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Cloning and characterization of the class A synthetic multivulva genes

EM Davison, B Horvitz

HHMI, Dept. Biology, MIT, Cambridge, MA 02139

The receptor tyrosine kinase/Ras pathway essential for vulval induction is negatively regulated by two redundant pathways. Hermaphrodites mutant in only one of these two pathways (A or B) appear wild-type. Hermaphrodites mutant in both pathways (A and B) exhibit the synthetic Multivulva (synMuv) phenotype.

Recent studies have shown that the class B synMuv genes inhibit Ras-mediated vulval development via an Rb/E2F/DP-mediated pathway (1,2). The class A synMuv genes function in parallel to this Rb pathway, but the molecular mechanism by which they inhibit vulval development is not known.

Various screens for multivulva animals have defined four genes in the synMuv class A pathway: *lin-8*, *lin-15A*, *lin-38*, and *lin-56*. Of these genes, only the *lin-15A* locus has been cloned previously (3,4). *lin-15A* encodes a novel protein with no recognizable functional or structural motifs. To elucidate the mechanism by which the class A synMuv genes inhibit the Ras pathway, we have cloned *lin-56* and *lin-8*. Both appear to encode novel proteins. We are currently working toward characterizing the expression pattern of *lin-56*. Progress in the mapping of *lin-38* will also be reported.

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