221. Progress Towards the Cloning of *lin-38* and Identification of Novel Class A SynMuv Genes

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Vulval induction in the *C. elegans* hermaphrodite requires an RTK/Ras signaling pathway and is antagonized by the products of the synthetic Multivulva (synMuv) genes. The synMuv genes are defined by at least three redundant classes: A, B, and C. Mutations in any one class are non-Muv, but mutations in any two of the classes together cause a Muv phenotype. Many of the cloned class B and C genes encode proteins predicted to act in chromatin remodeling and transcriptional repression. Four class A synMuv genes have been identified to date, three of which have been cloned and found to encode novel proteins. To further our understanding of the class A synMuv genes, we intend to clone *lin-38* and identify new class A synMuv genes.

The remaining uncloned class A synMuv gene, *lin-38*, had previously been mapped between *rol-1* and *unc-52* on chromosome II. Using SNP mapping we have placed *lin-38* in a 30 kb region. We have generated an 18 kb PCR product that contains five genes and that rescues the Muv phenotype of a *lin-38; lin-15B* strain. Currently, we are building smaller rescuing constructs and determining the sequences of candidate genes.

We are also seeking additional class A synMuv genes. All previously reported screens for class A genes were unable to recover mutations that also caused sterility, so we are doing a clonal screen to identify such mutations . We are screening using two different class B synMuv backgrounds, *lin-15B(n744)* and *lin-52(n771)*. To date we have screened 19,500 haploid genomes clonally and isolated 28 independent mutations that cause a Muv phenotype, including three that either confer sterility or are closely linked to a sterile mutation. At least 22 of these mutations are in genes previously known to cause a Muv phenotype in a class B synMuv background. We are currently determining whether any of the other mutations define new class A synMuv genes.