

Supplemental figure 1. CC breeding nomenclatures. Funnel: the generations from the initiation of mating of the G0 through inbreeding. Line: funnels only in the inbreeding stage between the G2:F1 and the point they became more than 90% homozygous. Strain: a "fully" inbred line as well as the final CC product.



Supplemental figure 2. Founder allele frequency distributions in CC populations. The colors represent the eight founder strains: A/J, yellow; C57BL/6J, gray; 129S1/SvImJ, pink; NOD/ShiLtJ, dark blue; NZO/H1LtJ, light blue; CAST/EiJ, green; PWK/PhJ, red; and WSB/EiJ, purple. A) Founder allele frequency in CC extinct funnels. B) Founder allele frequency in CC living funnels





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Supplemental figure 4. Phenotypes of 33 fertility trails in the CC es population with previously reported CC founder phenotypic values. Color backgrounds separate trails into different categories: age (peach), organ size (azure); sperm count (backge); sperm molility (gray); morphology (sky blue), testis histology (vory). T_OR1246m92_A_20X.tif: Loaded (8663, 10250)

Instructions: A left-button click is used to add a new mark based on the current mode. A rightbutton click selects the closest existing mark, and a right-button drag selects all the marks in the rectangular. Press and hold "shift" to reduce magnification.

Retrieved Centers







Glyph	Description
X	Unclassified
•	No germ cell loss
•	Loss of elongated spermatids
•	Loss of elongated and round spermatids
٠	Loss of elongating spermatids, round spermatids and earlier germ cells (spermatocytes and/or spermatogonia)
•	Sertoli cell only
	No germ cell loss , Abnormal germ cells
	Loss of elongated spermatids , Abnormal germ cells
Π	Loss of elongated and round spermatids , Abnormal germ cells
	Loss of elongating spermatids, round spermatids and earlier germ cells (spermatocytes and/or spermatogonia), Abnormal germ cells
٠	No germ cell loss , Few vacuoles
٠	Loss of elongated spermatids , Few vacuoles
۲	Loss of elongated and round spermatids , Few vacuoles
•	Loss of elongating spermatids, round spermatids and earlier germ cells (spermatocytes and/or spermatogonia), Few vacuoles
•	Sertoli cell only , Few vacuoles
M	No germ cell loss , Abnormal germ cells, Few vacuoles



Supplemental figure 5. A screen capture of the image analysis tool for testis histology annotation. A composite image from male OR1246m92 on the right, with glyphs indicating histological features.



Supplemental figure 5. QTLs of reproductive traits in CC extinct lines. Chromosomes are ordered across the x-axis with chromosome number labeled at the top. Y-axis is the LOD value. Autosomes and X chromosome were analyzed separately. Red line indicated a genome wide LOD significance threshold at P = 0.05, the gold line indicates a genome wide LOD significance threshold at P = 0.10. Light purple boxes indicated the 95% CI for QTL.



Supplemental figure 7. Genome wide genetic diversity for the six CC strains that have a PWK allele on chromosome 2.