

Table S1. Primers used for the identification of omasal claudins

Primer no.	Primer name	Sequence
I	bov CLDN1 for bov CLDN1 rev	ATGGCCAACGCGGGTTGCA TCACACATAGTCTTTCCCACTGGAAG
II	bov CLDN2 for bov CLDN2 rev	ATGGCCTCTCTTGGCCTCCAGCTT TCACACATACCCCGTCAGGCTGTAG
III	bov CLDN3 for bov CLDN3 rev	ATGTCCATGGGCCTGGAGATCGC TCAGACGTAGTCCTTGCGGTCGTAG
IV	bov CLDN4 for bov CLDN4 rev	ATGGCTTCCATGGGGCTGCAGGT TTAGACGTAGTTGCTGGCTGGGGC
V	bov CLDN5 for bov CLDN5 rev	ATGGGGTCGGCGCGCTGGAGATTC CAGACGTAGTTCTTCTTGCATAGTCCGGT
VI	bov CLDN7 for bov CLDN7 rev	ATGGCCAATTCGGGCCTGCAGCTGC TCACACATACTCTTTGGCAGAGTTGG
VII	bov CLDN8 for bov CLDN8 rev	ATGGCTACCTACGCCCTGCAAA CTACACGTAAGTACTTTTGGAGTAC
VIII	bov CLDN10-1 for bov CLDN10-2 for bov CLDN10 rev	ATGGCGAGCACGGCGTCGG ATGTCCAGGGCTCAGATCTCGG TTAGACGTATGCGTTTTTGTCAAAGTTTTTGAAG
IX	bov CLDN11 for bov CLDN11 rev	ATGGTGGCCACATGCTTGCAG TTATACATGGGCACTCTTGGCATGA
X	bov CLDN12 for bov CLDN12 rev	ATGGGCTGTGGGATGTCCAC TTAGGTGGTGGGAACTACTGG
A	bov Cldn1m for bov Cldn1m rev	AGCGCGGGCGCCCGAGCGAGTCATG CTTGTTGGTTCCAACAGGATTGTCAGCTTTCGCTTCTGTG
B	bov Cldn2m for bov Cldn2m rev	CTAAGCCGCGTGTGCTGAGAGGTCTACCATG CACCCCACTCTGGCCCTGGTTCT
C	bov Cldn3m for bov Cldn3m rev	AGCCGGCTTTGGCGCGGCAGCCATG GGAGTGGTCGGGGCTTCCCGCGGTC
D	bov Cldn4m for bov Cldn4m rev	TCGCCTCTTCGCCGACGCTGAGCCATG CAGTGAGCTCAGTCCAGGGAGAAACAAGATGAAAGG
E	bov Cldn7m for bov Cldn7m rev	GCGCCCCCGTCTATTCTGAAGGCGGAA GGTTGGGGCAGGGGCGTCCCACTCA
F	bov Cldn1 middle for bov Cldn4 middle for bov Cldn7 middle for	GGGACTAATAGCCATCTTTGTGGCC GGCGGCCCGTCCCTCATCGTCATCTGTA ACGACTCGGTGCTCTCCCTGCCGGC

Primers I–X were used for initial screening, primers A–E were used for the cloning and sequencing of sheep omasal claudins, and primer F was used for verification of sequencing. All primers are based on bovine sequences published in the NCBI nucleotide database; however, primers A–E are not within the open reading frame to obtain the genuine sheep sequence.

Table S2. Sequences for sheep claudin-1, -4 and -7 mRNA [complete coding sequences (CDSs)] and protein

HM117762.1 **Claudin-1**

>Seq1 [organism=Ovis aries] **Ovis aries claudin 1 (CLDN1) mRNA, complete CDS**

ATGGCCAACGCGGGGTTGCAGCTGCTGGGCTTCCCTGGCGTTTCTGGGCTGGATCGGCTCCATCGTCAGCAGCGGCGCTGCCCCAGTGGAAAGTTTT
 ACTCCTATGCTAGTGACAACATCGTGACGGCCAGGCCATCTACGAGGGGCTGTGGATGTCGTGCGTGTGCGAGAGCACCGGGCAGATCCAGTGCAA
 AGTCTTCGACTCCTTGTGAATCTGAACAGCACTCTGCAAGCAACCCGTGCCTTGATGGTGATCGGCATCCTGCTGGGACTAATAGCCATCTTTGTGGC
 CACCCTTGGCATGAAGTGTATGAAGTGCATGGAAGACGACGAGGCACAGAAGATGCGGATGGCTGTCTTTGGGGGCGTGATCTTTCTTATTTTCAGGCT
 GGCTGTTTTGGTTGCCACAGCATGGTATGGCAATAGAATTGTTCAGAAATCTATGACCCCATGACCCCGGTcAATGCCAGGTATGAATTTGGTCAGGCT
 CTCTTCATGGCTGGGcTgcTGTCTCTCTGCCTTCTGggAGGCGCCCTGCTGTGCTGCTCTGTcCcCGGAAAACAACATCTTACCCAACACCCAGGCC
 CTATCCAAGCCAGCACCTTCCAGTGGGAAAGACtATGTGTGA

>Seq1 **Ovis aries claudin 1**

MANAGLQLLGFILAFGLGWIGSIVSTALPQWKVYSYASDNIVTAQAIYEGLWMSCVSQSTGQIQCKVFDSELLNLSLQATRALMVGILLGLIAIFVATLGMKCMK
 CMEDDEAQKMRMAVFGGVIPLISGLAVLVATAWYGNRIVQEFYDPMTPVNARYEFGQALFIGWAAAASLCLLGGALLCCSCPRKTTSYTPRPPYPKPAPSSGKD
 YV

HM117763.1 **Claudin-4**

>Seq2 [organism=Ovis aries] **Ovis aries claudin 4 (CLDN4) mRNA, complete CDS**

ATGGCTTCCATGGGGCTGCAGGTGATGGGCATCGCGCTGGCCGTGCTGGGCTGGGCTGGGCGCCATCCTGAGCTGCGCGCTGCCATGTGGCGGGTG
 ACGGCCTTCCATCGGCAGCAACATCGTCACGTCCGACACCATCTGGGAGGGCCTGTGGATGAACGCTGCGTGGTGCAGAGCACCGGCCAGATGCAGTGCA
 AGGTGTACGACTCGCTGCTGGCGCTGCCGACAGGACCTGCAGGCGGCCCGCGCCCTCATCGTCATCTGTATCATCCTGGCCGTGTTTTGGCGTGTGTT
 GTCGGTGGTGGGCGCAAGTGCACCAACTGCGTGGATGATGAGAGCCCAAGGCCAAGATATGATCGTGGCCGGCGTGGTGTCTCTGCTGGCCGG
 CCTGCTGGTGTGGTGGCCGTGCTCTGGACGGCTAACAACGTATCCGTGACTTCTACAACCCCTGGTAgCCTCGGGCCAGAAGCGGGAGATGGGG
 GCCTCGCTCTACGTGGGCTGGGCGCCGCTGGCTTGTGATGCTTGGGGGAACCTGCTCTGCTTCAACTGCCCGCCACGCAACAACAAGCCCTACT
 CGCTAAGTACTCCGCCGCCGCTCCGCCAGCCAGCAACTATGTCTAA

>Seq2 **Ovis aries claudin 4**

MASMLQVMGIALAVLGLWLGAILSCALPMWRVTAFIGSNIVTSQTIWEGLWMNCVVQSTGQMCKVYDSSLALPQDLQAARALIVICILAVFGVLLSVVGGKCT
 NCVDDSPKAKIMIVAGVVFLLAGLLVMPVSWTANNVIRDFYNPLVASGQKREMGASLYVWAAAGLLMLGGTLLCFNCPPRNNKPYSAKYSARSAPASN
 YV

HM142819.1 **Claudin-7**

>Seq3 [organism=Ovis aries] **Ovis aries claudin 7 (CLDN7) mRNA, complete CDS**

ATGGCCAATTCGGGCCTGCAGCTGCTGGGCTTTCCATGGCTCTGTGGGCTGGGTGGGCGCTGGGCATGCACCGCCATCCCGCAGTGGCAGATGA
 GCTCGTACGCTGGCGACAATATCATCACCGCCAGGCCATGTACAAGGGGCTGTGGATGGACTGCGTCACGCAGAGCACCGGCCATGATGAGCTGCAA
 AATGTACGACTCGGTGCTCTCCCTGCCGCGGCCTTGCAGGCCACTCGAGCCCTAATGGTGGTTTCCCTGGTGTGGGCTTCTGGCCaCATTGCTGG
 CCaGATGGGCATGAAGTGTACAACTGTGGGGGAGACGACAAAGTGAAGAAGGCCCGGATAGCCATGACGGGAGGCATCATTTTTCATCTTGGCAGGT
 CTTGCTGCCTTGATAGCTTGTCTGCTGGTACGGCCATCAGATTGTCTCAGATTCTATAACCCGTTGGTCCCCATGAATGTTAAGTATGAATTTGGTCCTG
 CCATCTTCATTGGCTGgGCAgGGTCTGCTGATCATCCTGGGAGGTGCGCTGCTCTTGTCTCTGCTGGGAGTGAAGGAAAGCTGGATACCGTG
 CAACCTCGCTCTACCTAAGCCCAACTCTGCCAAGGAGTATGTGTGA

>Seq3 **Ovis aries claudin 7**

MANSGLQLLGFSMALVGVVGLVACTAIPQWQMSSYAGDNITQAMYKGLWMDCVTQSTGMMSCMKYDVSLSLPAALQATRALMVSLSVLGFLATFVATMG
 MKCTNCGDVKVKKARIAMTGGIIFILAGLAALACSWEYGHQIVSDFYNPLVPMNVKYEFGPAIFGWAGSALLLGGALLSCSPGSESKAGYRAPRSYPKPN
 KEV

Differences compared with cattle (*Bos taurus*) are marked in yellow.