

## BOOK REVIEW

### Mobile DNA II

#### Site specific recombination and transposition: advances and applications

NL Craig, R Craigie, M Gellert and AM Lambowitz  
ASM Press, Washington, DC; 2002. 1204 pp.  
\$169.95, hardback. ISBN 1-55581-209-0

*Heredity* (2004) 92, 476. doi:10.1038/sj.hdy.6800416

Reviewed by PR Herron

It would have been impossible to predict the pace and scale of the advances that have taken place in the study of site-specific recombination and transposition during the last 15 years. Today, it is appreciated that a wide variety of different types of DNA move from place to place and that these recombination reactions underlie many kinds of biological transactions. Mobile DNA II provides an invaluable resource for those working in areas to which the study of transposition and site-specific recombination has contributed, such as protein–nucleic acid interactions, DNA and chromosome structure; RNA splicing; DNA replication, repair, and recombination; evolution and analysis of gene function through mutagenesis. This book is an extension of Mobile DNA published by ASM Press in 1989, and its content reflects the rapidity with which advances in the field have occurred and how the analysis and dissection of a number of recombination systems has now moved to the structural and mechanistic level.

It describes what mobile DNAs are and documents the analysis of the chemical steps in recombination reactions and goes on to examine the cellular role, movement, and exploitation of mobile DNAs in both prokaryotic and eukaryotic organisms. After an introductory section, the contributions are primarily organized by the mechanism of recombination. The 49 sections of the book are

intended to assist scientists and students at all levels and, broadly speaking, can be divided into two areas. Firstly, the use of rearrangements carried out by conservative site-specific recombination systems such as tyrosine recombinase-specific recombination, Xer site-specific recombination,  $\lambda$  integrase and the use of Cre-lox recombination to manipulate genes and chromosomes. However, the bulk of mobile DNA II focuses on the genetic elements and processes such as transpositions that use nonhomologous recombination to create new combinations of DNA. The coverage of this area of recombination is also exhaustive and comprehensive, and is divided into sections on transpositions that involve DNA intermediates, transpositions that involve DNA and RNA intermediates, mobile introns and retrotransposons, gene conversions, and a section on the contribution of mobile DNA to genomic evolution. Each chapter is written by specialists in that particular field, with the inevitable variation in style and focus, and, despite the multitude of contributors, the clarity and content of the writing is almost exclusively excellent. The index is comprehensive and well structured, and will assist its use as a reference work; despite this, it is felt that the inclusion of World Wide Web Links and resources would have been a valuable addition to the volume.

This book is an excellent resource for lab workers, particularly graduate students, who will find it particularly useful as a starting point and overview of their particular system of interest. It will prove an important, if not essential, addition to any library and laboratory at institutes where molecular genetics is taught or researched.

PR Herron

*Department of Biosciences, University of Strathclyde, Royal College Building, 204 George Street, Glasgow G1 1XW, UK*

E-mail: paul.herron@strath.ac.uk