

BOOK REVIEW

Stable Isotopes - Applications in Pharmacology, Toxicology and Clinical Research, T.A. Baillie (Ed).

London: The Macmillan Press Ltd., 1978, Pp 314, £15.00

This volume is the Proceedings of an International Symposium on Stable Isotopes that was held at the Royal Postgraduate Medical School, London in January 1977 and which was sponsored by the British Pharmacological Society. The organisers are to be congratulated on bringing together so many eminent international authorities.

The first section of the book comprises three papers on the scope of application of stable isotopes and the analytical techniques available. This is followed by eleven contributions on applications in pharmacology and toxicology in section 2 and the use of stable isotopes in a variety of aspects of clinical research is discussed in the thirteen papers of the final section.

The increasing interest in the use of the stable isotopes of hydrogen, carbon, nitrogen and oxygen in recent years has derived from rapid developments in instrumentation, especially gc-ms, and the greater availability of the isotopes in a wide variety of labelled compounds. The relative merits of the use of stable isotopes and radiotracers in human metabolic studies are critically discussed. The former are of particular importance in clinical studies with children and women of child-bearing age. In the measurement of drug or metabolite concentrations in plasma and in the measurement of drug kinetics where circulating levels are low and the total body pool is large, the use of stable isotopes offers unique opportunities in pharmacology.

The more extensively discussed applications include stable isotope labelled internal standards for the quantitative analysis of drugs and their metabolites by gc-ms and the use of stable isotopes as metabolic tracers. Simultaneous administration of labelled and unlabelled forms of a drug has important practical applications in bioavailability studies and the advantages have been demonstrated. Several authors discuss and appraise the use of $^{13}\text{C}_2$ breath tests for diagnostic purposes, while stable isotope labelling in metabolic studies in man is illustrated by a number of different examples. The use of deuterium substitution to improve the therapeutic index of an antibacterial agent offers interesting possibilities for future drug design.

Many source books on the applications of stable isotopes are not widely available. This is a well produced volume with a set of pertinent reference to each chapter. To all concerned with pharmacology, toxicology and clinical research, it will stimulate interest and bring an increased awareness of the undoubted potential of stable isotopes in the biomedical sciences. Although it is inevitable that a work of this type cannot be comprehensive, nevertheless, to those already active in the field, it will be an important guide to the current state of the art.

I M Lockhart

The British Oxygen Co. Ltd.