Supplementary Information for

Krüppel-like factor 17 upregulates uterine corin expression and promotes spiral artery remodeling in pregnancy

This PDF file includes:

Figures S1 to S9 Table S1

hCorin	GACACGGAGGATCTGTCATTACGGGTTATTATGGGTGGGACCCAGAGACGGGAGTGAAGG
chimpCorin	GACACGGAGGATCTGTCATTACGGGTTATTATGGGTGGGACCCAGAGACGGGAGTGAAGG
rhesusCorin	GACACGGAAGATCTGTCATTACGGGTTATTATGGGTGGGACCCAGAGACGGGAGTGAAGA
mouseCorin	TATGGAGGAACTGTCTCATTAAGGGTTATGGGTAGGACCCAGAGACGTGAGTGAAGG
ratCorin	${\tt TATGGAGGAGCTGTCTCATTAAGGGTTATGGGTAGGACCCAGAGACGTGAGTGAAGG}$
	-183 -175 -170 -161
hCorin	GAGGGTGTGGCCCGCGGGTGGGATCTGTAGAGCAGACAAAATATGGGGCCCCTGGCGCTT
chimpCorin	GAGGGTGTGGCCCGCGGGTGGGATCTGTAGAGCAGACAAAATATGGGGGCCCCTGGCGCTT
rhesusCorin	GAGGGTGTGGTCCGCGGGTGGGATCTGTAGAGCAGACAAAATATGGGGGCCCCTGGCCCTT
mouseCorin	GAGGGAGTGGTCTGCGGGTGGGGTCTGCCCAGCAGACAAAATATGGGGCTCCAATCCCCT
ratCorin	GAGGAGTGGTCTGAGGGTGGGGGTCTGCCCAGCA-ACAAAATATGGGGCTCCTGTCCCCT
	KLF1 KLF2
hCorin	AAAGTTCAGTTTGTCTCTCTTGAGCTTGGAGAAAATCATCCGTAG-TGCCTCCCCGGGGG
chimpCorin	AAAGTTCAGTTTGTCTCTCTTGAGCTTGGAGAAAATCATCCGTAG-TGCCTCCCCGGGGG
rhesusCorin	AAAGTTCAGTTTGTCTCTCTTGAGCTTGGAGAAAGGCATCCGTAG-TGCCTCCCCGGGGG
mouseCorin	GAGTATAACTTCACTCCG-AGTGAGGAGAAAGACACCCGTAG-TGCCTCTCCTCGAG
ratCorin	GACTACAACTTCACTCCG-AGTGAGGAGAAAGACACCCGTAGTTGCCTCTCCTAGAG
hCorin	ACACGTAGAGGAGAGAAAAGCGACCAAGATAAAAGTGGACAGAAGAATAAGCGAGACTTT
chimpCorin	${\tt A} {\tt C} {\tt A} {\tt C} {\tt A} {\tt C} {\tt A} {\tt G} {\tt A} {\tt A} {\tt A} {\tt A} {\tt G} {\tt G} {\tt A} {\tt G} {\tt A} {\tt A} {\tt A} {\tt A} {\tt G} {\tt G} {\tt A} {\tt A} {\tt A} {\tt A} {\tt A} {\tt G} {\tt G} {\tt A} {\tt A$
rhesusCorin	${\tt ACACGTAGAAGAGAGAAAAGCGACCA {\tt AGATAA} {\tt ACACGGAGAAGAAGAATAAGCGAGACTTG}$
mouseCorin	ATCCATAGAGCAGAGAAAAGCGACCGAGATAAGAGTGGACAGAGGAGAAAGAT
ratCorin	ATCCATAGAGCAGAGAAGAGCGACCGAGATAAGATGGACAGAGGATAAAGAT
	-1 GATA
hCorin	TTATCC ATG
chimpCorin	TTATCC ATG
rhesusCorin	TACTCC ATG
mouseCorin	ATG
ratCorin	ATG

Fig. S1. Conserved KLF- and GATA-binding sites in the *CORIN* promoter. Alignment of the human *CORIN* promoter sequence containing two KLF-binding sites (red) and a GATA-binding site (blue) with 5'-upstream sequences from chimpanzee (chimp), rhesus monkey (rhesus), mouse and rat *Corin* genes. The nucleotide numbering is relative to the translation initiation codon ATG (boldface). The E-box-binding site, which is located further 5'-upstream to the KLF-binding sites, is not included.



Fig. S2. Uterine expression of *Klf* genes in ovariectomized mice treated with progesterone. (*A*) Schematic illustration of the experiment. Nine days after post-op recovery from ovariectomy, C57BL/6 mice were injected with vehicle (Vec), estrogen (E_2) or progesterone (P_4) (*s.c.*, daily for three days). Uteruses were isolated for *Corin* and *Klf* expression analysis. (*B*) qRT-PCR analysis of mRNA levels for the indicated *Klf* genes. *n* = 10 per group. Data are presented as mean ± SEM; *P* values were analyzed by two-tailed Student's *t* test. ns, not significant.



Fig. S3. Effects of recombinant KLF protein expression on *CORIN* promoter activities in HL-1 cardiomyocytes. (*A*) Illustration of *CORIN* promoter constructs used. (*B* and *C*) Luciferase activities in HL-1 cells transfected with pGL3 plasmid (negative control) or co-transfected with the P236 (*B*) or P161 (*C*) *CORIN* promoter construct and a control pCMV vector (Vec) or plasmids expressing human KLF2 (K2), KLF9 (K9), KLF15 (K15) or KLF17 (K17). *n* = 3 per group. Data are presented as mean \pm SEM; ns, not significant, as analyzed by ANOVA. (*D*) Western blotting of recombinant KLF proteins in transfected HL-1 cells using an anti-FLAG antibody. Data are representative of three experiments.



Fig. S4. Immunohistochemistry of endogenous KLF2 proteins in control (uninduced) and decidualized (induced) HESCs. The experiment was done using an anti-KLF2 antibody with normal IgG as a negative control. Similar nuclear staining levels of KLF2 were found in uninduced and induced HESCs. Data are representative of three independent experiments.



Fig. S5. Additional data from ChIP analysis in HESCs and *KLF17*-KO HESCs. (*A*) ChIP analysis was done in HESCs, as shown in Fig. 5. qPCR was used to quantify levels of PCR products amplified from chromatin fragments that were pulled down with antibodies against KLF2, KLF17 and histone 3 (H3) (positive control) or IgG (negative control). As another positive control, 2% input DNA fragments were used as templates in the experiment. *n* = 3 per group. Data are presented as mean ± SEM; ns, not significant; *P* < 0.001, as analyzed by ANOVA. (*B*) The *KLF17* gene was disrupted in a second line of HESCs using CRISPR/Cas9. Partial sequencing data from WT and *KLF17*-KO HESCs are shown. Red box indicates the deleted sequence. (*C*) Western blotting of endogenous KLF17 protein in WT and *KLF17*-KO HESCs without (-) or with (+) decidualization (induction). GAPDH was a control. Data are representative of three independent experiments. (*D*) *CORIN* mRNA levels in WT and *KLF17*-KO HESCs without (uninduced) or with (induced) decidualization. *n* = 5 per group. Data are presented as mean ± SEM; ns, not significant; *P* < 0.001, as analyzed by two-tailed Student's *t* test.



Fig. S6. Generation of *Klf17^{-/-}* mice. (*A*) Illustration of WT and knockout (KO) *Klf17* alleles. Locations of PCR primers used for genotyping the WT and KO alleles are indicated. (*B*) PCR products from *Klf17^{+/-}*, *Klf17^{+/-}* and *Klf17^{-/-}* mice with WT (254-bp fragment) and KO (434-bp fragment) alleles.



Fig. S7. Analysis of Klf17 and corin expression in *Klf17*^{+/+} (WT) and *Klf17*^{-/-} (KO) mice. (*A* and *B*) Uterine Klf17 (*A*) and corin (*B*) expression in non-pregnant (NP) and pregnant (P) (G12.5) WT and KO mice was analyzed by western blotting. Samples from hearts and livers were used as controls. Recombinant KLF17 and corin expressed in transfected HEK293 cells were used as additional controls. GAPDH was a protein loading control. Data are representative of three experiments. (*C*) Cardiac *Corin* expression was analyzed by RT-PCR with hearts from NP and P (G18.5) WT and KO mice. *Gapdh* was a positive control. Samples, in which cDNA templates were omitted, were used as a negative control (Ctr). (*D*) qRT-PCR was done to verify *Corin* mRNA levels in hearts from NP *Klf17*^{+/+} and *Klf17*^{-/-} mice. *n* = 3-4 per group. Data are presented as mean \pm SEM; ns, not significant, as analyzed by two-tailed Student's *t* test.



Fig. S8. Histological analysis of an abnormal embryo from $Klf17^{-/-}$ mice. $Klf17^{-/-}$ female and male mice were mated. At G12.5 day, embryos were isolated. Top left panel shows an abnormal embryo. Histological analysis was done in H&E-stained tissue sections, revealing tissue necrosis, as shown in an image with low magnification (x 25) (top right panel) and higher magnification (x 100) (bottom two panels).



Fig. S9. Blood pressure and urinary protein levels in postpartum *Klf17*^{+/+} (WT) and *Klf17*^{-/-} (KO) mice. Systolic blood pressure (BP) (left) and urinary protein levels (right) were measured in WT and KO mice on postpartum day (PD) 7. n = 3-6 per group. Data are presented as mean \pm SEM; *P* values were analyzed by two-tailed Student's *t* test; ns, not significant.

Corin NM_016869.3 forward reverse CACTCCAGGTCCCTGG 231 Corin NM_016869.3 forward CAAGTCTGAGGTCAAGTTCCA 64 Kiff1 NM_010635.3 forward CAAGAGCTCGCACCTCAAG 92 Kiff2 NM_008452.2 forward CGCAGGACCTCCAGGCACCCAGC 61 Kiff2 NM_008453.5 forward TGCCACTTGAAGCACACA 52 Kiff3 NM_008453.5 forward TGCCACTGAGGACCACAC 52 Kiff4 NM_010637.3 forward CCCGAGGTGCAATTGTAAG 60 Kiff5 NM_011803.2 forward CCGGAGACGATCTGAAACAC 116 Kiff6 NM_011803.2 forward CCGGAGACCATCCAAGGAAACGCT 78 Kiff7 NM_033563.2 forward CCGGAGCTTCCAATGAAGGAT 72 reverse GGTACGCTCCAAGGAAAGGAT 77 72 reverse GGTACCTCCAAGGCAACTG 77 Kiff8 NM_011803.2 forward GCGCTGCAAGGAAAGGAT 77 72 Kiff8 NM_013682.3 forward GCTCGCAAGGAAAGGAT <th>Gene</th> <th>Locus</th> <th>Primer</th> <th>Sequence</th> <th>Size (bp)</th>	Gene	Locus	Primer	Sequence	Size (bp)
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Klf7 NM_033563.2 forward reverse CCGGCTACTTCTCAGCTTTG GGTAGCGTTCCAACTCAAGG 72 Klf8 NM_1773780.5 forward reverse GGTAGCGTTCCAACTCAAGG 72 Klf9 NM_010638.5 forward reverse CTCAGAACTGCTTTTCAAGCACTG 97 Klf9 NM_010638.5 forward reverse CTCAGAACTGCTTTTAACATTAGGG ACCAACCATGCTCAACTTC 61 Klf10 NM_013692.3 forward reverse CTCAGAACTGCTCAACTTC 76 Klf11 NM_178357.3 forward reverse CTTGCCACAGAACACCTTCC 65 Klf12 NM_010636.3 forward reverse CTTGGCACATGGTACTCTTGTA reverse 66 Klf13 NM_021366.3 forward reverse CTGGGCACATTGATACTGGAC GGAAGCCGGATAAAACAACA 60 Klf14 NM_001135093.1 forward reverse GGAAGCCGGATAAAAACAACA GCTGGAGCTCGAACCAGAGG 66 Klf15 NM_001355668.1 forward reverse GTGGGCCAGAAGTTTCTGACACACA reverse 62 Klf16 NM_078477.2 forward forward CACCTGCGGACCACTCCTAACCACA reverse 76 Klf17 NM_029416.2 forward forward GCAGCCATTCTGCTAACCTCTACC 77 Klf17 NM_029416.2 forward	1010	11003.2	reverse	ACAACCTTCCCATGAGCATC	70
Kill NM_00000012 reverse GGTAGCGTTCCAACTCAAGG 12 Kill NM_173780.5 forward GGGCTGCAAGGAAAGGAT 97 Kill NM_010638.5 forward CTCAGAACTGCTTTCCAAGCCACTG 97 Kill NM_010638.5 forward CTCAGAACTGCTTTTCCAAGCCACTG 97 Kill NM_013692.3 forward CTCAGAACTGCTTTTAACATTAGGG 61 Kill1 NM_013692.3 forward AGCCAACCATGCTCAACTTC 76 Kill11 NM_178357.3 forward CTTGCCACAGAACACCTTCC 65 Kill12 NM_010636.3 forward CCTTAGATAGCGTTAATGAACTGG 76 Kill12 NM_010636.3 forward CCTGGGCACATTGTACTCTTGTA 76 Kill13 NM_021366.3 forward CTGGGCACATTGTACTCTGAA 60 Kill13 NM_001135093.1 forward TGATCGAGTACCGAGGTCGT 86 Kill16 NM_078477.2 forward CACCTGCGGACTCACACA 62 Kill16 NM_078477.2 forward CACCTGCGGACTCACACA 62 Kill17 NM_029416.2 forward CACCTGCGGACTCCCAACA 62 <	KIf7	NM_033563.2	forward	CCGGCTACTTCTCAGCTTTG	72
Kif8 NM_173780.5 forward reverse GGGCTGCAAGGAAGGAT GTATCTGACTTTCCAAGCCACTG 97 Kif9 NM_010638.5 forward reverse CTCAGAACTGCTTTTCAAGCCACTG 97 Kif9 NM_010638.5 forward reverse CTCAGAACTGCTTTTCAAGCCACTG 97 Kif10 NM_013692.3 forward reverse AGCCAACCATGCTCAACTTC GGCTTTTCAGAAATTAGTTCCATT 61 Kif11 NM_178357.3 forward reverse CTTGCCACAGAACACCTTCC Teverse 76 Kif12 NM_010636.3 forward reverse CCTTAGATAGCGTTAATGAACTGG reverse 76 Kif13 NM_021366.3 forward reverse CTGGGCACATTGTACTGTGAC GGAAGCCGGATAAAACAACA 60 Kif14 NM_001135093.1 forward reverse TGATCGAGTACCGAGGTCGT GCTGGAGTCGGAACCAGAG 86 Kif16 NM_078477.2 forward reverse CACCTGCGGACTCACACA reverse 62 Kif17 NM_029416.2 forward reverse CACCTGCGGACTCACACA GCAGCCATTCTGACACGTTA reverse 77 Kif17 NM_029416.2 forward reverse CACCTGCGCACATCTCACACA GCAGCCATTCTGACACGTTA reverse 77 Kif17 NM_029416.2 forward reverse GCAGCCATTCTGCACCTACCCTCAG 77 Kif17			reverse	GGTAGCGTTCCAACTCAAGG	
Kif8 NM_173780.3 reverse GTATCTGACTTTCCAAGCCACTG 97 Kif9 NM_010638.5 forward CTCAGAACTGCTTTTAACATTAGGG 61 Kif10 NM_013692.3 forward AGCCAACCATGCTCAACTTC 76 Kif11 NM_178357.3 forward CTTGCCACAGAACACCTTCC 65 Kif12 NM_010636.3 forward CTTGCCACAGAACACCTTGT 65 Kif13 NM_010636.3 forward CTTGGGCACATGAACTGG 76 Kif14 NM_010636.3 forward CTTGGGCACATTGTATGAACTGG 76 Kif13 NM_021366.3 forward CTGGGCACATTGTACTGGAC 60 Kif14 NM_001135093.1 forward TGTGGGCCAGAGTCGTAATGAACACA 60 Kif15 NM_001355668.1 forward TGTGGGCCAGAACCAGAG 62 Kif16 NM_078477.2 forward CACCTGCGGACTCACACA 76 Kif17 NM_029416.2 forward CACCTGCGGACCATTGTACCTAGCACGTTA 77 feverse GAGACCAGGCCATTCTGCTAACCTACAG 77 77	1/160	NM_173780.5	forward	GGGCTGCAAGGAAAGGAT	97
Kif9 NM_010638.5 forward reverse CTCAGAACTGCTTTTAACATTAGGG AACACTTTCCTTTTAGCTCGTG 61 Kif10 NM_013692.3 forward forward AGCCAACCATGCTCAACTTC AGCCAACCATGCTCAACTTC 76 Kif11 NM_178357.3 forward reverse CTTGCCACAGAACACCTTCC Teverse 65 Kif12 NM_010636.3 forward forward CCTTAGATAGCGTTAATGAAACTGG reverse 76 Kif13 NM_021366.3 forward forward CTGGGCACATTGTACTGGAC CTGGGCACATTGTACTGGAC 60 Kif14 NM_021366.3 forward reverse GGAAGCCGGATAAAACAACA GCTGGAGTACCGAGGTCGT 86 Kif14 NM_001135093.1 forward reverse GCTGGAGTCGGAACCAGAG 62 Kif15 NM_001355668.1 forward reverse CACCTGCGGACTCACACA AGTGCATTGTGCACACA 62 Kif16 NM_078477.2 forward forward CACCTGCGGACTCACACA CACCTGCGACTCACACA 76 Kif17 NM_029416.2 forward reverse GCAGCCATTCTGACACCTCAG 76 Kif17 NM_029416.2 forward reverse GCAGCCATTCTGACACTCAGC 77 Kif17 NM_029416.2 forward reverse GCAGCCATTCTGACACTCAGC 77	rii0		reverse	GTATCTGACTTTCCAAGCCACTG	
Klf9 NM_010638.3 reverse AACACTTTCCTTTTTAGCTCGTG 61 Klf10 NM_013692.3 forward AGCCAACCATGCTCAACTTC 76 Klf11 NM_178357.3 forward CTTGCCACAGAACACCTTCC 65 Klf11 NM_01636.3 forward CTTGCCACAGAACACCTTCC 65 Klf12 NM_010636.3 forward CCTTAGATAGCGTTAATGAAACTGG 76 Klf13 NM_021366.3 forward CTGGGCACATTGTACTGGAC 60 Klf14 NM_001135093.1 forward TGATCGAGTGCGGAACCAGAG 60 Klf15 NM_001355668.1 forward TGTGGGCCAGAAGTTTCC 62 Klf16 NM_078477.2 forward CACCTGCGGACTCACACA 62 Klf17 NM_029416.2 forward CACCTGCGTATCCTAACCTACACA 76	KIKO	NM_010638.5	forward	CTCAGAACTGCTTTTAACATTAGGG	61
Klf10 NM_013692.3 forward reverse AGCCAACCATGCTCAACTTC GGCTTTTCAGAAATTAGTTCCATT 76 Klf11 NM_178357.3 forward reverse CTTGCCACAGAACACCCTTCC TATTTCCAATGGCCATGACAC 65 Klf12 NM_010636.3 forward reverse CCTTAGATAGCGTTAATGAAACTGG reverse 76 Klf13 NM_021366.3 forward reverse CCTGGGCACATTGTACTGGAC GGAAGCCGGATAAAACAACA 60 Klf14 NM_001135093.1 forward forward TGATCGAGTACCGAGGTCGT Teverse 86 Klf15 NM_001355668.1 forward forward CACCTGCGGACTCACACA TGTGGGCCAGAACTTCT 62 Klf16 NM_078477.2 forward forward CACCTGCGGACTCACACA CACCTGCGGACTCACACA 76 Klf17 NM_029416.2 forward forward GCAGCCATTCTGACACGTTA TCCCTAACCTCAGA 77	KII9		reverse	AACACTTTCCTTTTTAGCTCGTG	01
Kiff0 NM_013692.3 reverse GGCTTTTCAGAAATTAGTTCCATT 76 Kiff11 NM_178357.3 forward CTTGCCACAGAACACCTTCC 65 Kiff12 NM_010636.3 forward CCTTAGATAGCGTTAATGAAACTGG 76 Kiff12 NM_010636.3 forward CCTTAGATAGCGTTAATGAAACTGG 76 Kiff13 NM_021366.3 forward CTGGGCACATTGTACTGGAC 60 Kiff14 NM_001135093.1 forward TGATCGAGTACCGAGGTCGT 86 Kiff15 NM_001355668.1 forward TGTGGGCCAGAAGTTTCC 62 Kiff16 NM_078477.2 forward CACCTGCGGACTCACACA 76 Kiff17 NM_029416.2 forward GCAGCCATTCTGACACGTTA 77	1/164.0		forward	AGCCAACCATGCTCAACTTC	70
Klf11 NM_178357.3 forward reverse CTTGCCACAGAACACCTTCC TATTTCCAATGGCCATGACAC 65 Klf12 NM_010636.3 forward reverse CCTTAGATAGCGTTAATGAAACTGG GGGGATGGATGTACCTCTTGTA 76 Klf13 NM_021366.3 forward reverse CTGGGCACATTGTACTGGAC GGAAGCCGGATAAAACAACA 60 Klf14 NM_001135093.1 forward reverse GGAAGCCGGATACCGAGGTCGT GCTGGAGTCGGAACCAGAG 86 Klf15 NM_001355668.1 forward reverse CACCTGCGGACTCACACA AGTGCATTTGTGCATTTTGAG 62 Klf16 NM_078477.2 forward forward CACCTGCGGACTCACACA GCAGCCATTCTGACACGTTA 76 Klf17 NM_029416.2 forward reverse GCAGCCATTCTGCTACCTAACCTCAG 77 Klf17 NM_029416.2 forward GCAGCCATTCTGCTAACCTCAGC 77	KITTU	NM_013692.3	reverse	GGCTTTTCAGAAATTAGTTCCATT	76
Kiff1 NM_010636.3 reverse TATTTCCAATGGCCATGACAC 03 Kiff12 NM_010636.3 forward CCTTAGATAGCGTTAATGAAACTGG 76 Kiff13 NM_021366.3 forward CTGGGCACATTGTACCTCTTGTA 60 Kiff14 NM_001135093.1 forward CTGGGCACATTGTACCGAGGTCGT 86 Kiff15 NM_001355668.1 forward TGTGGGCCAGAAGTTTCC 62 Kiff16 NM_078477.2 forward CACCTGCGGACTCACACA 76 Kiff17 NM_029416.2 forward GCAGCCATTCTGCACCCTCAGC 77	K/1F1 1	NM_178357.3	forward	CTTGCCACAGAACACCTTCC	65
Klf12 NM_010636.3 forward CCTTAGATAGCGTTAATGAAACTGG 76 Klf13 NM_021366.3 forward CTGGGCACATTGTACTGGAC 60 Klf14 NM_001135093.1 forward TGATCGAGTACCGAGGTCGT 86 Klf15 NM_001355668.1 forward TGTGGGCCAGAAGTTTCC 62 Klf16 NM_078477.2 forward CACCTGCGGACTCACACA 76 Klf17 NM_029416.2 forward GCAGCCATTCTGCTACCCAACA 76			reverse	TATTTCCAATGGCCATGACAC	05
KII12 NM_010050.3 reverse GGGGATGGATGTACCTCTTGTA 76 KII13 NM_021366.3 forward CTGGGCACATTGTACTGGAC 60 KII14 NM_001135093.1 forward TGATCGAGTACCGAGGTCGT 86 KII15 NM_001135093.1 forward TGTGGGCCAGAAGTTTCC 62 KII15 NM_001355668.1 forward TGTGGGCCAGAAGTTTCC 62 KII16 NM_078477.2 forward CACCTGCGGACTCACACA 76 KII17 NM_029416.2 forward GCAGCCATTCTGCAACCTCAG 76 Feverse GACTTCTGCTATCCCTAACCTCAG 77 77	KIF1 0	f12 NM_010636.3	forward	CCTTAGATAGCGTTAATGAAACTGG	76
Klf13 NM_021366.3 forward CTGGGCACATTGTACTGGAC 60 Klf14 NM_001135093.1 forward TGATCGAGTACCGAGGTCGT 60 Klf15 NM_001135093.1 forward TGATCGAGTACCGAGGTCGT 86 Klf15 NM_001355668.1 forward TGTGGGCCAGAAGTTTCC 62 Klf16 NM_078477.2 forward CACCTGCGGACTCACACA 76 Klf17 NM_029416.2 forward GCAGCCATTCTGCACACGTTA 77 forward GCAGCCATTCTGCTATCCCTAACCTCAG 77	KIT12		reverse	GGGGATGGATGTACCTCTTGTA	70
KIF13 NM_021366.3 reverse GGAAGCCGGATAAAACAACA 60 KIF14 NM_001135093.1 forward TGATCGAGTACCGAGGTCGT 86 KIF15 NM_0011355668.1 forward TGTGGGCCAGAAGTTTCC 62 KIF16 NM_078477.2 forward CACCTGCGGACTCACACA 62 KIF17 NM_029416.2 forward GCAGCCATTCTGCACACGTTA 76 KIF17 NM_029416.2 forward GCAGCCATTCTGCACACGTTA 77	1/164.0	NM_021366.3	forward	CTGGGCACATTGTACTGGAC	60
Klf14 NM_001135093.1 forward reverse TGATCGAGTACCGAGGTCGT GCTGGAGTCGGAACCAGAG 86 Klf15 NM_001355668.1 forward TGTGGGCCAGAAGTTTCC reverse 62 Klf16 NM_078477.2 forward CACCTGCGGACTCACACA reverse 62 Klf17 NM_029416.2 forward CAGCAGCCATTCTGACACGTTA reverse 76 Forward GCAGCCATTCTGCTATCCCTAACCTCAG 77	Klt13		reverse	GGAAGCCGGATAAAACAACA	60
Kir14 NM_0011355668.1 reverse GCTGGAGTCGGAACCAGAG 60 Kir15 NM_001355668.1 forward TGTGGGCCAGAAGTTTCC 62 Kir16 NM_078477.2 forward CACCTGCGGACTCACACA 62 Kir17 NM_029416.2 forward GCAGCCATTCTGACACGTTA 76 Forward GCAGCCATTCTGCACACGTTA 77 Forward GCAGCCATTCTGCTATCCCTAACCTCAG 77	KIf14	NM_001135093.1 NM_001355668.1	forward	TGATCGAGTACCGAGGTCGT	86
Klf15 NM_001355668.1 forward TGTGGGGCCAGAAGTTTCC 62 Klf16 NM_078477.2 forward CACCTGCGGACTCACACA 62 Klf17 NM_078477.2 forward CACCTGCGGACTCACACA 76 Klf17 NM_029416.2 forward GCAGCCATTCTGCACACGGTTA 77 Forward CACCTGCTATCCCTAACCTCAG 77			reverse	GCTGGAGTCGGAACCAGAG	
Klf16 NM_078477.2 forward CACCTGCGGACTCACACA CACCTGCGGACTCACACA reverse 76 Klf17 NM_029416.2 forward GCAGCCATTCTGACACGTTA reverse 76 Klf17 NM_029416.2 forward GCAGCCATTCTGACACGTTA reverse 77	Klf15		forward		62
Klf16 NM_078477.2 Iofward CACCTGCGGACTCACACA 76 Klf17 NM_029416.2 forward GCAGCCATTCTGACACGTTA 77 forward GCAGCCATTCTGCTATCCCTAACCTCAG 77	Klf16	 NM_078477.2	forward		76
Klf17 NM_029416.2 forward GCAGCCATTCTGACACGTTA 77 Forward GCAGCCATTCTGCTATCCCTAACCTCAG 77			rovoroo		
KIF17 NM_029416.2 Teverse GACTTCTGCTATCCCTAACCTCAG	Klf17	 NM_029416.2	forward		77
			rovorac		
	Klf17	/ NM_029416.2	forward	GCGTAGTAGTGTTGGGACC	199
$Klf17$ NM_029416.2 Teverse TGCCTCATCAAATCCCCTGT 199			reverse	TGGCTGATGAAATCCGCTGT	

Table S1. Primers used in RT-PCR and qRT-PCR

Gene	Locus	Primer	Sequence	Size (bp)
Gapdh	NM_001289726.1	forward	TGTTCCTACCCCCAATGTGT	138
		reverse	GGTCCTCAGTGTAGCCCAAG	
CORIN	NM_006587.4	forward	GCAAGCAGATGGGTTTAGGA	92
		reverse	CCAGTTGGAGTGTAATGTCAGC	
PRL	NM_000948.6	forward	CAAAGGATCGCCATGGAA	60
		reverse	CACAGGAGCAGGTTTGACAC	00
GAPDH	NM_001256799.3	forward	GGTCTCCTCTGACTTCAACA	116
		reverse	AGCCAAATTCGTTGTCATAC	110