Fruit fly studies help explain human heart

December 20 2005

Researchers at The Burnham Institute for Medical Research in San Diego have obtained detailed insights into the early formation of the human heart.

A team lead by Dr. Rolf Bodmer found two proteins -- called Robo and Slit -- are required for normal development of the heart and malfunction of either protein results in congenital heart defects.

Working with Drosophilia melanogaster, also known as the fruit fly, the researchers showed the Slit and Robo proteins accumulate in a specific alignment during the formation of the heart tube, a linear tube representing the primitive heart before its cells assume their rhythmical contractile functions. Proper alignment of the heart tube cells is critical for heart assembly and proper shape, or morphology and mutation of the proteins results in observed heart defects.

"These findings provide understanding of early controls in heart development, and we are eager to conduct further studies to reveal how these controls are executed," said Rolf Bodmer, corresponding author in the study.

The findings appear in the journal Current Biology.