

Mouse genes guide search for human anxiety disorder genes

October 23 2008

We are all familiar with the question - "Are you a man or a mouse?" What if the answer is "a little of both"? Because of the power of molecular genetics research in animals and the maturation of animal models, the path to identifying genes involved in particular types of behavior, such as fear, is much clearer in animals than in humans. There is new evidence that the genes implicated in these animal models may be directly applicable to humans.

A new genetic association study, appearing in the October 15th issue of *Biological Psychiatry*, evaluated genes that may be associated with the risk for human anxiety disorders.

The scientists utilized a cross-species approach and tested 13 human homologs of genes that had previously shown to be differentially expressed in mouse strains that differed in their innate anxiety levels. The authors then studied groups of humans with anxiety disorders and found some evidence of association among six of these genes and particular anxiety disorders. The strongest associations were between variation in ALAD with risk for social phobia, DYNLL2 with risk for generalized anxiety disorder, and PSAP with risk for panic disorder.

John H. Krystal, M.D., Editor of *Biological Psychiatry* and affiliated with both Yale University School of Medicine and the VA Connecticut Healthcare System, comments, "This intriguing study by Donner and colleagues harnesses the power of the animal models to guide the search for genes that contribute to the risk for human anxiety disorders. This



process led to a number of interesting candidates for future study."

Corresponding author Iiris Hovatta, Ph.D., further explains, "We found gene variants that seem to specifically predispose to certain anxiety disorder types, such as panic disorder, social phobia or generalized anxiety disorder. These findings give us an excellent starting point to investigate their molecular function in the brain and how the proteins coded by these genes regulate anxiety."

These findings still need to be replicated, and further research will be necessary to understand the extent that these specific genetic variants play in predisposing one to developing an anxiety disorder. However, as the authors conclude in their article, "Nevertheless, our results illustrate the potential utility of cross-species approaches in the identification of susceptibility genes for human psychiatric disorders."

Source: Elsevier

Citation: Mouse genes guide search for human anxiety disorder genes (2008, October 23) retrieved 27 April 2024 from <u>https://phys.org/news/2008-10-mouse-genes-human-anxiety-disorder.html</u>

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