

## BOOK REVIEW

### SYNTHESIS AND APPLICATIONS OF ISOTOPICALLY LABELED COMPOUNDS 1985

Proceedings of the Second International Symposium,  
Kansas City, Missouri, USA 3-6 September 1985

Edited by R R Muccino

Published by Elsevier Scientific Publishers, Amsterdam, 1986, 558 pages

Price: US \$129.75/Dfl.350.00

ISBN 0.444.42612.4

This excellently produced text contains a wealth of information presented at the second international symposium on the synthesis and applications of isotopically labelled compounds. A review of the history of carbon-14 synthetic studies at the University of California, Berkeley in the 1940's given by Professor Melvin Calvin at the Banquet, provides a fitting introduction to this text. He describes especially the path of carbon in photosynthesis which set the foundation for the usefulness of radiotracer techniques in life sciences research. There follows six plenary lectures covering wide ranging topics: isotope applications in China; uses of  $^{15}\text{N}$  in agriculture; chemistry of positron emitters; catalysis of hydrogen isotope exchange; hybridization histochemistry in locating gene expression and the analytical control of  $^{99\text{m}}\text{Tc}$ -diphosphonate complexes in nuclear medicine. Topics covered in the 101 papers presented are grouped under the following headings:

- Mechanistic studies using isotopes in drug metabolism (5 papers)
- Isotopes in organic and bioorganic reaction mechanisms (7 papers)
- Clinical applications of NMR imaging (3 papers)
- Synthesis and use of radioligands in binding studies (5 papers)
- Synthesis and applications of organic compounds labelled with isotopic hydrogen (9 papers)
- Isotopically labelled compounds in recombinant DNA research (4 papers)
- Contemporary approaches to the synthesis of isotopically labelled compounds (5 papers)
- Applications of  $^2\text{H}$  and  $^{15}\text{N}$  NMR spectroscopy (5 papers)
- Isotopes in clinical pharmacology: use of deuterated analogs of drugs as medicinal agents (4 papers)
- Synthesis and applications of labelled peptides (4 papers)

- Synthesis and applications of organic compounds labelled with isotopes other than hydrogen I (8 papers)
- Applications of isotopes in clinical research (5 papers)
- Applications of  $^3\text{H}$  NMR spectroscopy (8 papers)
- Isotopically labelled compounds in medical chemical defense and related research (5 papers)
- State-of-the-art in the instrumentation for analysis of isotopically labelled compounds (7 papers)
- Trends in the synthesis and applications of isotopically labelled compounds (6 papers)
- Compounds labelled with isotopes other than those of hydrogen II (11 papers)

In addition the text lists the authors and titles of 70 posters presented at the symposium and complete indexes of authors and subjects. A listing of attendees at the conference and their address is included also in the text.

This collection of papers provides the reader with a broad base state-of-the-art from around the world with 19 countries represented at the symposium, and although there is a strong focus on synthetic methods there is also wide ranging information on especially the newer applications of isotopically labelled compounds, for example in the uses of labelled peptides for (receptor) binding studies, labelled monoclonal antibodies, labelled compounds in recombinant DNA research, hybridization histochemistry and use of deuterated drugs as medicinal agents.

The text is thoroughly recommended, every science library should have a copy for reference and many scientists, especially those involved in syntheses with isotopes or in teaching, will undoubtedly require a personal copy.

The text is available in the USA/Canada from Elsevier Science Pub.Co.Inc., P O Box 1663 Grand Central Station, New York, NY 10163.

E Anthony Evans Ph.D  
Amersham International plc  
Little Chalfont  
Buckinghamshire  
England

May 1986