72. IDENTIFICATION AND CHARACTERIZATION OF SYNMUV SUPPRESSORS, INCLUDING A HOMOLOG OF THE CHROMATIN-REMODELING ATPASE ISWI

Erik C. Andersen, Xiaowei Lu, Scott Clark, Bob Horvitz
HHMI, Dept. Biology, MIT, Cambridge, MA 02139, USA

The receptor tyrosine kinase (RTK)/Ras, Notch, and Wnt signal transduction pathways play important roles in the formation of the *C. elegans* vulva by influencing developmental fates. Another group of genes that function in the specification of vulval cell fates by antagonizing the RTK/Ras pathway is the synthetic Multivulva (synMuv) genes. The synMuv genes act in two functionally redundant classes, A and B, to negatively regulate vulval development. Animals with a mutation in one or more genes within the same class are non-Muv. By contrast, animals with mutations in both class A and class B genes are Muv. Among some of the identified class B gene products are counterparts of Rb (*lin-35*), the Rb-associated protein RbAp48 (*lin-53*), the heterodimeric transcription factors DP (*dpl-1*) and E2F (*efl-1*), and the chromatin-associated proteins HDAC (*hda-1*), Mi-2 (*let-418*), and HP1 (*hpl-2*). The three molecularly characterized synMuv A genes encode novel proteins of uncharacterized function.

To understand more about the interactions between the synMuv A and B pathways and their link(s) to the RTK/Ras pathway, two screens for synMuv suppressors were performed. In these screens, 80 suppressors of the synMuv phenotype of *lin-15AB(n765ts)* and 41 suppressors of the *lin-53(n833); lin-15A(n767)* synMuv phenotype were isolated. We will present the mapping, complementation, and genetic characterization of some of these suppressors.

One suppressor of *lin-53(n833); lin-15A(n767)* was cloned and found to be a homolog of the chromatin-remodeling ATPase ISWI. RNAi of the ISWI homolog suppresses the Muv phenotype of most, if not all, synMuv combinations. Therefore, the ISWI homolog may be required for the ectopic induction of vulval fates observed in synMuv mutants. Genetic characterization is underway to confirm these observations. Additionally, we are seeking a deletion allele and producing an antibody.