LIST OF SUPPLEMENTAL MATERIALS

2 Supplemental Methods

1

- 3 List of strains used in this study
- 4 LSL-1 domains prediction and protein alignments
- 5 List of antibodies used in this study
- 6 Immunofluorescence in adult hermaphrodite gonads
- 7 Germline mitotic region cytological analysis
- 8 Fluorescence in situ hybridization (FISH)
- 9 Acridine orange (AO) staining
- 10 RNA-seq data analysis
- 11 Chromatin immunoprecipitation (ChIP), data processing, and analysis
- 12 Functional analysis
- 13 Supplemental Methods Bibliography
- 14
- 15 Supplemental Figures
- 16 Figure S1 *lsl-1* encodes a 318 aa Zinc-finger C2H2-type protein
- 17 Figure S2 LSL-1 homologous proteins

- 18 Figure S3 *lsl-1(ljm1)* worms exhibit *lsl-1(tm4769)* comparable altered chromatin organization
- 19 in the germline and abnormal progression through meiotic prophase
- 20 Figure S4 LSL-1 is required for the proper progression of homologous chromosome pairing
- 21 Figure S5 Analysis of the mitotic region
- 22 Figure S6 Apoptosis in *lsl-1(ljm1)* mutants
- 23 Figure S7 Germline genes expression changes in *lsl-1(ljm1)* mutants
- 24 Figure S8 Transgene *wgIs720[lsl-1::TY1::EGFP::3xFLAG]* resembles the *lsl-1* expression pattern
- 25 Figure S9 Motif analysis of LSL-1::TY1::EGFP::3XFLAG significant ChIP-seq peaks
- 26 Figure S10 LSL-1 acts mainly as a transcriptional activator of germline genes
- 27 Supplemental Figures Bibliography
- 28

29 Supplemental Tables

- 30 Table S1 Brood size, survival rate, and incidence of males determination for both *lsl-1* alleles
- **31** (at 22 °C and 25 °C)
- 32 Table S2 Cross-comparison contingency tables summary

33

- 34 Supplemental Files
- **35** File S1 DEGs summary

- File S2 TEA summary
- File S3 DEGs in *ljm1* and *tm4769* alleles direction
- File S4 LSL-1 ChIPseq results
- **39** File S5 Overlap DEGs in *lsl-1* mutants and LSL-1 bound genes