

## Book review

### Gene Transcription: Mechanisms and Control

RJ White  
Blackwell Scientific Ltd, Oxford; 2000. 273 pp. £29.50,  
paperback. ISBN 0-632-04888-3

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'*Gene Transcription*' provides the reader with a good background in the rapidly moving, cutting edge field of transcription, and includes recent developments up to the year of publication. The focus is almost entirely on eukaryotic transcription drawing on details from animals and fungi, with little specific information from plants (or prokaryotes and archaea). This focus correctly reflects the advances being made in the field of eukaryotic gene regulation.

The book is largely aimed at providing the non-expert with the established theories of transcription. The target audience would be researchers entering the field of transcription, or those who want to keep abreast of the field. It is also a suitable text for advanced undergraduates studying gene regulation.

Briefly the book covers a very basic introduction to the concept of transcription; an introduction to the three nuclear RNA polymerases; the current concepts of transcription factors and their interaction with DNA; a detailed look at both basal and activated transcription by RNA polymerase II; transcription by RNA polymerase I and III; chromatin structure in relation to transcription; production, localisation, and activity of transcription factors; regulation of transcription via the cell cycle; the interaction of transcription with other nuclear process including RNA processing, and DNA replication and repair; and the involvement of transcription factors in development (using *Drosophila* embryogenesis as an example). The earlier chapters also provide essential

background for understanding the examples given later in the book.

The author has wisely chosen to use only a selected group of transcription factors to illustrate the many different principles outlined in this text. This avoids over complication of the subject through attempting to introduce the multitude of known transcription factors, and allows a more detailed picture to be drawn of a few selected systems. Additionally, the jargon associated with the field has been avoided where possible for the non-expert.

The book is well structured and contains many clear line drawings to facilitate the readers conceptualisation of the text. Interspersed throughout the text are 'method boxes' that outline key experimental approaches used in transcription studies. Each chapter ends with a further reading section including review papers and selected papers.

The main omissions are a lack of detail when covering the mechanism of how transcription is repressed. Also, the importance of histone methylation, which has only recently come to light in the latter part of 2001 is an unavoidable omission.

Overall this text offers a comprehensive introduction to the fascinating subject of transcriptional regulation. And, given the spacial constraints of the text, covers much ground through the use of a limited number of specific systems. There is an underlying focus on human disease, which may not appear of relevance to some readers. However, given the conserved nature of the mechanisms of transcription across eukaryotes this should not be viewed negatively, the principles addressed will give the reader a solid grounding in the field.

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