.1387/ijdb.150364nn>

TABLE S1

LIST OF ACCESSION NUMBERS OF ALL PROTEIN SEQUENCES USED FOR PHYLOGENETIC ANALYSIS

Gene name	Accession number
Mouse (<i>Mus musculus</i>)	
Claudin 1	NP_057883.1
Claudin 2	NP_057884
Claudin 3	NP_034032
Claudin 4	NP_034033
Claudin 5	NP_038833
Claudin 6	NP_061247
Claudin 7	NP_058583
Claudin 8	NP_061248
Claudin 9	NP_064689
Claudin 10	NP_076367.2
Claudin 11	NP_032796
Claudin 12	NP_075028
Claudin 13	NP_065250
Claudin 14	NP_062373.3
Claudin 15	NP_068365
Claudin 16	NP_444471
Claudin 17	NP_852467
Claudin 18	NP_062789
Claudin 19	NP_001033679
Claudin 20	NP_001095030
Claudin 22	NP_083659
Claudin 23	NP_082274
Claudin 24	NP_001104788
Claudin 25 (Claudin Domain 1)	NP_001239379
Claudin 26 (transmembrane protein 114)	NP_083346
Claudin Domain 2	NP_083125
Chicken (<i>Gallus gallus</i>)	
Claudin 1	NP_001013629
Claudin 2	NP_001264551
Claudin 3	NP_989533
Claudin 4	XP_003642430
Claudin 5	NP_989532
Claudin 8	XP_004938436
Claudin 10	NP_001264696
Claudin 11	XP_422797
Claudin 12	XP_004939337
Claudin 14	XP_004934594
Claudin 15-like	XP_422589
Claudin 16	XP_426702
Claudin 16-like	XP_001232502
Claudin 18	XP_426691.2
Claudin 19	XP_003642589.2
Claudin 20	XP_004935700
Claudin 22-like	XP_004941124
Claudin 25	XP_004948118
Claudin Domain 1	NP_001012838
<i>Xenopus tropicalis</i>	
Claudin 1	NP_001015704
Claudin 2	XP_004916813
Claudin 3	NP_001005709
Claudin 4	NP_001016663
Claudin 4- like/Cldn34	ENSXETT00000034379
Claudin 5	NP_001006707
Claudin 6.1	NP_988873
Claudin 6.2	ENSXETT00000039790
Claudin 7	ENSXETT00000016483
Claudin 8-like	XP_004912214
Claudin 8.3	NP_001120297

TABLE S1 (CONTINUED)

LIST OF ACCESSION NUMBERS OF ALL PROTEIN SEQUENCES USED FOR PHYLOGENETIC ANALYSIS

Gene name	Accession number
Claudin 10	XP_002939572
Claudin 11	ENSXETT00000020222
Claudin 12	NP_001016851
Claudin 14	XP_004912176
Claudin 15.1	NP_001096379
Claudin 15.2	XP_002933422
Claudin 16	XP_002934087
Claudin 16-like	XP_002937090.2
Claudin 18	XP_002938162
Claudin 19	XP_002937080
Claudin 22	XP_002934304
Claudin 23	XP_004911118
Claudin D1	NP_001016259
Sea lamprey (<i>Petromyzon marinus</i>)	
Claudin k/Cldn31	ENSPMAT0000007899
Claudin 1	MIGGVNGTRVPVSSLIIEGFAEPDADENAVMMALCALGGHTGLWGRCLNLPShRGELCLTPGFLQEWAPRFSEPGNHNSQLDPVRTALCRAQLLLPLVALTLLLLTLALALIGCASNSS LALIPCAILTLLAGLCTLTASSVLSLPCVDASSSPGWSTFLALASACQDIAATGLLIWARAASLRHYRSVL
Claudin 3a	MQCKVYDMSMLAGQDLQAARALTVVAVVAAAAALLVAIAGAKCTTCIEEETKARVSVIAAGAGFVLAGLLELVPSVWSANSVVRDFYNPLVPDSTKREIGAAMFIGWAAATLLVLGGAL LCCSCPQKQRYAAPPKGGGGGGGGGGGGDDDDRRKGG
Claudin 3b	KP677499
Claudin 8	KP677500
Claudin 9	MQCKVHDSMLALNGELQAARAMTVLANLLALLAVGVAATGMRCCTTCGDEDGSAKGRLTATGGVGFALCGLLMLAPVSWTAHNIVRDFYDVGVPVTLKRELGSALYVGWGAATLLFL GGLLCCSWPRPEPGRPRPFYGLQPGGLAMHGTGPNAPGAPLRMHSAAAAAA
Claudin 10	ENSPMAT0000005506
Claudin 11	MGASCFQLLGVSLGLLGWVALVATATNDWVLLCSYGFTACVRFEDMGSKGLWAQCISNNGIDHCKPFAEILALPVYIQVCRALMVVACVLGLPAILLASTGLKCIRLGEETASEKAQR VVAGGVMLLVLGLCTLVATTWFPVGHKESLKGVVNFGYSLFAGWVGTALAIVSGALLCCCSGSKERRYAYPATASAAA
Claudin 12	MSCGGCFVLVWSLCGAAALCLLVAALMPSWRDLILVDPTKRSIVVRHGLWVRCAGYEGDVPGGVSWAAAWFGPDSGKEGVDGGGSPGCVVRRDSAWPIATDSLDRLLQLGVPT ACLVALVALALNVSGAVVLCRSGRRSGRLYGEDEDSTLSSTSSSSSEFSSKRKRKKKKAQCCQFNPCGCQVVASVLYLLASALVLPALWALLSVDELNRAHVSGDARWRPGE AVPVCLAACAGLLAAGGLAMWYCTCRPLPPAPLPPAPLALGSLGMEALGLSGRAGPAEACGRSTRQSHRTTGSPFAGFTSVSSRPMSRATLELDIPMYELH
Claudin 15	MALDVVGTLLCIAGWTLVGTIITNHYWKVSTVAGSVITNTIYENLWQACATDSMGVSNCRDFDSMLNLPGHVQACRALVITAIVLGGFFGTLAFLGMRCNTIVSSDAEVKGRIVFSAGII YILEGLSAIIAVSWYAAQVVAEFFDPFYAGTKYELGPALYMGWAGSGLAILGGLLCCVCTGARSTQRDHTFKYSAARAATPISTATPRTILDMEGQTYARQGYV
Claudin 16	MITALQLLAFFFALVSASFVAVATWDCWMVNADDSLEVSQKCRGLVWECVTNAFDGIRTCQDFDSILAEHPLKIVLSRSLILTADILACFACIILGLDCVVRVLSNEPRIKTRICYTAGFI YLLAGIPGMVGSVWYAVDVYVERSTLVQQNVFLGIQYEFGWSCWLMAGSMACILAGIVLTCCVYLFRDANAARLHRSPPYVAPRTSLGKMYAMASHV
Claudin 18	ENSPMAT0000001477
Claudin 19a	ENSPMAT0000001243
Claudin 19b	KP677501
Claudin 20	ENSPMAT0000001161
Claudin-like	ENSPMAT00000011472
<i>C. elegans</i>	
CLC-5	NP_509258

Where the accession numbers are not available, the protein sequence is supplied.

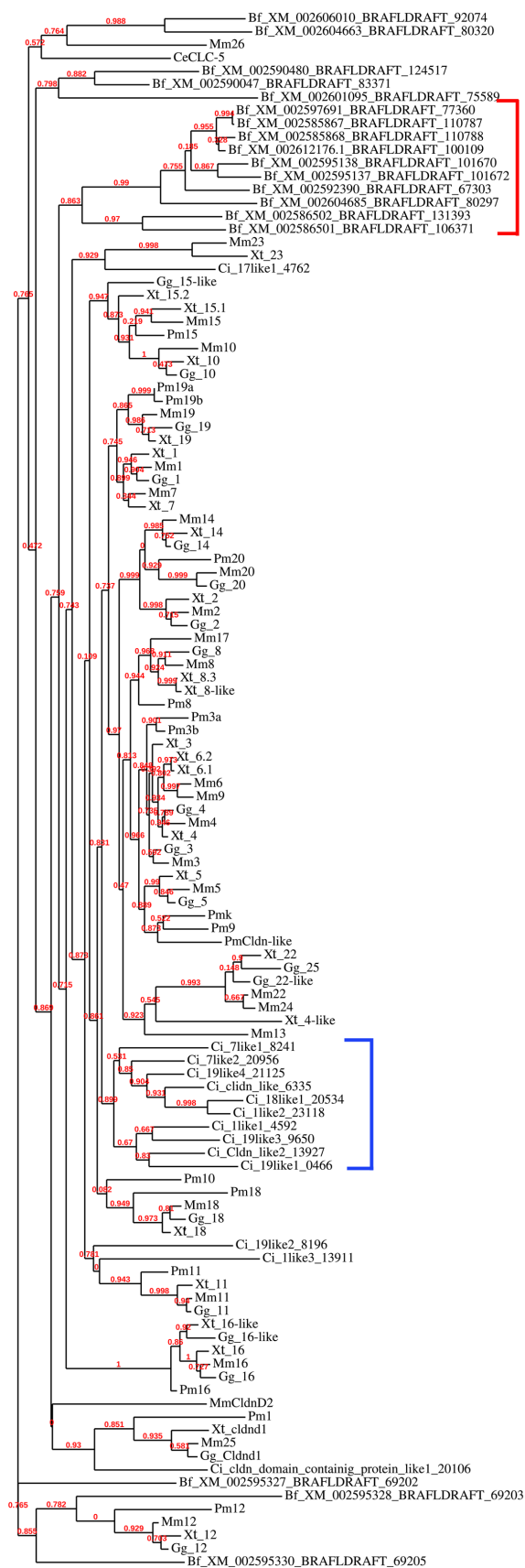


Fig. S1. Analysis of the phylogenetic relationships among vertebrate and invertebrate chordate claudins. Maximum likelihood phylogenetic tree constructed using lamprey (*Pm*), *Xenopus* (*Xt*), chick (*Gg*), mouse (*Mm*), *Ciona intestinalis* (*Ci*) and amphioxus (*Bf*) claudin amino acid sequences. Blue and red brackets indicates groups of amphioxus and *Ciona* claudin-like sequences that appear to be highly divergent from vertebrate claudins. Statistical support values are indicated on tree nodes.