

Generation Of Cashmere Goats Carrying An *EDAR* Gene Mutant Using CRISPR–Cas9-Mediated Genome Editing

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Table S1 List of potential off-target sites for sgRNA1 and sgRNA2. PAM sequences are labeled in red.

sgRNA1	G	G	A	G	A	A	C	T	T	C	T	C	C	G	C	G	G	G	C	AGG
POT1	G	A	A	G	G	G	C	T	T	C	T	C	T	G	C	G	G	G	C	TGG
POT2	G	G	C	G	C	A	G	G	T	C	T	C	C	G	C	G	G	G	C	GGG
POT3	A	G	A	G	A	A	C	T	G	C	T	C	C	G	A	G	G	G	C	AGG
POT4	G	G	A	G	A	G	C	T	T	C	T	C	A	G	C	G	A	G	C	AAG
POT5	T	G	A	G	A	A	C	C	T	C	A	C	A	G	C	G	G	G	C	TGG
POT6	G	G	T	C	A	A	G	T	T	C	A	C	C	G	C	G	G	G	C	TGG
POT7	G	C	A	G	G	A	G	T	G	C	T	C	C	G	C	G	G	G	C	TGG
POT8	G	G	A	G	A	A	C	T	T	C	T	C	C	G	C	T	G	G	C	AGG
POT9	A	G	A	A	A	A	C	T	T	C	T	G	G	G	C	G	G	G	C	TGG
POT10	G	G	A	G	A	A	C	T	T	C	T	C	C	C	T	G	G	A	C	TGG
POT11	G	G	A	G	A	A	G	T	A	C	C	C	T	G	C	G	G	G	C	AGG
POT12	T	G	A	G	A	A	C	T	T	C	A	C	C	G	C	G	G	G	C	AGG
POT13	G	G	A	G	A	A	C	T	T	G	C	C	C	G	G	G	G	G	C	TGG
POT14	G	G	G	G	C	A	C	T	C	C	T	C	G	G	C	G	G	G	C	GGG
POT15	G	G	A	G	C	A	G	T	T	C	G	C	G	G	C	G	G	G	C	GGG
POT16	G	G	A	G	G	C	C	T	T	A	T	C	A	G	C	G	G	G	C	CGG
POT17	G	G	A	G	A	C	C	T	T	C	T	C	T	G	T	G	G	G	C	CGG
POT18	A	G	A	G	T	C	C	T	T	C	C	C	C	G	C	G	G	G	C	GGG
POT19	G	G	A	G	A	G	G	T	T	G	T	C	T	G	C	G	G	G	C	AGG
POT20	T	G	A	G	A	A	C	C	T	C	T	C	C	T	C	G	G	G	C	AGG
POT21	G	C	A	G	A	A	C	A	G	C	C	C	C	G	C	G	G	G	C	AGG
POT22	G	G	A	G	A	T	G	C	T	C	T	C	T	G	C	G	G	G	C	TGG
POT23	G	G	A	C	A	A	C	T	T	C	T	C	T	G	C	A	G	G	C	GGG
POT24	C	A	A	G	G	G	C	T	T	C	T	C	C	G	C	G	G	G	C	CGG
POT25	A	G	G	G	A	G	C	T	T	C	T	C	T	G	C	G	G	G	C	AGG
POT26	G	G	A	G	G	C	C	T	T	C	C	C	C	G	C	G	G	G	C	CGG
sgRNA2	C	G	G	C	G	C	C	A	C	A	A	G	G	A	C	T	G	C	A	GGG
POT27	G	G	G	C	A	C	C	G	C	A	T	G	G	A	C	T	G	C	A	AGG
POT28	G	G	G	C	T	C	C	A	A	A	A	T	G	A	C	T	G	C	A	TGG
POT29	C	G	G	T	G	C	C	A	C	A	G	G	G	A	C	T	G	C	A	GGG
POT30	A	G	G	C	G	C	C	A	C	A	A	G	G	A	C	T	G	A	A	GGG
POT31	C	T	G	T	G	G	C	A	C	C	A	G	G	A	C	T	G	C	A	GGG
POT32	C	G	G	C	G	C	C	C	C	A	G	G	C	C	T	G	C	G	A	GGG
POT33	C	G	G	C	G	C	C	A	C	G	A	G	G	C	C	T	T	C	A	GAG
POT34	C	T	G	C	T	C	C	A	C	A	A	G	G	A	C	A	G	C	A	GAG

Table S2 Primers for PCR amplification of off-target sites.

Primers	Sequences (5' to 3')	Amplicon (bp)
POT1	TTAATTGGTACGTTAGCAGCAC ATGCTAAAATTACCTGCCGTGT	413
POT2	GGGCTAAGACTCCGAGTTCCCAATG ACATCACAGGTCGGAGCAGACAG	532
POT3	GCAGCCTTGAGGTTACAGCCACT AGATTCCCTGGCTGAGGCTGATG	453
POT4	CCAGGACAGAAGCCAACCAG AGGAGGCAGTAGAGGATAGA	559
POT5	TCAGGGATGGTGAGTCTTTGC TCCCACATCCTTAGCCATTCT	458
POT6	GTGGTCCCTGTGCCTTGTGC GCACAAACCGTATGTCCCTTCA	617
POT7	TAGGACAAGCATCTGTTCCCATTT GCGTGGAATGTAGCCCTGGGTC	455
POT8	CCTGCGTACACCACCCTAA TACCTATCTCAAAGGACCGAAC	531
POT9	TACCACTGAGCCGTTAGGGAA ACATCAGGGTGAGGACGAGGA	623
POT10	CCGAACGATACAGGTGGGACG TGTGGCTAGAGTGGATTGAGT	422
POT11	TCACTTATCCTGTTGGTGCCT TCCTTTCCCTAGTCCCCTCT	625
POT12	ACTGCCAACGGAAAGACTGCT GCATTTCTGGAAGGCTCTATC	459
POT13	ACACCAGTCAAGGCCAGAA ACGTGGTTTATGCGGAAGA	643
POT14	CGGGAATGCCAAATGAACAGG CCTGATGCCGAGACGCTTGTTT	624
POT15	ATGTGGTTGAGGACGATGACGAA AGCAGCATGACCGAGGACACC	417
POT16	TGCCACCATCCAAGAACCACC CCTTACCTAATGGCGCTAATGAC	412
POT17	ACTGCCGCCACCTCCCATG CAGCACCGCCGTCCTACCTG	480
POT18	ACTTGCATTGGCTGTCTCGT CCTCCCATTCTCCGTCTCCTA	403
POT19	CAGAAGTAGAAGGCAGGTGGT GTTAGCCGACTTGCTGTGATA	734
POT20	ACTTACTTGTCTTGGGCTTCC GTGCTATCGTGCCTTTCATTC	691
POT21	AGCAAAGACAGGCGAGGGACA	638

	GAGTGCTGTAGATGGCTGAGACG	
POT22	ACTGCCAGGTGGGTTCTTTAC ACTTGGACCTTGAGGATGAAC	720
POT23	ATGCAGGAGACTCAGGTTCGA CGTTATGGCTAGTTGGCTCAT	739
POT24	CATAACTCGTGCTCTGTGCTGC CCCTGGGTGGCTCAAATGGTAA	620
POT25	CCACCCATCTGGCTGGTTCCAC CGGGATGTGGAGCGGGTAGGTC	749
POT26	GCCGATCCCGCAGCTATA CAAGACGGTGACCACGAGA	597
POT27	GGGGAGCATCAGATTCAGTCG CGAGATGGCAAGGGATAGGAC	715
POT28	TGGTCCAGTTCTCACATCCTT AGGTTAGAAACACGGCCAGAT	717
POT29	AACTTCCTCCTGAGACCTAAT TAGCCGACTCCCAGACCATAC	834
POT30	GGAAGGGTGCAGCTACTTAGGG CTCCCTCAAACCTATTCAACCA	590
POT31	TGACCTTTCAGGAGGGTAG CTGCCATTCAAGTTTGCTC	493
POT32	CCCCTTCCCTCCTTACTT CTCGGGTCCGGTCATCTTA	869
POT33	TATCTCACTGGCGTCTCAAAGCA GGTCAGCGTGCCAGGTTGT	908
POT34	TCACCCGTTTGGGCTGTAGTCA CAGGTCTGGCTTCAAAGTTACGAC	732

Table S3 The embryo transfer of *EDAR* mutant cashmere goat

Recipient goat number	Date of embryo transfer	Number of embryos	Embryo type			Number of left ovarian ovulation	Number of right ovarian ovulation	Location of embryo transfer
			2 cells	4 cells	8 cells			
113139	4-Oct-16	2	1	1	0	0	1	right
919157	4-Oct-16	2	0	1	1	0	1	right
411054	4-Oct-16	2	1	1	0	0	1	right
312080	4-Oct-16	2	0	1	1	0	1	right
123401	4-Oct-16	2	1	1	0	0	1	right
306302	4-Oct-16	2	1	1	0	0	1	right
010192	4-Oct-16	2	1	1	0	0	1	right
423071	4-Oct-16	2	1	1	0	0	1	right
109132	4-Oct-16	2	0	1	1	0	1	right
419088	5-Oct-16	2	1	1	0	0	2	right
414135	5-Oct-16	2	1	1	0	0	1	right
916178	5-Oct-16	2	0	2	0	0	1	right
123405	5-Oct-16	2	1	1	0	0	1	right
919014	5-Oct-16	2	1	1	0	0	1	right
403131	6-Oct-16	5	0	3	2	1	0	left
802189	7-Oct-16	5	0	4	1	1	0	left
014285	9-Oct-16	3	2	1	0	0	1	right
816500	10-Oct-16	5	0	4	1	1	0	left
404338	10-Oct-16	5	0	5	0	0	1	right
113045	10-Oct-16	5	0	5	0	0	1	right
206225	10-Oct-16	5	0	4	1	0	1	right
004081	10-Oct-16	5	0	5	0	1	0	left
103110	11-Oct-16	4	0	2	2	1	1	right
312004	11-Oct-16	4	0	2	2	1	0	left
223406	11-Oct-16	4	0	2	2	1	0	left
916051	13-Oct-16	4	0	4	0	1	0	left
910090	13-Oct-16	4	0	4	0	1	0	left
302117	15-Oct-16	3	1	2	0	0	1	right
408009	15-Oct-16	3	1	1	1	0	1	right
301061	15-Oct-16	3	1	1	1	1	1	left
413169	15-Oct-16	2	1	1	0	0	1	right
805276	16-Oct-16	4	1	3	0	1	0	left
810132	16-Oct-16	3	1	1	1	0	1	left
215405	16-Oct-16	4	1	3	0	0	1	right
916166	16-Oct-16	3	1	1	1	1	0	left
405292	16-Oct-16	3	1	1	1	1	0	left
311169	16-Oct-16	3	1	1	1	1	0	left
922198	16-Oct-16	4	1	3	0	0	1	right

418102	16-Oct-16	4	1	3	0	1	0	left
913136	16-Oct-16	3	1	1	1	2	0	left
323056	16-Oct-16	4	1	3	0	1	0	left
402166	17-Oct-16	3	0	2	1	1	1	right
922009	17-Oct-16	4	0	3	1	1	0	left
913006	17-Oct-16	4	0	3	1	0	1	right
414044	17-Oct-16	3	0	2	1	0	1	right
910198	17-Oct-16	4	0	2	2	0	1	right
106219	17-Oct-16	3	0	2	1	1	0	left
317100	18-Oct-16	4	0	3	1	0	1	right
215163	18-Oct-16	4	0	3	1	1	0	left
218149	18-Oct-16	4	0	3	1	0	1	right
120100	19-Oct-16	4	0	3	1	0	1	right
306014	19-Oct-16	4	0	4	0	1	0	left
003146	21-Oct-16	4	0	4	0	2	0	left
118140	21-Oct-16	3	0	2	1	1	0	left
417074	21-Oct-16	4	0	4	0	1	0	left
908038	21-Oct-16	3	0	2	1	0	1	right
803069	21-Oct-16	3	0	2	1	1	0	left
903211	21-Oct-16	3	0	2	1	0	1	right
310063	21-Oct-16	3	0	3	0	0	1	right
814117	21-Oct-16	3	0	2	1	0	1	right
316112	21-Oct-16	4	0	4	0	1	0	left
212200	22-Oct-16	3	1	2	0	0	1	right
200122	22-Oct-16	3	1	1	1	1	0	left
318068	22-Oct-16	3	1	1	1	1	0	left
805154	22-Oct-16	3	1	1	1	0	0	right
115005	22-Oct-16	3	1	2	0	0	1	right
323066	22-Oct-16	3	1	1	1	0	1	right
200018	22-Oct-16	3	1	2	0	0	1	right
410070	22-Oct-16	3	1	1	1	0	1	right
316207	22-Oct-16	3	1	2	0	0	1	right
315200	22-Oct-16	3	1	2	0	1	0	left
414237	22-Oct-16	3	1	1	1	0	1	right
414168	22-Oct-16	3	1	2	0	0	1	right
205164	22-Oct-16	3	1	1	1	0	1	right
323162	22-Oct-16	3	1	2	0	0	1	right
312018	22-Oct-16	3	1	1	1	2	0	left
314143	22-Oct-16	3	1	1	1	1	0	left
910156	22-Oct-16	3	1	1	1	1	1	right
323103	22-Oct-16	3	1	1	1	1	0	left
