

1 **Supplementary Information**

2 **(Table S1) Supplementary Table 1.** Genotypes of pups from $Ttc9a^{+/-} \times Ttc9a^{+/-}$ crosses.

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Genotype	$Ttc9a^{+/+}$	$Ttc9a^{+/-}$	$Ttc9a^{-/-}$	Total
Actual number of pups	74	138	64	276
Expected number of pups	69	138	69	276

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5 **Table S1. Genotypes of pups from $Ttc9a^{+/-} \times Ttc9a^{+/-}$ crosses.** The table shows total number
6 of $Ttc9a^{+/+}$, $Ttc9a^{+/-}$ and $Ttc9a^{-/-}$ offspring obtained after $Ttc9a^{+/-} \times Ttc9a^{+/-}$ crosses. The
7 $Ttc9a$ KO mice follows the predicted Medelian ratio (1:2:1) of inheritance.

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9 **(Table S2) Supplementary Table 2.** Number of Male and Female pups from $Ttc9A$ KO
10 mice crossing.

Genotype	Male	Female
$Ttc9a^{+/+} \times Ttc9a^{+/+}$	69	50
$Ttc9a^{+/-} \times Ttc9a^{+/-}$	140	147
$Ttc9a^{-/-} \times Ttc9a^{-/-}$	84	50

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12 **Table S2. Number of male and female pups from $Ttc9A$ KO mice crosses.** There is no
13 significant difference in the male and female offspring ratios from $Ttc9a^{+/+} \times Ttc9a^{+/+}$,
14 $Ttc9a^{+/-} \times Ttc9a^{+/-}$ and $Ttc9a^{-/-} \times Ttc9a^{-/-}$ crosses.

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16 **(Table S3) Supplementary Table 3.** Organ Weights of female $Ttc9a$ KO mice at 3 weeks
17 and 6 weeks of age

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Organ	$Ttc9a^{+/+}$	$Ttc9a^{+/-}$	$Ttc9a^{-/-}$	$Ttc9a^{+/+}$	$Ttc9a^{+/-}$	$Ttc9a^{-/-}$
Age	3 week- organ mass (mg)			6 week- organ mass (mg)		
Spleen	0.0604 ± 0.000619	0.0627 ± 0.004079	0.074 ± 0.002590	0.0648 ± 0.004819	0.0703 ± 0.003590	0.0759 ± 0.006917
Kidneys	0.0696 ± 0.001337	0.0728 ± 0.001890	0.0727 ± 0.004035	0.1069 ± 0.005984	0.1065 ± 0.004204	0.1220 ± 0.009583
Thymus	0.0520 ± 0.003201	0.0578 ± 0.005812	0.0565 ± 0.009552	0.0674 ± 0.004291	0.0865 ± 0.0045728	0.0896 ± 0.003007
Heart	0.0578 ± 0.002126	0.0588 ± 0.001903	0.0589 ± 0.002884	0.0926± 0.005776	0.0873 ± 0.002823	0.0967 ± 0.006940

Stomach	0.0687 ± 0.003315	0.0738 ± 0.002961	0.0805 ± 0.004722	0.1176 ± 0.011668	0.1186 ± 0.003533	0.1190 ± 0.004169
Lungs	0.0913 ± 0.003422	0.0866 ± 0.004208	0.0999 ± 0.005481	0.1265 ± 0.004363	0.1251 ± 0.003467	0.1311 ± 0.005735
Pancreas	0.1049 ± 0.007229	0.1151 ± 0.005352	0.1145 ± 0.009117	0.2300 ± 0.016154	0.2629 ± 0.0188402	0.2669 ± 0.0190639
Uterus	0.0178 ± 0.001901	0.0201 ± 0.0009015	0.0183 ± 0.001628	0.0744 ± 0.016912	0.0810 ± 0.017344	0.0765 ± 0.006829
Brain	0.43268 ± 0.005449	0.4411875 ± 0.004340	0.4302 ± 0.005763	0.4421 ± 0.009069	0.4405 ± 0.008608	0.4683 ± 0.013383

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20 **Table S3. Organ Weights of *Ttc9a* KO mice at 3 wk and 6 wk of development.** A total of
 21 nine organ weights were recorded. The spleen and thymus showed significant increase in
 22 mass in the *Ttc9a*^{-/-} mice compared to *Ttc9a*^{+/+} mice. Also there was an overall increase in the
 23 organ mass in the *Ttc9a*^{-/-} mouse line compared to *Ttc9a*^{+/+}.

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25 **(Table S4) Supplementary Table 4.** Tables showing the details of the animals in each study.

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27 **Supplementary Table 4A.** The number of animals, gender and genotypes tabulated for body
 28 weights at the Post natal day 2 of development (Figure2A).

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Genotype	Gender	Postnatal day 2
Wild-type	Female	9
Wild-type	Male	7
Heterozygous	Female	12
Heterozygous	Male	7
Homozygous	Female	9
Homozygous	Male	6

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31 **Supplementary Table 4B.** The number of animals, gender and genotypes recorded for body
 32 weights at the seven different stages of development (Figure 2B and 2C)

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Genotype	Gender	4 wk	6 wk	7 wk	9 wk	10 wk	11 wk	12 wk
Wild-type	Female	10	10	10	4	4	4	4
	Male	7	2	4	4	3	3	2
Heterozygous	Female	12	16	6	6	6	6	6

	Male	18	5	5	5	5	5	5
Homozygous	Female	8	9	4	4	4	4	4
	Male	18	7	7	7	7	7	7

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35 **Supplementary Table 4C.** The number of animals and genotypes recorded for spleen and
36 thymus organ weights at 3 wk and 6 wk of development (Figure 2D and 2E)

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Genotype	Gender	3 wk	6 wk	
Wild-type	Female	5	7	38
Heterozygous	Female	8	10	39
Homozygous	Female	5	5	40
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				45

46 **Supplementary Table 4D.** Total number of animals and genotypes analyzed for mammary
47 gland morphometry at 3 wk and 6 wk of development (Figure 3)

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Genotype	Gender	3 wk	6 wk	
Wild-type	Female	3	9	49
Heterozygous	Female	7	7	50
Homozygous	Female	5	12	51
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57 **Supplementary Table 4E.** Total number of animals and genotypes analyzed for control,
58 Estradiol Benzoate and Estradiol Benzoate plus progesterone study (Figure 4)

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Genotype	Gender	Treatment	Number of animals
Wild	Female	Control	12
Wild	Female	Estradiol Benzoate	6
Wild	Female	Estradiol Benzoate plus progesterone	11
Homozygous	Female	Control	16
Homozygous	Female	Estradiol Benzoate	7
Homozygous	Female	Estradiol Benzoate plus progesterone	13

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61 **Table S4. Tabulation showing number of animals in each study.** The tables show the
62 different number of animals, gender and genotypes used for each study conducted in this
63 paper.