



## Drosophila: A Versatile Model Organism

Radhika Khanna, Neha Gulati, Sujata Mohanty \*

Department of Biotechnology, JIIT, Sector-62, Noida-201307, India

Address for Correspondence: Sujata Mohanty; [sujata.mohanty@jiit.ac.in](mailto:sujata.mohanty@jiit.ac.in)

**ABSTRACT:** More than 3500 species of *Drosophila* and related genera inhabit in continents except Antarctica, occur in practically every type of habitat and show a great variety of morphological, behavioral and life history traits. *Drosophila* has the longest history of any model organism i.e. for over 100 years and thousands of scientists around the world work on it to gather more useful and productive information on population genetics and developmental biology. Full genome sequence from total of 12 species promise to extend this work by facilitating comparative studies of gene expressions of molecules such as protein, of developmental mechanism and of ecological adaptations. *Drosophila* as a model system shares a strong relationship with the humans. It has such striking genome similarity and closeness (more than 70%) with the humans that the sequences of newly discovered human genes, including disease genes can often be matched against their fly counterparts. This provides a lead towards the function of the human gene and could help in the development of effective drugs. The analysis of embryonic development has made particular contribution to understanding of developmental processes in humans. *Drosophila* research has already led the way in providing new insights into forms of cancer, cardiovascular diseases, neurodegenerative diseases, behavior, immunity, aging, multigene inheritance, and development. Researchers have found that the underlying biochemistry of fruit flies and humans is remarkably similar; therefore fruit flies could be a potential human disease model to understand the genetic and molecular reason behind. © 2014 iGlobal Research and Publishing Foundation. All rights reserved.

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