Book reviews

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Report of the UKEMS Sub-Committee on Guidelines for Mutagenicity Testing

The UK Environmental Mutagen Society (UKEMS) under the chairmanship of Brian Dean formed a Sub-Committee to define and describe procedures for mutagenicity testing required in the process of chemical registration. The main objective was to identify the factors in each assay that were regarded as critical for the acquisition of scientifically valid data. This included for each test system a definition of minimal criteria, criteria for positive results, criteria and extent of testing to identify a material as non-mutagenic, specification of modifications to the standard test procedures, and proposals for regular updating of the test systems and protocols.

In the first volume six assay systems are described and discussed: bacterial mutation assays, in vitro chromosome aberration assays, gene mutation assays in mammalian cells, recessive lethal mutations in Drosophila, in vivo cytogenetic assays, and dominant lethal mutation assays. The last chapter outlines the framework of supplementary testing procedures. It gives guidance for supplementary tests to be chosen on the basis of results obtained in the initial battery of tests, or on the basis of eventual use and distribution of the tested material. The questions of test validation and indication of carcinogenic potential by mutagenicity tests are briefly discussed at the end of the last chapter of part I.

The second volume deals with six additional test systems: assay for DNA repair in bacteria, genotoxicity studies using yeast cultures, unscheduled DNA synthesis, sister chromatid exchange in cultured cells, in vitro cell transformation assays, and mammalian germ cell cyto genetics. Three further chapters are dedicated to specific applications of microbial tests, namely to detect mutagens in food, urine, faeces, and body fluids as well as to detect nitration products.

For each test system the principles and the genetic basis of the procedure are explained, followed by a practical description of the test material and protocol, not so much as a ‘cook-book’ type recipe but by stressing critical factors, pitfalls, and possibilities for modifications. Data presentation and interpretations are suggested. Finally, the relevance of the data in terms of mutagenic potential is discussed. The consistent and logical structure of the individual chapters, as well as the concise presentation of the genetical background for each assay, are a special merit of the book. It will be beneficial to the reader that the relevant literature publications are appended to each chapter so that further entry into the particular field is facilitated. The book is only sparsely supplied with illustrations: however, the few given, for example, types of aberrations, are clear and informative.

The UKEMS guidelines for mutagenicity testing are addressed to both experimenters (especially newcomers to the field) and to members of governmental bodies involved in legislation and decisions related to the registration of chemicals. The readership should not be restricted to the UK since the facts and criteria outlined in the two volumes are of a general nature and will give valuable assistance to everybody concerned with mutagenicity testing regardless of national requirements for chemical registration.

Ilse-Dore Adler


The editors have continued where they left off in 1980 with their initial volume 'Monoclonal Antibodies—Hybridomas: A New Dimension in Biological Analysis'. In providing a book in the same trend which, on the one hand exemplifies the applications of monoclonal antibodies and yet on the other provides sound technical advice on the actual methodology involved, they have maintained the appeal of their original volume. A significant number of manuals are now available on the technical aspects of monoclonal antibody production. Similarly a vast number of publications have accrued on the use of these reagents and it is now virtually impossible to keep abreast of the field. It is ideal to have access to a text like the present book by Kennett and his colleagues, which provides information not only on the finished monoclonal products but also on the detailed laboratory efforts.
of groups with considerable expertise in the field, in working with and trying to perfect the production, characterisation, and application of these reagents. I find the book full of useful information and to the further credit of the editors they not only maintain their ability to highlight the important areas of growth in the field, but also seem able to maintain a uniformity of style which, while providing the maximum of information, does so in a way which makes the text exciting and very readable. If the references seem out of date, this in no way detracts from the book since as a 'state of the art' text it does not need the 'hot off the press' label, but can rather be viewed as a solid, reliable treatise which is the 'gold standard' of its kind. I find nothing to criticise in it. This is an excellent book from which anyone vaguely interested in the field would gain immeasurably, and which anyone working in the field will find indispensable. I recommend it without reservation.

ALAN M McGregor

The Laboratory Diagnosis of Selected Inborn Errors of Metabolism

This book contains a description of twelve inborn errors of metabolism. Contrary to what the title suggests, all aspects of the diseases including clinical features, biochemistry, pathophysiology, incidence, inheritance, and treatment, as well as laboratory diagnosis, are dealt with in some detail. Each section concludes with a typical case history. The text is readable, well presented, and adequately illustrated, but the standard of the information it contains is somewhat variable. There are a number of inaccurate and misleading statements and the current state of knowledge on a subject is not always to be found. This is almost inevitable when a single author attempts to write on diseases selected from such diverse fields.

There are some unusual features about the book's contents and their arrangement. It is rather surprising that some areas of the subject, like glycogen storage diseases and the organic acidurias, are not represented. On the other hand, it is difficult to justify the inclusion of neonatal hypothyroidism, as only a very small proportion of infants with this condition have an inborn error of metabolism. The contents are divided into two parts. The first of these describes those diseases for which screening tests are available, while the second part contains those for which screening is not routinely performed. The unsatisfactory nature of this classifica-

tion is evident from the closing sentence on homocystinuria, which is in the former part of the book. It concludes that routine screening for this disease is not feasible. Conversely, screening for cystic fibrosis, glucose-6-phosphate dehydrogenase deficiency, or congenital adrenal hyperplasia is practised in many places, but they are all included in the latter part.

The various anomalies that are mentioned in the preceding paragraphs are probably a symptom of what seems to be a fundamental defect in the book, that the author appears not to have defined its objectives and purposes. It was left to the foreword writer to suggest a possible use by health scientists and physicians. However, such a restricted view of the subject is unsuitable for those who might be seriously involved with the diagnosis and management of patients with inborn errors of metabolism. It could provide a useful introduction for those taking the first parts of various medical and scientific postgraduate qualifications requiring a knowledge of inborn errors of metabolism, but even these readers would need to be aware of the narrow coverage by this text. It is an expensive book considering its limited use.

J B Holton

Immunogenetics. Its Application to Clinical Medicine

This book represents the proceedings of an international conference held in Kyoto, Japan in August 1983 on the implications for clinical medicine of recent advances in immunogenetics.

Inevitably the relationship between immunogenetics and disease has been explored most widely in animal models and this is reflected in the book by articles on murine models of systemic lupus erythematosus, myasthenia gravis, autoimmune thyroiditis, and allergic encephalitis. Nevertheless, headway is being made with human diseases as exemplified by HLA associations with immune response genes to streptococcal and cedar pollen antigens (Sasazuki et al), with leprosy, and with the response to endorphin treatment in schizophrenia (van Rood et al).

In all there are 27 chapters divided into four sections: I. Immune response genes and disease. II. Cell interactions and activation in the human immune response. III. Genetic restrictions in the network and circuits. IV. Molecular genetics and biochemistry of immunologically important molecules.