

1027. FUNCTIONAL STUDIES OF THE CLASS B SYNMUUVS REQUIRED FOR THE NEGATIVE REGULATION OF VULVAL INDUCTION AND CHARACTERIZATION OF A NOVEL CLASS B SYNMUUV GENE

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A receptor tyrosine kinase/Ras pathway necessary for vulval induction in *C. elegans* has been shown to be negatively regulated by two redundant pathways, defined by the synthetic Multivulva (synMuv) class A and B genes. Mutations in members of either class alone do not result in a Multivulva phenotype. However, animals containing loss-of-function mutations in both a class A and a class B gene display a synMuv phenotype. While most of the identified class A genes encode novel proteins, many of the class B synMuv genes, including *lin-35* Rb, *dpl-1* DP, *efl-1* E2F, *lin-53* RbAp48, *hda-1* HDAC, and *let-418* Mi-2, have homologs in other organisms known to be involved in chromatin modification complexes.

Three mutations that define a new class B synMuv were identified in a recent screen for additional class B genes performed with Craig Ceol and Frank Stegmeier in our laboratory. We mapped these mutations to the far left of the X chromosome and are currently attempting to clone the gene by cosmid rescue.

Several mammalian homologs of the class B synMuv genes have been shown to be components of the NuRD chromatin remodelling complex. Additionally, some of the proteins in the synMuv B pathway have been shown to physically interact either *in vitro* (1,2) or in yeast two-hybrid assays (3). We are attempting to use co-immunoprecipitation experiments to expand the current knowledge of the presumptive class B protein complex in *C. elegans*. Analysis of the effects of various mutations on co-immunoprecipitation may allow us to assign functionality to some novel class B genes. Currently, there is little understanding of how the class A and B synMuvs redundantly regulate vulval induction. Class A and B synMuvs might play redundant

roles in the formation of a chromatin modifying complex, and such physical interactions could also be demonstrated through co-immunoprecipitation experiments.

(1) Ceol, C. and H.R. Horvitz (in press).

(2) Lu and Horvitz. (1998) *Cell* **95**: 981.

(3) Walhout et al. (2000) *Science* **287**:116.