

Scientists study fighting flies

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U.S. researchers say they have conducted the first comprehensive molecular analysis of aggressive behavior in a laboratory species.

Dr. Herman Dierick and Ralph Greenspan of The Neurosciences Institute in San Diego developed an original set of assays to record and quantify aggression in the fruit fly *Drosophila melanogaster*.

Dierick and Greenspan devised a "two-male arena assay," in which 20 pairs of males were placed in a chamber containing separate arenas and assessed for several parameters related to aggression. More aggressive males were then mated to random females, a procedure that was repeated for more than 20 generations.

The scientists found flies in the final generation were 30 times as aggressive as those in the first generation.

The researchers say approximately 80 genes were significantly differentially expressed between the more aggressive and less aggressive flies. One of the genes, *Cyp6a20*, when mutated, by itself had a significant effect on aggressive behavior.

Although no generalization is possible from the preliminary data, the researchers said their assay and approach used should set a new standard for the genetic analysis of aggressive behavior.

The study appears in the journal *Nature Genetics*.

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