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Insecticide resistance

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The molecular mechanisms underlying insecticide resistance are poorly understood. In the September 27 *Science*, Philip Daborn and colleagues report the involvement of a specific cytochrome P450 gene, called *Cyp6g1*, in the resistance of *Drosophila melanogaster* to the xenobiotic toxin DTT (*Science*, **297**:2253-2256, September 27, 2002). Daborn *et al.* used a DNA microarray containing fragments of all 90 *Drosophila* P450 genes to screen a DTT-resistant strain. They found that the *Cyp6g1* gene is overexpressed 10 to 100-fold compared to sensitive strains. The P450 allele in resistant strains contained an insertion of an *Accord* transposable element in the 5' end of the *Cyp6g1* gene. To demonstrate that P450 expression is sufficient to confer insecticide resistance, Daborn *et al.* show that transgenic flies overexpressing *Cyp6g1* were resistant to DTT.

References

1. *Science*, [<http://www.sciencemag.org>]
2. Cytochromes P450 of insects: the tip of the iceberg