Study Finds a New Culprit for Epileptic Seizures

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In a study of fruit flies, the researchers identified a glial-cell mutation that makes the flies much more prone to epileptic seizures. Mutations in the gene, which influences glial cells' communication with neurons, appear to make neurons much more excitable. That excitability makes the flies more likely to seize in response to environmental stimuli, such as extreme temperatures.

This is the first time anyone has shown, in living animals, that mutations in glial cells can produce epileptic seizures. Counteracting the effects of the glial mutation may be a promising new strategy for developing epilepsy treatments, says Troy Littleton, an MIT professor of biology and leader of the research team.

"This signaling pathway from glia to neurons likely controls the firing properties of neurons, and if it's hyperactivated, the neurons fire too much. Anything that would prevent that hyperactivity might be a potential therapeutic," says Littleton, who is also a member of MIT's Picower Institute for Learning and Memory.

Littleton and lead author Jan Melom, a graduate student in MIT's Department of Biology, described their new findings in the Jan. 16 online edition of the Journal for Neuroscience.

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Source: Massachusetts Institute of Technology [1]

Links:
[1] http://web.mit.edu/press/2012/study-finds-new-culprit-for-epileptic-seizures.html