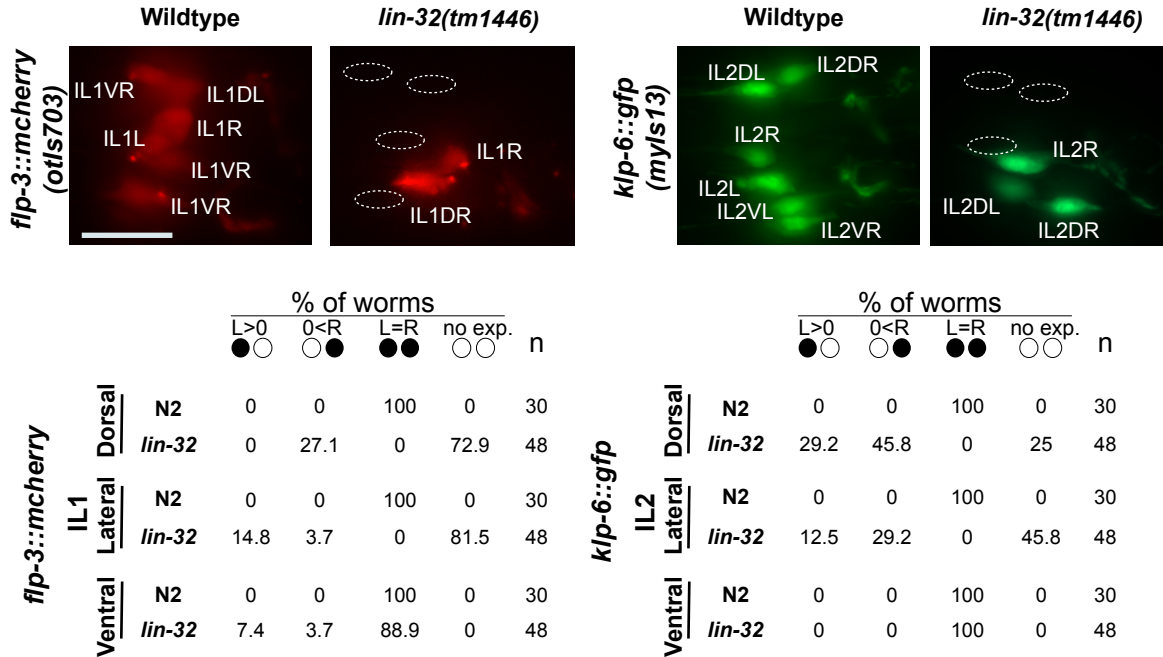


**Fig. S1: Example of NeuroPal color change in different plane of focus.** This example demonstrates how images presented at single focal planes can lead to misleading color code alterations in NeuroPAL images (see Methods). Hence, cell identifications cannot be done by using single focal planes, but requires the analysis of multi-focal image stacks.



**Fig. S2: Additional effects of *lin-32/Ato* on marker gene expression.** The terminal identity of IL1 and IL2 neurons are affected in *lin-32(tm1446)*, shown here using *flp-3::mCherry* and *klp-6::gfp* reporters. Quantification is shown in lower panels. Circles indicate bilateral homologs of the respective neuron class (L>0: Expression only in left neuron; 0<R: expression only in right neuron; L=R: expression in both neurons = wildtype).

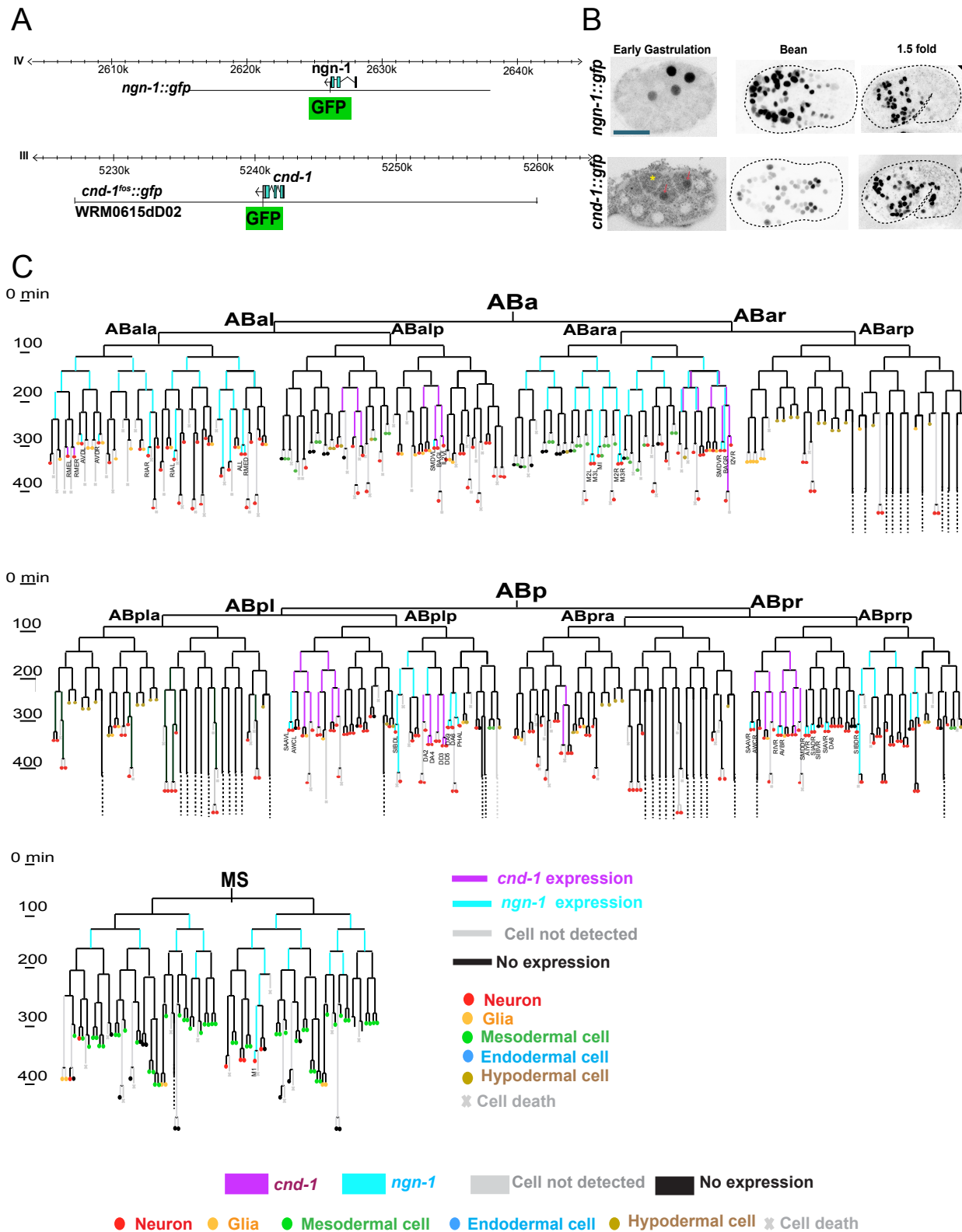


Fig.S3

**Fig. S3: Embryonic expression of the *C. elegans* neurogenin and NeuroD homologs, *ngn-1* and *cnd-1*.** **A:** Schematic of gene structure and the fosmid used for expression pattern analysis. **B:** Representative images of *cnd-1* (*otIs813*) and *ngn-1* (*nIs394*) gene expression at embryonic stages, starting from the earliest stage where the expression

starts and continuing to the time when all terminal neurons have been born. Yellow asterisk is marking the cytoplasmic autofluorescence and red arrows are pointing toward real expression inside nuclei. **C:** The full lineage of *cnd-1* and *ngn-1* expression in the AB and MS lineages; these lineages produce all but 2 of the 302 neurons in adult *C. elegans* hermaphrodites. Our analysis confirms previously published expression patterns reported for a subset of the cells shown here (Hallam et al., 2000; Nakano et al., 2010).