Supporting Information

Ririe *et al.* 10.1073/pnas.0806377105

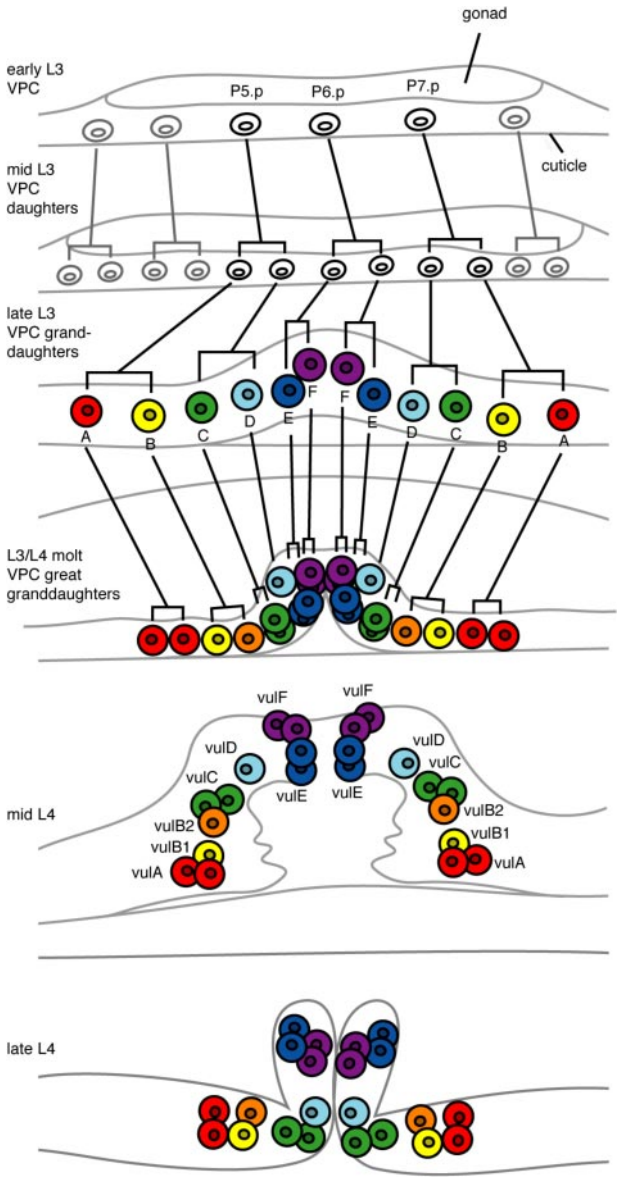

Fig. S1. Development of the vulva. The VPCs divide once during early L3 resulting in the VPC daughters. The P5.p, P6.p, and P7.p daughters then divide again during mid-L3 to form the VPC granddaughters. During late L3 each of these cells, except D, divide again to create the VPC great granddaughter cells which constitute the mature vulva. The vulval cell types vulA, vulB1, vulB2, vulC, vulD, vulE, and vulF migrate during the L4 stage as the vulva assumes its adult morphology.

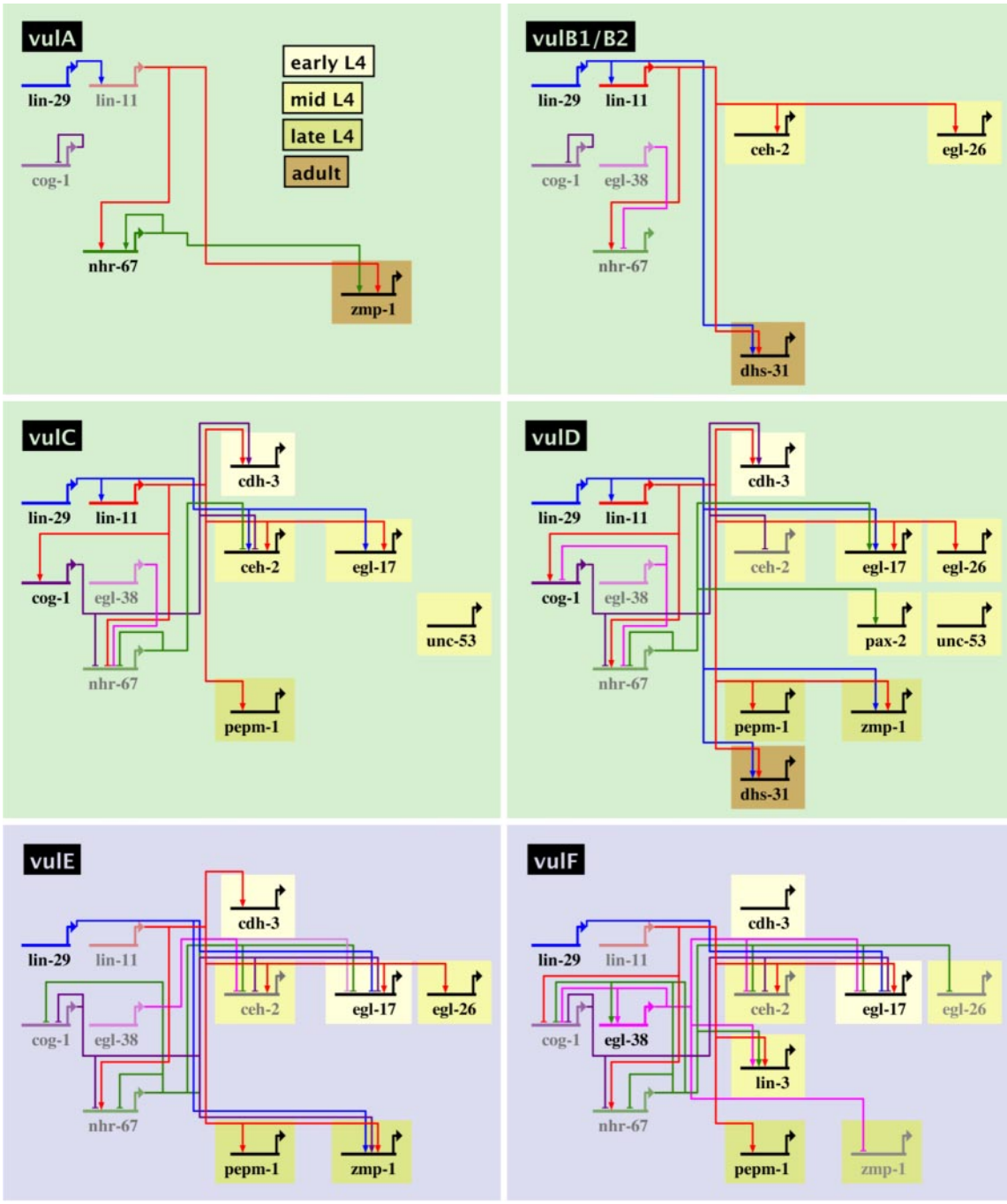

Fig. S2. GRN for *C. elegans* vulval development. The vulval GRN is divided into the cell types that comprise the vulva: vulA, vulB1/B2, vulC, vulD, vulE, and vulF. Cells with blue backgrounds arise from the 1° lineage and cells with green backgrounds arise from 2° lineages. *cog-1*, *egl-38*, *lin-11*, *lin-29*, and *nhr-67* regulate gene expression in the vulval cells and are clustered on the left in each frame. The remaining genes, clustered to the right in each frame and highlighted by colored boxes, are the genes that are expressed in the vulva in defined spatial and temporal patterns. The colored boxes highlighting these genes indicate when each gene's expression is first visualized. With the exception of *egl-17* expression in vulE and vulF, the expression of all reporter genes persists into adulthood. *egl-17* reporter transgene expression in vulE and vulF appears during the L3 stage and turns off during the early L4 stage, whereas the vulC and vulD expression appears during the mid-L4 stage and persists into adulthood. Light yellow squares indicate genes expressed beginning at early L4, yellow squares indicate genes expressed beginning at mid L4, light green squares indicate genes expressed beginning at late L4, and brown squares indicate genes expressed beginning at adulthood as indicated. Not all of the genes are expressed at the same time in each cell type. For example, *zmp-1* is expressed in vulD and vulE at late L4, but it is not expressed until adulthood in vulA. Black font indicates genes with detectable expression in a given cell type. Gray font indicates genes without detectable expression in a given cell type but that have been shown to have function in the cell type. In vulA, for example, *cog-1* reporter gene expression has not been identified, but in the *cog-1* mutant background *cog-1* expression is visible. Linkages with arrowheads indicate positive regulatory activity and linkages with bar-heads indicate repressor activity. We do not know if any of these linkages are direct.

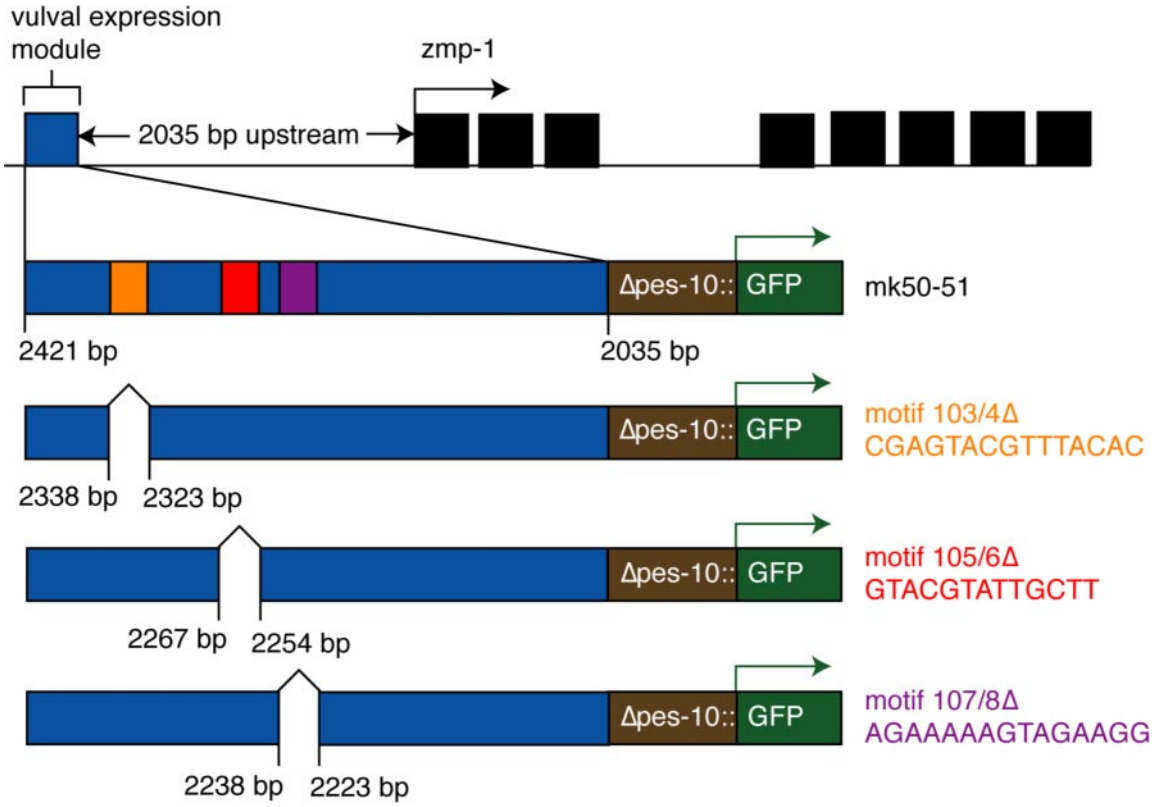

Fig. S3. Mutation of conserved subregions of the *zmp-1* vulval expression module differentially effect its expression. Several transcriptional reporter constructs containing a 386-bp enhancer element (blue box) located 2 kb upstream of the presumptive *zmp-1* translational start site (black arrow) were generated. The black boxes indicate exons. The orange, red, and purple rectangles indicate conserved motifs identified by Cistematic. Construct mk50–51 includes the vulval expression module attached to minimal Δ*pes-10*::*GFP*. The green arrow indicates the GFP translational start site. Construct 103/4Δ is the same as mk50–51 except the motif CGAGTACGTTTACAC was deleted. In construct 105/6Δ, the motif GTACGTATTGCTT was deleted. In construct 107/8Δ the motif AGAAAAAGTAGAAGG was deleted. In each deletion construct, the deleted motif was replaced by a *Sac*II restriction site.

Other Supporting Information Files

Table S1
Table S2
Table S3