

Gene symbol	gRNA sequences		PAM
<i>Ccdc58</i>	U	ACGTTATTTATGTTGCCGAG	TGG
	D	ACTCGGTCATCTCATCGCCT	GGG
<i>D930020B18Rik</i>	U	GCCATGCGACACCCGCGACC	AGG
	D	TGTCCCCACGCCCAGTTCTG	GGG
<i>Elobl</i>	U	AGCCATTCAGTTATACCCAG	GGG
	D	CCCTAATCAATTTTTTGATG	AGG
<i>Fbxw15</i>	U	TCATCGGCAAACAAGGTAAA	TGG
	D	AAAGGCCTATTTGCAAGCCC	AGG
<i>Nlrp2</i>	U	AGTCACCGTCCAGATCTTAG	AGG
	D	GTGATTCGAGATCTAATCCT	GGG
<i>Oas1h</i>	U	GAGCAATCCGAGTGCTGCTA	AGG
	D	AATCTGTCTAGTGATCATCG	AGG
<i>Pkd1l2</i>	U	TGGTGGATCGGACTCACGGG	AGG
	D	CAGCTGCAGTTATATCCGGG	AGG
<i>Pramel34</i>	U	AAGTGGTTGATGTGATGGTG	AGG
	D	GTGGGGTCAGAAAAACAGTG	TGG
<i>Pramel47</i>	U	ACCTCTTCATCCTAAACTGG	GGG
	D	GCTTTAATGAGTTTACTAAC	AGG
<i>Sting1</i>	U	CAAAAGTGACAGGGCCCCAC	AGG
	D	ACTGACCTCATCTGAGGCAT	GGG
<i>Tspan4</i>	U	GCAGGTTGAAGGCGAACATG	AGG
	D	ACATGGTCATAGCGAAGGTG	AGG
<i>Tubal3</i>	U	CTGGTTGGCGTTGGTAGGCA	AGG
	D	TTATATATCTAATGAATTAG	AGG
<i>Zar1l</i>	U	CAGAAAAGACGCTCCATTTG	AGG
	D	AAAGACACATTGATGTCCGG	AGG

Table S1. The sequences of gRNAs used for generating 13 different knockout mouse lines (*Ccdc58*, *D930020B18Rik*, *Elobl*, *Fbxw15*, *Nlrp2*, *Oas1h*, *Pkd1l2*, *Pramel34*, *Pramel47*, *Sting1*, *Tspan4*, *Tubal3*, *Zar1l*); U: Upstream of the target site, D: Downstream of the target site.

Gene symbol	Alleles	Forward Primer	Reverse Primer	Annealing	Elongation	Band size (bp)
<i>Ccdc58</i>	KO	TTTGTGGGGAAAGGGGTACT	GATGGAACCTGTCCTCTGGA	60°C, 30 s	72°C, 30 s	645
	WT	TTTGTGGGGAAAGGGGTACT	CATACAGCTGTTTACAGGTTTGG	60°C, 30 s	72°C, 30 s	1,025
<i>D930020B18Rik</i>	KO	TCCGCCCATCGCTGTGTAGG	TCCAATCGCCAAGGAGACCC	60°C, 30 s	72°C, 30 s	577
	WT	AGATGGCGTTTGTGGCCAGG	TACACGTCTGTGCAACGTGG	60°C, 30 s	72°C, 30 s	677
<i>Elobl</i>	KO	CCAGGGCTGAGCAAAGTAAG	TGTAGCAGGCCCTATCATCC	65°C, 30 s	72°C, 30 s	672
	WT	TATTAATTGAATCCTTGGCTTTTGA	CTACCTGACTAGTGAAGCCACATTC	65°C, 30 s	72°C, 30 s	876
<i>Fbxw15</i>	KO	AGGCCACTGAAGATGGCGATCC	TGCACCATCACATTTGGCCTC	60°C, 5 s	68°C, 5 s	82
	WT	CATAGTCACATACCTACACACGCAC	TGCACCATCACATTTGGCCTC	60°C, 5 s	68°C, 5 s	605
<i>Nlrp2</i>	KO	GCTATGGCAGAAAGGTTACCAG	CATCTTCTCTTCAGCAAACCTG	60°C, 5 s	68°C, 5 s	254
	WT	GCTATGGCAGAAAGGTTACCAG	GGTGCTACCCATCATGCCTGAT	60°C, 5 s	68°C, 5 s	485
<i>Oas1h</i>	KO	ACAAACCCAGAGTGTCAGG	CCTCCCCCTTCACAGAGATTG	60°C, 30 s	72°C, 30 s	726
	WT	TTTGTCTGGTCAAGCACTGG	GTGACGGTGACCTGGTTTTT	60°C, 30 s	72°C, 30 s	707
<i>Pkd1l2</i>	KO	GCAGTGGTCCTAGGATGACC	TATGATCAGAGCATATTAGG	60°C, 30 s	72°C, 30 s	685
	WT	GCTTGTTTCATGGACCTCTGATAC	GGTCTATTTTCACCAGCATTCAG	60°C, 30 s	72°C, 30 s	669
<i>Pramel34</i>	KO	AGCCATGCATATTCATTGGG	GTGTCTTTCCAATCCTGGACCT	58°C, 30 s	72°C, 30 s	464
	WT	GAGATAGGGTTTCTCTGTATA	TGTGTACTCCTCATGCTCCC	58°C, 30 s	72°C, 90 s	1,366
<i>Pramel47</i>	KO	ACCCACAGTTGTCATCCTCC	AGCAAAGGACTCATGTGCCA	58°C, 30 s	72°C, 90 s	1,637
	WT	TCCTGGTTTCAGCTCTGCAA	GCCATGACAGTCATAAAGCC	58°C, 30 s	72°C, 60 s	891
<i>Sting1</i>	KO	TGCTGTTTCATCTCAATCTCTCCTG	CATAGTAGGGTTGGTTGAGGCTCAG	60°C, 5 s	68°C, 5 s	254
	WT	TGCTGTTTCATCTCAATCTCTCCTG	AACAAGTGCAACTCAGCTCGCTTC	60°C, 5 s	68°C, 5 s	478
<i>Tspan4</i>	KO	GCAGCAGCCTGTATGGGCGC	GTCTGGTGTCTGCTGCCACCC	65°C, 30 s	72°C, 30 s	444
	WT	GCAGCAGCCTGTATGGGCGC	GGTGAGGCAAGGACGTGGGC	65°C, 30 s	72°C, 30 s	499
<i>Tubal3</i>	KO	TATCCCATGGGTACATTGCCA	AGGCTCTCAGTTAGCAAAGGT	58°C, 30 s	72°C, 30 s	154
	WT	CACTGGTACATCACAGAAGG	TGCGTTGTTTTAGGGAAGGGG	58°C, 30 s	72°C, 30 s	418
<i>Zar1l</i>	KO	TCCACTACAGCACAGCCAAT	CCCCAAGGACTGAGTTACCA	60°C, 30 s	72°C, 30 s	638
	WT	AGAGGAGATGGGAGAGTGCTT	CACATGGTTCAGGGTCAAGA	60°C, 30 s	72°C, 30 s	647

Table S2. The sequences of primes and PCR condition used for genotyping for 13 different knockout mouse lines (*Ccdc58*, *D930020B18Rik*, *Elobl*, *Fbxw15*, *Nlrp2*, *Oas1h*, *Pkd1l2*, *Pramel34*, *Pramel47*, *Sting1*, *Tspan4*, *Tubal3*, *Zar1l*).