
Book reviews

Omenn, G.S.; Gelboin, H.V. (eds.): Genetic Variability in Responses to Chemical Exposure. Banbury Report 16. Cold Spring Harbor: Cold Spring Harbor Laboratory 1984. 400 pp., several illus. indexes. Hard bound \$ 66.00.

These conference proceedings should be a valuable reference for those working in pharmacogenetics and ecogenetics. In a series of six topics with over 30 speakers, the conference covered the genetic variability of responses to chemical exposure, methods of dealing with variability in risk assessment, and mechanisms to explain it.

Discussion of these topics takes on meaning to a wider audience when viewed in light of recent environmental laws, such as the Clean Air Act and the Occupational Safety and Health Act which require that individuals who are highly susceptible to the particular agent being regulated, be protected. Genetic differences in the metabolism of chemicals and genetic differences in tissue responses to chemicals are important sources of individual variation previously given little consideration. This variation can frequently be useful in providing clues to the specific mechanism of toxicity of a given chemical.

A major portion of the conference was devoted to studies on cytochromes P-450 and their metabolically-linked enzymes which are recognized as a major enzyme interface between xenobiotics, such as drugs and carcinogens, and the individual organism. Other topics covered in depth include drug and carcinogen metabolism, polymorphisms of metabolizing enzyme systems, oncogene activation and gene markers, immunological and molecular genetic approaches and studies on population correlations. An overall index of key words makes looking up details of a particular topic extremely easy.

Recommendation: This authoritative, highly technical volume is recommended for those working in the pharmacogenetics and ecogenetics areas. The technical papers presented and discussion of theoretical explanations of mechanisms make this a valuable reference for those working in this area.

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Setlow, J.K.; Hollaender, A. (eds.): Genetic Engineering. Principles and Methods. New York, London: Plenum Press 1980. 289 pp., 34 figs., 20 tabs. Hard bound \$ 32.50.

This second volume of the series Genetic Engineering, Principles and Methods, features recent work by internationally known scientists – work that has been carried out since the publication of volume one in the series in 1979. The series deals with the new technology which may revolutionize the study of biology and may even eventually have the impact that went with the development of microelectronics and silicon chips. Both volumes published so far offer new techniques and information resulting from the newly-acquired ability to make particular kinds of precise cuts in DNA molecules.

The use of recombinant DNA methodology in approaches to crop improvement is illustrated in this second volume by the problems of protein quality in maize, while another chapter deals with the cloning of repeated sequence DNA from cereal plants in an attempt to gain more information on the structure and evolution of plant genomes. Further chapters follow on the production of monoclonal antibodies, assessment of messenger RNA concentration by DNA probes, DNA cloning with single and double stranded phage-vectors and DNA cloning in mammalian cells with SV40 vectors. Bacterial plasmid cloning vehicles are discussed at length, including chapters on molecular cloning in *Bacillus subtilis* using the plasmids of *Staphylococcus aureus*, and a very extensive chapter written to provide a concise explanation of the simple ways in which lambda phage can and is being used to clone DNA, and to provide an up-to-date catalogue of lambda vectors now available, together with restriction maps of all the published vectors.

There is a wealth of information to be gained from this book, with enormous benefit to researchers in the fields of biochemistry, genetics and molecular biology.

J. F. Jackson, Glen Osmond