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A Genetic Screen Study Muscle Development during Embryogenesis in *Caenorhabditis elegans*

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We have used available chromosomal deficiencies to screen for genetic loci whose zygotic expression is required for formation of body-wall muscle cells during embryogenesis in C. elegans. Tl test for muscle cell differentiation we have assayed for both contractile function and the expression of muscle-specific structural proteins. Monoclonal antibodies directed against two myosin heavy chain isoforms, the product of *unc-54* and *myo-3* genes, were used to detect body-wall muscle differentiation.

We have screened 86 deficiencies, covering approximately 85% of the genome. Deficiency homozygotes in most cases exhibit contractile function and stain with antibodies to the body-wall myosins. So far we have identified two regions showing distinct defects in muscle gene expression: Embryos homozygous for deficiency removing the left end of chromosome V fail to express *myo-3* nor *unc-54* products, but express antigens characteristic of hypodermal and pharyngeal development. Embryos lacking a large region chromosome III apparently express *unc-54* but not *myo-3* product. We conclude that there are likely to be at most a small number of loci whose zygotic expression is uniquely required for adoption of a muscle cell fate. Currently we are mapping those regions in order to identify such loci.