
Book review

Kilbey, B.J.; Legator, M.; Nichols, W.; Ramel, C. (eds.): Handbook of Mutagenicity Test Procedures. Amsterdam: Elsevier 1984. xvi + 859 pp., several figs. and tabs. Hard bound Dfl. 390,-.

The second edition of this handbook reflects the rapid development of environmental mutation research as compared to 1977 when the first edition appeared. Again basic test procedures are presented in detail but additional methods have been included. These are bacterial repair tests, fluctuation tests, 6-thioguanine resistance in human blood lymphocytes, the mammalian spot test, somatic mutations in *Drosophila*, tests for aneuploidy in fungi, and host-mediated assay and sperm abnormality tests in mice. Other new chapters deal with the metabolic activation of promutagens and one chapter is dedicated to the control of mycoplasmal infections in cell cultures. Thus, the second edition compiles 39 chapters, all written by well-known experts in their field. The majority of presentations were published previously in the first edition but are updated, improved and partly given by other authors.

All articles have been written according to a common arrangement, i.e., scientific basis, present status of the procedure, experimental design including details concerning strains, media, controls, sample size, statistics, biochemical and genetic tests needed to confirm identity of strains and experimental conditions as well as sensitivity and specificity of the test and some guidelines for interpretation of results. Most chapters include a large amount of data obtained with reference mutagens which are very useful to the readers for comparing their own results and improving experimental conditions.

A few brief comments should be made. The illustration of the disk diffusion assay in bacterial repair tests (Fig. 1.1) is a very discouraging one; why not use a soft agar method which will yield clear growth inhibition zones? The chapter on *Saccharomyces cerevisiae* could be improved if the genetic

constitution of the tester strains would be illustrated. If such procedures as "induced reversion using human adenovirus", "root tips of *Vicia faba*" and "meiotic aneuploidy in *Sordaria*", which are of minor relevance for mutagenicity testing, were included, why not a chapter on new approaches in point mutation detection in mammals or testing of complex environmental mixtures? The sperm morphology test is an attractive system to everybody who begins research *in vivo*. Although fairly well characterized as far as its relevance to mammalian mutagens is concerned, the overestimation of its specificity for carcinogens (100%) as an advantage in carcinogenicity screening is misleading. Not only the bias due to selected chemicals tested, but also a missing connection between both endpoints speaks against its use in such screening batteries.

Nevertheless, the handbook is a highly actual presentation of newly developed and established systems used to day in genetic toxicology testing. Although much information can also be found in other papers, the summarizing arrangement in this book makes it easier to adapt a method and to develop the procedure into a working test system. The quality of the presentations guarantees not only the function of a cookbook but also allows an overview on the scientific fundamentals and thus provides the basis for the decision which test is appropriate and useful in a given situation. These properties qualify the book as a key reference for basic research and applied testing. The reviewer is missing a few chapters dealing with the arrangement of single procedures into a battery protocol, with some general considerations on mutagenicity testing in pre-clinical toxicology and with international and national legislative aspects which would provide a more comprehensive picture of this field. This is only a personal view and does not depreciate the high standard offered by the authors and the publisher.

R. Braun, Gatersleben