A Laboratory Guide to In Vitro Studies of Protein–DNA Interactions; Edited by J.P. Jost and H.P. Saluz; Birkhäuser Verlag, Basel, 1991; 326 pages. SFr 128.00, ISBN 3764326271

An understanding of the mechanism which underlies tissue and stage-specific gene expression is one of the major goals of current biological research. A number of families of protein transcription factors have now been identified and the presence of conserved motifs has meant that isolating genes coding for these classes of protein by homology cloning has become commonplace. Thus, an increasing amount of research effort is being devoted to finding binding sites, and eventually a role, for these proteins. This worthwhile book aims at providing a set of protocols to achieve these aims.

The text is divided into eight sections with each section devoted to describing related methodologies. For example, the first section on the study of protein–DNA interactions using enzymes groups together DNase I footprinting, exonuclease III protection and proteolytic clipping band shift assay. Although I think that this is a reasonable way of dividing the text, the section on Gel Mobility-shift Assays would have been a more appropriate starting point, as many of the techniques rely on this procedure.

Indeed, I think that the three entries under the gel mobility shift heading are some of the most useful in the book. Most of the analytical procedures that I would have expected to find are included, and I was pleased to see that room was made for a description of how to clone sequence-specific DNA-binding proteins by screening cDNA expression libraries with radiolabelled binding-site probes. There is also a section on the role of the electron microscope in defining where proteins bind to DNA.

On the whole the book is easy to use and the step-by-step instructions are easy to follow. Each of the contributions is well referenced and the book has a series of appendices at the back listing some useful associated techniques, such as preparation of nuclear extracts. For anyone who has a putative DNA-binding protein and wants to know where it binds this will prove to be a very useful laboratory guide.

R.K. Dudley


Cytokines are hormone-like proteins induced by a variety of cell types. They are extremely potent molecules and may exhibit either autocrine or paracrine properties. Cytokine research is very much a multi-disciplinary science. The identification, cloning and assay of these molecules requires a knowledge of genetic, biochemical and cell culture techniques. This recent addition to the 'Practical Approach' series from IRL Press provides a wealth of detailed technical information on basic and advanced techniques as they are applied to cytokine research.

The general approach adopted throughout this useful volume is to provide an overview of the techniques commonly used in cytokine research without focusing directly on individual cytokines. This serves to broaden the appeal of this book and it provides sufficient information to allow one to develop strategic approaches to the identification and study of existing and new cytokine molecules.

There are, however, one or two criticisms to be made. Firstly, the book would benefit from an opening chapter providing an overview of cytokines and the roles (often very complex) they play in cell growth, differentiation, and cell-cell communication. The individual chapters would also benefit from more attention being given to the principles involved in the various techniques described. It is generally assumed that the reader has a good working knowledge of the very many (137) and very diverse methods given, including their limitations and potential pitfalls.

This would serve to enhance the value of the book to newcomers to cytokine research. Having said that, the individual chapters are generally well written in a clear, concise and detailed manner.

Chapters 1–4 focus on various genetic approaches to the identification, cloning and study of cytokine gene expression. The information is presented in a logical fashion which can be applied to the study of almost any growth factor with little modification. This sets the tone for much of the rest of the book. The core of the book, most of chapters 5 through to 19, consider the effects of cytokines on their various target cells. Amongst the topics covered are signal transduction, receptor-binding studies, cytokine-induced proteins, chemotaxis, cytotoxic and proliferative effects induced by cytokines. There are also very useful chapters on the responses of T- and B-cells to cytokines. The book ends with two chapters devoted to quantitative bioassay and immunoassay systems for a number of specific cytokines. The contents are supplemented with some useful appendices on sources of materials, historical names of cytokines, human cytokine receptors, and some diseases where cytokines are known to be involved.

Overall, this is a very useful volume and it should prove to be an extremely useful practical guide to all those working or contemplating work in cytokine research.

Richard O'Kennedy and Kenneth Carroll
DNA–protein interactions are fundamental to the existence of life forms, providing the key to the genetic plan as well as mechanisms for its maintenance and evolution. The study of these interactions is therefore fundamental to our understanding of growth...  


4. Hockensmith, J. W., Kubasek, W. L., Vorachek, W. R., and von Hippel, P. H. (1993) Laser cross-linking of proteins to nucleic acids. The GLP Principles cover all aspects of a laboratory’s daily activity, such as the layout of testing and storage areas to prevent contamination, cleaning and calibration of equipment, handling of test animals, and recording and archiving of test results. The GLP Principles thereby help ensure that studies submitted to regulatory authorities, to notify or register chemicals, are of sufficient quality and rigour and are verifiable. English Also available in: French. More On.  

This document facilitates the proper application and interpretation of the GLP Principles for the organisation and management of in vitro studies, and provides guidance for the appropriate application of the GLP Principles to in vitro studies. Click to download PDF - 82.30KB. PDF. This is an abbreviated copy of our Laboratory Guide for the Biolab web site. The complete document with pricing is available for doctors and practitioners on request. Our web site remains the primary source of information on Biolab tests.  

The laboratory is staffed by a highly qualified & experienced team, led by Laboratory Director Mark Adams MSc MACB, and is equipped to carry out a wide range of tests to assess the nutritional status of patients. Tests include assessment of vitamin, mineral, essential fatty acid and amino acid status, and a wide range of other functional metabolic tests. Many of our tests require expensive high-tech instrumentation and these tests are not routinely available at other pathology laboratories. Who can refer patients for tests?