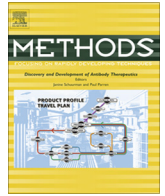


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Guest Editor's Introduction

Drosophila developmental biology methods



For over 90 years, *Drosophila melanogaster* has been used extensively to identify genes involved in developmental and cellular processes. The contributions made by studies in *Drosophila* are numerous, and many important discoveries were first made in this organism. The relevance of the *Drosophila* model relies on the extraordinary evolutionary conservation of many of the basic processes of development and of nearly all of the basic signal transduction mechanisms and transcriptional regulators between insects and vertebrates. More than ever discoveries in the field rely on the application of novel methods with increased sensitivity, resolution, scale, speed, and quantitative analyses. The goal of this special issue of *Methods* was to provide students and postdocs a comprehensive set of practical reviews that describe up-to-date resources and protocols used to address questions in developmental biology, cell signaling, and cell biology in *Drosophila*.

The idea behind this issue was not to rehash already published work but instead to describe new or improved protocols and refer as needed to already existing materials. A number of excellent textbooks and many comprehensive reviews on the topics covered in this issue are available to *Drosophila* researchers. Classic available textbooks include: "*Drosophila: A Laboratory Handbook*" by M. Ashburner, K. Golic, and S. Hawley; 2004; "The Development

of *Drosophila melanogaster*" by M. Bate and A. Martinez Arias; "Fly Pushing: The Theory and Practice of *Drosophila* Genetics" by R. Greenspan; and "*Drosophila* Cells in Culture" by G. Echaliier. In addition to these seminal textbooks, many reviews and protocols have been published over the years providing updates in various areas. Of special interest is a set of protocols and methods published in 2008 ("*Drosophila: Methods and Protocols*" by C. Dahmann). The numerous advances in the field in recent years called for a new series of chapters to provide the community with updated protocols to facilitate work in the field. This issue attempts to do this by compiling chapters written by experts in the field covering topics broadly subdivided into four categories: (1) General tools; (2) Tools and methods for studying cellular processes; (3) Tools and methods for studying signaling pathways; and (4) Tools and methods for studying tissue/organs. We hope that we have succeeded at providing *Drosophila* practitioners with a useful resource. I want to thank Don Prince at *Methods*, and my assistant Laura Holderbaum, for the help bringing this issue together.

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