

Label-free proteomics to identify keratins and keratin-associated proteins and their effects on the fleece traits of Inner Mongolia Cashmere Goats

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The authors are fully responsible for both the content and the formal aspects of the electronic supplementary material. No editorial adjustments were made.

Electronic Supplementary Material (ESM)

Table S1. All proteins expressed in the down hair and guard hair in Inner Mongolia Cashmere Goats

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Accession number ¹	Gene symbols ²	Protein names ²	P-value ³	Fold Change ⁴
Proteins that were present both in DH and GH				
A0A452EME0	<i>KRT14</i>	Keratin 14	4.45E-07	20.8262228
K9LQQ8	<i>FABP3</i>	Fatty acid-binding protein, adipocyte	5.86E-07	13.57765163
A0A452E4U1	<i>KRT17</i>	Keratin 17	3.14E-07	10.62993699
A0A452EML6	<i>KRT75</i>	Keratin 75	3.41E-07	10.16948659
A0A452FGV2	<i>CAPG</i>	Macrophage-capping protein (actin regulatory protein CAP-G)	7.81E-05	3.194720559
A0A452FI49	<i>LOC102169411</i>	Secretoglobin family 1D member 1	0.00769	3.070145335
A0A452EBY7	<i>KRT38</i>	IF rod domain-containing protein	0.0194	3.014628658
B3VHM9	N/A	Albumin	0.18013	2.857530773
A0A452EH63	<i>ALDOA</i>	Fructose-bisphosphate aldolase	0.00027	2.375938145
A0A452FN70	<i>BANF1</i>	BAF nuclear assembly factor 1	0.02277	2.181854257
A0A452EYB9	<i>SELENBP1</i>	Selenium binding protein 1	0.00016	1.875941756
A0A452F8G3	<i>PSORS1C2</i>	Psoriasis susceptibility 1 candidate 2	0.01353	1.766267079
E7FKN7	<i>KRT33A</i>	Keratin33A	0.18429	1.599941582
A0A452G793	<i>JUP</i>	Junction plakoglobin	0.0212	1.576700565
A0A452EXB3	<i>S100A14</i>	S100 calcium binding protein A14	0.14823	1.576320492
A0A452F292	<i>LOC102176457</i>	IF rod domain-containing protein	0.00056	1.557782994
Q6R646	<i>KRTAP13-3</i>	Keratin associated protein 13.1	0.0002	1.5170784
A0A452E2I0	<i>KRT32</i>	Keratin 32	0.03418	1.451137666
A0A452EHR7	<i>DSP</i>	Desmoplakin	0.11421	1.445217283
A0A452EQI6	<i>VSIG8</i>	V-set and immunoglobulin domain containing 8	0.02003	1.35359605
A0A452F6Z8	<i>KRT15</i>	Keratin 15	0.23762	1.327740988
A0A452EIR1	<i>EEF2</i>	Tr-type G domain-containing protein	0.7885	1.240116406
Q6R645	<i>KRTAP15-1</i>	Keratin-associated protein 15-1	0.57439	1.23690177
A0A452DNH9	<i>TUBA4A</i>	Tubulin alpha chain	0.36351	1.188621955
A0A097ITJ2	<i>DSG4</i>	Desmoglein 4	0.57663	1.098694903
A0A452FY57	<i>KRT84</i>	Keratin 84	0.85228	1.069788872
A0A452DRX5	<i>PSAP</i>	Prosaposin	0.69755	1.065147694
A0A452EQD3	<i>KRT35</i>	Keratin 35	0.80199	1.055096548
A0A452DME8	<i>SFN</i>	Stratifin	0.73644	1.050913656
A0A452FIF7	<i>HNRNPH1</i>	Heterogeneous nuclear ribonucleoprotein H1	0.90304	1.04114176
A0A452G6N1	<i>KRT85</i>	Keratin 85	0.97375	0.997770046
G1DFV8	<i>ATP5A1</i>	ATP synthase subunit alpha	0.9847	0.9963959
A0A452F1F7	<i>RPLP2</i>	60S acidic ribosomal protein P2	0.94982	0.993716615
A0A452G7I6	<i>IL1F10</i>	Interleukin-1	0.93297	0.968249157
A0A452F8G7	<i>S100A3</i>	Protein S100	0.84925	0.95366506
W8E7I1	<i>RBM3</i>	RNA-binding protein 3	0.6374	0.907089151
A0A452FM11	<i>TUBB4B</i>	Tubulin beta chain	0.60668	0.879908514
A0A452DLF1	<i>FAM25A</i>	Protein FAM25A	0.74971	0.860318901
A0A452FLP5	<i>LOC100861381</i>	IF rod domain-containing protein	0.23839	0.834257207
A0A452E1P7	N/A	Keratin-associated protein 19-3	0.23226	0.830481365
A0A452EZ49	<i>LAMTOR5</i>	Ragulator complex protein LAMTOR5	0.12842	0.783179179
A0A452EGP3	<i>TXN</i>	Thioredoxin	0.4919	0.781520111
A0A452E7Q0	<i>CALM3</i>	Calmodulin 3	0.3692	0.720452258

Table S1 to be continued

Accession number ¹	Gene symbols ²	Protein names ²	P-value ³	Fold Change ⁴
A0A452GAM5	<i>KRT82</i>	Keratin 82	0.00161	0.688462489
A0A452F8F0	<i>SRSF7</i>	Serine and arginine rich splicing factor 7	0.23081	0.679334774
A0A452FVB7	<i>LOC102180339</i>	Galectin	0.01238	0.66136552
A0A452EHB9	<i>KRTAP15-1</i>	Keratin-associated protein 15-1	0.00434	0.636086241
A0A452DYZ1	<i>LOC108637382</i>	Peptidylprolyl isomerase	0.02642	0.605830851
A0A452FWJ1	<i>CTNBP1</i>	Catenin beta interacting protein 1	0.13067	0.604916896
A0A452FQ92	<i>LMNA</i>	Lamin A/C	0.04629	0.596233871
A0A452FZW3	<i>KRT40</i>	Keratin 40	0.0411	0.593700199
A0A452DVP8	<i>PDCD6</i>	Programmed cell death protein 6	0.00385	0.573024663
A0A452GBD4	<i>TGM3</i>	TGc domain-containing protein	0.30433	0.571000416
M4NBE4	<i>HSPA5</i>	78 kDa glucose-regulated protein	0.03369	0.560616308
I3WAE6	<i>HSP27</i>	Heat shock protein beta-1	0.14824	0.549906457
A0A452FNS1	<i>PPIA</i>	Peptidyl-prolyl cis-trans isomerase	0.01404	0.532368586
A0A452EM32	<i>SOD1</i>	Superoxide dismutase	0.31378	0.516259516
A0A452FEQ1	N/A	EF-hand domain-containing protein	0.01688	0.466470362
A0A452DMF8	<i>KRT5</i>	Keratin 5	6.13E-06	0.425138235
A0A452FF94	<i>GLRX</i>	Glutaredoxin domain-containing protein	0.00019	0.389100279
A0A452ELA7	<i>KRT77</i>	Keratin 77	0.00022	0.380629404
A0A452E969	N/A	Major allergen I polypeptide chain 1-like	0.00145	0.358625228
A0A452F296	<i>ACTA2</i>	Actin alpha 2, smooth muscle	0.08263	0.300879235
I1X3V1	<i>GALS1</i>	Galectin	0.0922	0.279555903
A0A452G0P6	<i>KRT10</i>	Keratin 10	0.0007	0.248540475
A0A452ECK9	<i>LOC102181431</i>	Keratin-associated protein 13-1-like	0.00016	0.240975496
A0A452EAW6	<i>LOC102189749</i>	Lipocln_cytosolic_FA-bd_dom domain-containing protein	0.17669	0.528764573
A0A452FKL0	<i>DSC3</i>	Desmocollin 3	0.01992	0.420491516
A0A452E0C3	<i>HSPE1</i>	10 kDa heat shock protein, mitochondrial	0.03543	0.324804859
A0A452DPJ6	<i>MYLPP</i>	Myosin light chain, phosphorylatable, fast skeletal muscle	0.01995	0.124609326
A0A452EUP9	<i>MYL1</i>	Myosin light chain 1	0.06064	0.073882828
A0A452G9K5	<i>KRT1</i>	Cytokeratin-1	0.0004	0.353842497
A0A452GA47	<i>KRT1</i>	Keratin, type II cytoskeletal 1	0.00055	0.237362826
Proteins that were present only in DH				
A0A452DSB1	<i>ANXA2</i>	Annexin	1.76E-10	7.905344143
A0A452FE14	<i>LOC108633262</i>	IF rod domain-containing protein	7.92E-08	7.257811025
A0A452FZ92	<i>ATG9B</i>	Autophagy-related protein 9	0.21848	2.869794086
Q6R639	<i>KRTAP8-1</i>	Keratin associated protein 8	0.01987	2.570318952
A0A452F0W7	<i>TPM3</i>	Tropomyosin 3	0.03348	2.449819484
A0A452EQY0	<i>KRT80</i>	Keratin 80	0.32317	1.618621894
A0A452F074	N/A	Immunoglobulin heavy constant mu	0.44644	1.599860992
A0A452F326	<i>LOC102183211</i>	IF rod domain-containing protein	0.00346	1.348446293
A0A452FTQ1	<i>NAPA</i>	NSF attachment protein alpha	0.50186	1.209613743
H9TKZ5	<i>EEF1B</i>	Elongation factor 1-beta	0.43937	1.204057592
A0A452G3C7	<i>LOC102176726</i>	IF rod domain-containing protein	0.14341	1.161367323
A0A452E8Q0	<i>LGALS3</i>	Galectin	0.86196	0.954134622
A0A452FNW6	<i>GAPDH</i>	Glyceraldehyde-3-phosphate dehydrogenase	0.71423	0.881829702

Table S1 to be continued

Accession number ¹	Gene symbols ²	Protein names ²	P-value ³	Fold Change ⁴
A0A452EJN6	<i>CRYAB</i>	Alpha-crystallin B chain	0.67199	0.800495159
A0A452FM15	<i>LOC102185436</i>	IF rod domain-containing protein	0.24326	0.745258875
A0A452FC90	<i>MYL2</i>	Myosin light chain 2	0.57338	0.732698019
A0A452F704	<i>LOC102183766</i>	IF rod domain-containing protein	0.47317	0.680794227
A0A452G855	<i>P4HB</i>	Protein disulfide-isomerase	0.31869	0.652724941
A0A452FNM4	<i>HNRNPA2B1</i>	Heterogeneous nuclear ribonucleoproteins A2/B1	0.34076	0.650396885
A0A452EN00	<i>TPM2</i>	Tropomyosin 2	0.36576	0.633728206
A0A452G3A5	<i>TRIM29</i>	Tripartite motif containing 29	0.09238	0.59412559
Q6RCT2	N/A	Keratin-associated protein 16.2	0.14074	0.591547791
A0A452E653	<i>SERPINB5</i>	Serpin B5	0.07036	0.591395455
P80601	<i>RIDA</i>	2-iminobutanoate	0.00114	0.575789832
X2J1X8	<i>CTSD</i>	Cathepsin D	0.43152	0.573772555
A0A452G3J7	<i>TUBB2A</i>	Tubulin beta chain	0.00028	0.55134957
A0A452EQX6	<i>DBI</i>	Diazepam binding inhibitor, acyl-CoA binding protein	0.04701	0.527598341
A0A452DWU1	<i>LOC102172954</i>	Histone H4	0.10296	0.466065538
A0A452E8H3	N/A	HMA domain-containing protein	0.00251	0.432252326
A0A452EKA5	<i>MLF2</i>	Myeloid leukemia factor 2	0.00157	0.344106184
F6KVT3	<i>STNC</i>	Fast twitch skeletal muscle troponin C2	0.01683	0.336318286
A0A452FSQ3	<i>CDK19</i>	Cyclin dependent kinase 19	0.12709	0.295382417
E7FKN1	<i>KRT33A</i>	Keratin, type I microfibillar, 47.6 kDa	0.09371	0.257428683
A0A452EXF9	N/A	Histone H2A	0.00193	0.188218996
A0A452FD11	<i>TPM1</i>	Tropomyosin 1	0.04578	0.183330038
Proteins that were present only in GH				
A0A452FL58	N/A	IF rod domain-containing protein	0.03206	16.44588767
A0A452DXH0	<i>CDSN</i>	Corneodesmosin	1.06E-05	6.178682234
A0A452FUQ9	<i>PKP1</i>	Plakophilin 1	0.15443	2.472872614
A0A452E1U2	<i>CALML5</i>	Calmodulin like 5	0.04895	2.130379998
A0A452ERK8	<i>SRI</i>	Sorcin	0.00687	2.086032077
A0A452EU55	<i>ENO1</i>	Phosphopyruvate hydratase	0.18001	1.625726903
Q6R647	<i>LOC100861174</i>	Keratin associated protein 12.1	0.00756	1.557623067
A0A452G119	<i>TUBA1C</i>	Tubulin alpha chain	0.01744	1.485826778
C6ZP46	<i>HBAI</i>	I alpha globin	0.14563	1.459106751
A0A452G6N9	<i>LOC102184693</i>	IF rod domain-containing protein	0.50668	1.193485702
A0A452DUW4	<i>H2BC18</i>	Histone H2B	0.34156	1.163395958
A0A452EGY3	<i>RPS21</i>	40S ribosomal protein S21	0.49745	0.833958969
A0A452G587	<i>PFN1</i>	Profilin	0.47769	0.828811011
A0A452E7P1	<i>LOC102181374</i>	PKS_ER domain-containing protein	0.35407	0.759976674
A0A452F4G7	<i>DNASE2</i>	Deoxyribonuclease II	0.03609	0.75375468
A0A452EQW1	<i>UBC</i>	Ubiquitin C	0.09036	0.737925021
A0A452E219	<i>LOC102191741</i>	Cytochrome c oxidase subunit 5A, mitochondrial	0.29797	0.669099956
A0A452EZ91	<i>CSTA</i>	Cystatin A	0.21483	0.594375991
A0A452G388	<i>MOGS</i>	Mannosyl-oligosaccharide glucosidase	0.04768	0.584256946
A0A452EBA6	<i>PNPLA6</i>	Patatin like phospholipase domain containing 6	0.07223	0.538668564
Q8MIH4	<i>CSN1S1</i>	Alpha-S1-casein	0.07839	0.528176063

Table S1 to be continued

Accession number ¹	Gene symbols ²	Protein names ²	P-value ³	Fold Change ⁴
A0A452FN18	<i>KRT3</i>	Keratin 3	0.00422	0.506069023
A0A452F7T4	<i>CASP14</i>	Caspase 14	0.17267	0.504966594
A0A452F1P5	<i>RPS28</i>	40S ribosomal protein S28	0.00064	0.45620506
A0A452EBP2	<i>S100A2</i>	Protein S100	0.13756	0.378463278
Q1KZF3	<i>HBBA</i>	Beta A globin chain	0.20893	0.353407656
Q95L76	<i>CSN2</i>	Casein beta	0.09272	0.345338871
A0A452GAV6	<i>LOC102176161</i>	IF rod domain-containing protein	0.00013	0.316120075
A0A452EZJ4	<i>KRT39</i>	Keratin 39	0.17393	0.313915603
A0A452ENV4	<i>KRT79</i>	Keratin 79	0.000082582	0.211023564
A5JSR7	N/A	Beta-lactoglobulin	0.08107	0.17757419
A0A452FKU3	<i>S100A7A</i>	Protein S100	0.01009	0.065997601
A0A452G4P6	<i>LOC108633164</i>	S100 calcium-binding protein	0.10866	0.047869151

N/A = not applicable

¹Accession number comes from the UniProt/SWISS-PROT/Capra hircus database (<https://www.UniProt.org>)²Gene symbols and protein names are approved³P-value mainly reflects the difference between groups, and its size represents the strength of the difference in evidence⁴Fold change is used to describe the degree of change from an initial value to a final value