

Drunken fruit flies help scientists find potential drug target for alcoholism

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A group of drunken fruit flies have helped researchers from North Carolina State and Boston universities identify entire networks of genes—also present in humans—that play a key role in alcohol drinking behavior. This discovery, published in the October 2009 print issue of the journal *GENETICS*, provides a crucial explanation of why some people seem to tolerate alcohol better than others, as well as a potential target for drugs aimed at preventing or eliminating alcoholism. In addition, this discovery sheds new light on many of the negative side effects of drinking, such as liver damage.

"Translational studies, like this one, in which discoveries from model organisms can be applied to insights in human biology, can make us understand the balance between nature and nurture, why we behave the way we do, for better or worse, and what makes us tick," said Robert Anholt, a Professor of Biology and Genetics at North Carolina State University, Director of the W. M. Keck Center for Behavioral Biology, and one of the senior scientists involved in the work.

To make this discovery, Anholt and colleagues first measured the amount of time it took for the fruit flies to lose postural control after exposure to [alcohol](#). At the same time, changes in the expression of all the flies' [genes](#) were recorded. Using statistical methods to identify genes that work together, the scientists were able to pinpoint specific genes that played a crucial role in adaptation relating to alcohol exposure. Armed with this information about fruit flies, the scientists set out to determine if the same genes contribute to alcohol drinking habits in

humans. Indeed they do: expression of the human counterpart of a critical gene in [fruit flies](#) could be directly tied to alcohol consumption in humans.

"From a scientific point-of-view, research like this is almost intoxicating," said Mark Johnston, Editor-in-Chief of the journal *GENETICS*. "We've known for a while now that genetics played a role in [alcohol](#) consumption, but now, we actually know some of the genes that are involved. As a result of this work, we have a potential drug target for curing this insidious condition."

Source: Genetics Society of America

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