

Book Reviews

Principles and Practice of Clinical Virology. 3rd edn.; Edited by A.J. Zuckerman, J.E. Banatvala and J.R. Pattison; Wiley and Sons, Chichester, 1995. xi + 766 pp. £79.95 (hb). ISBN 0 471 93106 3

This book, first published in 1987, is now in its third edition which attests both to its popularity and the recent rapid progress in clinical virology. It provides an overview of the subject which is suitable for a general medical audience, including medical students, as well as for clinical virologists. However, it is not exhaustive in detail nor is it completely referenced.

The editors have enlisted 44 authors for 25 chapters, each of which deals with either a group of viruses (e.g. hepatitis viruses) or a single agent (e.g. cytomegalovirus). Each topic is covered from the point of view of basic virology, pathogenesis, epidemiology, clinical features, diagnosis, treatment and prevention. All the chapters have been revised and some completely rewritten in the light of new information, and many of the authors stress the development and application of molecular biological techniques to diagnosis. The chapters on rubella, human parvovirus B19, viruses associated with acute diarrhoeal disease and filoviruses are particularly up to date, but the chapter on reoviruses is rather limited given the enormous clinical problems posed, in particular, by HIV. As regards the hepatitis viruses, the clinical significance of the different genotypes of hepatitis C virus

should have been discussed. A more important omission is the lack of a separate chapter on antiviral therapy; antiviral drugs are of course referred to throughout but a systematic description would be extremely useful.

Excellent diagrams, tables, graphs, electron micrographs and other helpful illustrations add to the value of the book as an educational volume, but it is perhaps inevitable that in a multi-author text there is some repetition and the occasional error. For example, human herpesvirus-7 is not included in Table 1.1, which gives the classification of the human herpesviruses, but is described in some detail in a later chapter. Moreover, if the editors had imposed greater uniformity of layout and presentation between the chapters it would have made the book easier to use for reference.

In summary, this is a good introductory text on clinical virology but the already knowledgeable individual will need to go to other sources for more extensive treatment and detailed references. Nevertheless, it fulfills a useful niche and should be stocked in all medical libraries.

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Transcriptional Control of Cell Growth: The E2F Gene Family; Edited by P.J. Farnham; Springer, Berlin-Heidelberg-New York, 1996. vi + 141 pp. DM 172.00 (hc). ISBN 3 540 60113 9

The E2F transcription factors are believed to be key regulators of cell cycle progression in mammalian cells. E2F activity in mammalian cells was first described ten years ago, the first gene in the family was cloned four years ago, and since then a total of seven genes belonging to this family of transcription factors have been isolated. Interest in the function of the E2F transcription factors has steadily increased through the last few years, in particular since it was demonstrated that these molecules are key targets for the retinoblastoma protein, and the closely related relatives of this tumour suppressor protein. Now, the first book devoted to the description of the E2F gene family and its likely function in cell cycle progression has been published. In this book, four chapters are devoted to a comprehensive review of the E2F gene family, and one chapter describes start-specific transcription in yeast. In a final chapter the editor summarizes the main conclusions and models for how the E2Fs exert their control in the eukaryotic cell cycle, which questions remain unanswered, and the likely future directions for research in the E2F gene family.

By four extensive reviews written by authors who work in the E2F field, the editor manages to cover almost all of the published literature about E2F transcription factors (until the middle of 1995). The first chapter describes how the E2F genes were identified and cloned, the structure and function of the various domains in the proteins, the expression pattern of the genes, and some of the genes whose expression is regulated by the E2Fs. Chapter two deals with how the activity of the E2Fs is regulated through various protein-protein interactions and phosphorylation events, including the inhibition of E2F activity by binding of members of the retinoblastoma protein family and

phosphorylation by the cyclin A/CDK2 kinase. In chapter three, Cress and Nevins describe how the Adenovirus evolved a mechanism to use the E2F transcription factors to induce S-phase (and thereby produce the proteins required for Adenovirus DNA replication), and for the expression of its own E2 promoter. Moreover, other viruses (Simian Virus 40 and Human Papilloma Virus) have evolved that induce virus DNA replication and transformation of the host cell by inactivation of the retinoblastoma protein, and thereby activation of the members of the E2F transcription factor family. In chapter four, Adams and Kaelin describe the various cellular effects of E2F overexpression, that includes S-phase induction followed by apoptosis or – in the case of low levels of overexpression – transformation of tissue culture cells.

This book provides an excellent and comprehensive description of the E2F transcription factors, and it contains some useful figures and tables that provide the reader with a good overview of the knowledge gained until 1995. As such the book will be an excellent although lengthy introduction to researchers working in cell cycle regulation. In particular, chapter two concerning the regulation of E2F activity by the retinoblastoma protein and its homologues is very well written with a good critical analysis of the published literature. The only criticism, I will put forward, is the lack of such standard in chapter one, in which all published results are referred to without considering or describing the caveats of the experiments. In conclusion, however, I will recommend this book to any person who is interested in cell cycle regulation.

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