Temporal Neuronal Development of the Nematode C. elegans

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The nematode C. elegans comprises a simplified nervous system, with all 302 neurons accounted for at time and position of growth and at adult connectivity. These worms are transparent, and their GABAergic neurons can be fluroesced using GFP to identify neuronal promoters. Though most of these neurons have been characterized, there is no complete temporal map for their development through the embryo to adult stages of the worm. The unc-199 gene has been found to stabilize the structure of the nervous system in C. elegans. A suppressor screen of the UNC-119 protein in the unknown signaling pathway reveals the otherwise unobservable characteristics of the recessive phenotype. By SNP mapping, it is possible to pinpoint the DNA sequence of the various mutant phenotypes associated with unc-119. (Knobel et al; 2001)