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Knockout flies

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William Wells
Email: wells@biotext.com

The closest that *Drosophila* geneticists have come to 'reverse genetics' thus far has been the fortuitous insertion of a transposable P element in or near their gene of interest. In the 16 June Science, Rong and Golic present a system that may allow the mutagenesis of a specific gene by homologous recombination (*Science* 2000, **288**:2013-2018). They introduce three elements into flies: the FRT recombinase, a rare-cutting endonuclease, and a copy of the target DNA with sites for the FRT recombinase at either end. When induced, the recombinase converts the introduced DNA into a circle, which is then linearized by the endonuclease. This double-stranded break is recombinogenic. Although Rong and Golic restore function to a previously mutated gene, use of a vector modified to look like yeast knockout vectors should produce knockouts in flies.

References

1. Targeted gene replacement in Drosophila via P element-induced gap repair.

2. Science magazine, [http://www.sciencemag.org/]