

Table S1. Embryonic development of Tet3 maternal KO mice. Related to Figure 1C.

Genotype of female	Genotype of male	No. of females examined	No. of total living pups	No. of total absorbed [#]	No. of total dead bodies	Average litter size (Mean ± SD)
Tet3 ^{fl/fl}	WT	6	54	2	0	9.00 ± 1.41
Zp3 ^{Cre} , Tet3 ^{fl/fl}	WT	6	45	3	4	7.50 ± 1.05
Zp3 ^{Cre} , Tet3 ^{fl/-}	WT	8	39	20	10	4.88 ± 2.64

WT, C57BL/6J strain.

[#]Absorption is evident by implantation sites without embryos

Table S2. Litter size and neonatal growth of Tet3 maternal KO mice. Related to Figure 1D.

Female	Male	No. of pairs examined	No. of delivery during 3-4 months	No. of total pups at DOB	Average litter size (Mean ± SD)	No. of total viable pups at D3*	Average viable pups (Mean ± SD)
Tet3 ^{fl/fl}	WT	7	17	119	7.00 ± 2.85	99 (83%)	5.82 ± 3.49
Zp3 ^{Cre} , Tet3 ^{fl/fl}	WT	7	18	130	7.22 ± 1.93	87 (67%)	4.83 ± 2.79

WT, C57BL/6J strain. DOB, day of birth. D3, 3 days after birth.

*All viable mice at D3 lived at least by D20.

Table S3. Embryonic development of Tet3 heterozygous mice. Related to Figure 2A.

Genotype of female	Genotype of male	No. of females examined	No. of total living pups	No. of total absorbed [#]	No. of total dead bodies	Average litter size (Mean ± SD)
Tet3 ^{+/-}	WT	7	67	5	0	9.57 ± 0.79
Tet3 ^{-/-}	WT	11	101	9	4	9.18 ± 1.54

WT, C57BL/6J strain.

[#]Absorption is evident by implantation sites without embryos

Table S4. Litter size and neonatal growth of Tet3 maternal KO mice. Related to Figure 2C.

Female	Male	No. of pairs examined	No. of delivery during 3-4 months	No. of total pups at DOB	Average litter size (Mean ± SD)	No. of total viable pups at D3*	Average viable pups (Mean ± SD)	WT/ Viable pups genotyped	Het/ Viable pups genotyped
Tet3 ^{+/-}	WT	5	13	150	11.5±1.13	137 (91%)	10.5±1.13		
Tet3 ^{-/-}	WT	9	21	197	9.38±3.47	135 (69%)	6.42±3.87	76/123 (62%)	47/123 (38%)
WT	Tet3 ^{+/-}	4	12	90	7.50±2.68	67 (74%)	5.58±3.23	44/67 (66%)	23/67 (34%)

WT, C57BL/6J strain. DOB, day of birth. D3, 3 days after birth.

*All viable mice at D3 lived at least by D20.

Table S5. Litter size and neonatal growth of pronuclear transferred embryos. Related to Figure 3.

	No. of reconstructed zygotes	No. of embryos transferred	No. of pseudopregnant females	No. of total absorbed [#]	No. of pups at E19.5	Average body weight (g) (Mean ± SD)	Average placenta weight (mg) (Mean ± SD)	No. of viable mice at D3*
NT-WT	53	53	3	18	30	1.38 ± 0.14	99.1 ± 18.9	27 (90%)
NT-KO	59	59	4	14	32	1.44 ± 0.19	97.1 ± 14.6	32 (100%)

D3, 3 days after birth.

*All viable mice at D3 lived at least by D50.

[#]Absorption is evident by implantation sites without embryos

Table S6. Summary of RRBS libraries

Samples		Total sequencing reads	Mapped reads	Percentage of mapped reads (%)	1x covered CpGs	5x covered CpGs	Bisulfite conversion rate (%)*
Sperm	rep1	16,628,193	9,461,442	57%	1,821,032	1,198,158	99.5%
	rep2	16,351,520	8,993,336	55%	1,863,052	1,115,298	99.5%
WT-Zygote	rep1	29,301,586	18,606,507	64%	1,891,545	1,344,307	99.1%
	rep2	25,202,017	15,801,665	63%	2,024,534	1,339,205	99.1%
CKO-Zygote	rep1	25,209,224	16,007,857	64%	2,012,605	1,345,112	99.1%
	rep2	28,288,621	18,161,295	64%	1,849,288	1,315,887	99.1%
WT-Blastocyst	rep1	13,986,491	8,657,638	62%	1,938,898	1,194,202	99.7%
	rep2	14,628,525	8,894,143	61%	1,782,987	1,119,954	99.7%
CKO-Blastocyst	rep1	13,622,324	8,513,953	63%	1,926,537	1,119,397	99.7%
	rep2	14,129,094	8,717,651	62%	1,985,084	1,152,511	99.7%

*Bisulfite conversion rates were estimated by non-converted cytosines in non-CpG context.