

## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: Genes differentially expressed in *MZudu* mutants v. WTs List of genes identified by RNA-seq as differentially expressed between WT and *MZudu*<sup>-/-</sup> embryos at tailbud stage. Cutoff for differential expression was adjusted p-value  $\leq 0.01$ , log<sub>2</sub> fold change  $\geq 1$ .

File Name: Supplementary Data 2

Description: Gon4l-enriched gene bodies List of genes containing at least one region within the gene body (transcription start site (TSS) to transcription end site) of Gon4l enrichment over GFP controls with adjusted p-value  $\leq 0.01$ , log<sub>2</sub> fold change  $\geq 2$ . Values included are log<sub>2</sub> fold change Gon4l/GFP across the entire gene body.

File Name: Supplementary Data 3

Description: Gon4l-enriched promoters List of genes whose promoters (2kb upstream of TSS) contain at least one region of Gon4l enrichment over GFP controls with adjusted p-value  $\leq 0.01$ , log<sub>2</sub> fold change  $\geq 2$ . Values included are log<sub>2</sub> fold change Gon4l/GFP across the entire promoter.