

including reagent preparation, tissue extraction, and the problems associated with measurements in extracts and plasma. The authors present good, step-by-step methods for antibody production and peptide iodination. The least helpful chapter is the one on quality control and assay mathematics. While it points out the need for good assay control, it also emphasizes how the author's practice of adding more label to the assay as specific activity lessens with time is at odds with the goal of attaining maximum assay sensitivity. The section on data processing is very superficial and contains no discussion of the advantages and disadvantages of various data reduction methods.

Chapters 8 to 20 each give the general chemistry, localization, physiology, pharmacology, biological concentration, and pathological considerations for each of the most commonly recognized gut regulatory peptides, such as gastrin, cholecystokinin, secretin, vasoactive intestinal polypeptide, gastric inhibitory polypeptide, glucagon, and others, and the neuropeptides such as bombesin and substance P. The enkephalins, PHI, and PYY are not discussed. The chapters also include reagent preparation and assay parameters, which are helpful if one has access to the antibodies (or those with similar characteristics) used by the authors. Each chapter is written by authors who are actively involved in the radioimmunoassay of a particular peptide. There is a helpful chapter containing a good checklist for assay trouble shooting followed by a chapter that gives clinical considerations of several of the peptides, including the author's method of gut hormone screening. The book closes with an appendix containing the more prominent suppliers of peptides and a useful glossary of terms.

Overall, this book is recommended as a good reference and review source although it has more appeal to the laboratory-oriented investigator with at least some background in RIA techniques.

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RADIONUCLIDE IMAGING IN DRUG RESEARCH. C. G. Wilson, J. G. Hardy, M. Frier, & S. S. Davis, Eds. London, Croom Helm, 1982, 330 pp, £ 19.95

This book is based on the proceedings of a symposium "Applications of Radionuclides in Drug Formulation Studies" held at the University of Nottingham in April, 1981. Other than one from France and two from the U.S.A., the contributing groups are English. Four general divisions of the book are discernible. The first part deals with basic aspects of radiopharmaceuticals and diagnostic imaging and is followed by chapters on the applications of external scintigraphy in studies of drug behavior in animal models and in man. Section Three consists of topics concerned with the formulation and targeting of labeled materials, and the final portion is made up of abstracts from the symposium's poster sessions, which covered a variety of topics.

This book relates in its initial chapters some basic information concerning the needs, problems, and potential of a nuclear medicine/pharmaceutical science marriage. Treatment of such topics as choice of radionuclides for scintigraphy and quality controls for radiopharmaceuticals is elementary for nuclear medicine scientists; however, other subjects, e.g., dosage design and formulation, provide interesting information for those with less background in radiopharmaceutical development. The chapter on radiopharmaceutical targeting specifically and numerous examples in other chapters demonstrate the need for and indicate the mutual benefit that can be derived from an association of this kind.

Considerable emphasis is placed on use of imaging procedures to study biological "processing" of various formulations administered by different routes. For example, tablet disintegration,

aerosol deposition, liposome distribution, emulsion formulations, gastrointestinal transit preparations, and rectal modalities are all considered.

A primary deficiency of a book with this title is its lack of an example of an in-depth treatment of pharmacokinetics and modeling. As enumerated in Chapter 3 on data handling and computation, inherent limitations are associated with imaging data acquisition and computer processing; nonetheless, the correlation of theoretical time-activity curves based on physiological parameters with curves obtained from imaging and tissue assay data can demonstrate the usefulness of the combined techniques. Perhaps the editors should have retained the symposium title for the book.

The figures and pictures are well reproduced, but word processor reproduction of the text is a reminder of the origin of the material.

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SELF-ASSESSMENT OF CURRENT KNOWLEDGE IN NUCLEAR MEDICINE (SECOND EDITION). J. B. Selby, G. D. Frey, J. F. Cooper, C. J. Klobukoski. Garden City, N.Y. Medical Examination Publishing Co. Inc., 1981, 250 pp. \$18.00

In this updated second edition, the order of contents of the textbook has been reorganized. It has been divided into two main parts: Basic Science and Clinical Nuclear Medicine. Basic Science, Part I, encompasses basic physics, radiation protection, interaction of radiation with matter and radiation detection, imaging, nuclear pharmacy, and radiation biology. Part II, Clinical Nuclear Medicine, covers the central nervous system, bone, gastroenterology (liver/spleen), cardiovascular system, pulmonary system, genitourinary system, thyroid and endocrine systems, gallium studies, radioassay, hematology, and therapy. The total number of pages of the current edition is increased to 250 from the 213 of the first edition but there are fewer questions because those in the basic science area have been carefully selected to 60 of the original 98 questions.

Compared with the previous edition, there are two advantages in the current one: (1) the addition of explanatory answers; and (2) the inclusion of up-to-date scintiphotos replacing rectilinear scan illustrations. The "answers and comments" portion of explanatory answers comprise 48 pages. The explanation of each question is brief and clearly hits the key points of the question and its related area. These answers are supported by current bibliographies, a major improvement from the previous edition. There are only two figures in the section of basic science. The 44 figures in Part II have been distributed as following: three in central nervous system, 15 in bone, 13 in liver/spleen, two in cardiovascular system, three in pulmonary system, two in genitourinary system, three in thyroid and endocrine, one each in gallium studies, radioassay, hematology, and therapy. The most valuable figures, such as Figure 9-1, the usual liver imaging pattern in various types of diaphragmatic hernia, remain in this edition. In the chapter of cardiovascular system, most of the material is new and covers questions regarding thallium myocardial perfusion scanning, gated-blood pool imaging, and pyrophosphate myocardial scanning. In the section on the genitourinary system questions relating to scrotal imaging are included. Studies of the choice of Tc-99m labeled IDA as hepatobiliary agents are added in the chapter of liver/spleen. Questions involving selection of computerized tomography (CT), ultrasound (US), and nuclear medicine as diagnostic strategies also are covered, since it is important to understand the strengths and limitations of the applications of nuclear

medicine. Nuclear medicine procedures are frequently complementary to but at times competitive with CT, and/or US and other diagnostic modalities. With regard to this, questions involving the use of diagnostic modalities often appear in appropriate chapters; e.g., questions on the selection of CT, US and NM as diagnostic strategies appear in the chapters on the genitourinary, liver/spleen, and thyroid systems.

The content in Chapter 8 on bone has been drastically changed. Questions on hip prostheses, Paget's disease, pulmonary hypertrophic osteoarthropathy and artifacts on bone scans are presented in the current edition, and there has been deletion from the original of some material on the skeletal system. This material is important, however, and still worthwhile to review, so space limitations, no doubt, accounted for its deletion.

A few areas have not been included in this book: computer ap-

plications in nuclear medicine, gastric emptying and gastroesophageal reflux studies, the use of radioiodine fibrinogen in occlusive venous disease, and diagnostic decision analysis. The authors might keep these points in mind for a future edition.

The presentation of the total 674 questions are of two types: general multiple choice, with a few true/false multiple choices. The latter type appears only in the section of Clinical Nuclear Medicine. This format of self-assessment is a suitable pretest exercise as well as informative text. It is especially valuable as a guide for review for residents preparing for their board examinations in diagnostic radiology or nuclear medicine.

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BOOKS RECEIVED

Reevaluations of Dosimetric Factors: Hiroshima and Nagasaki. V.P. Bond, J.W. Thiessen, Eds. Oak Ridge, TN, Technical Information Center U.S. Department of Energy, 1982, 306 pp, \$15.75

Nuclear Medicine Science Syllabus, Second Edition. Anthony R. Benedetto, Ed. New York, NY, The Society of Nuclear Medicine, 1983, 280 pp, \$30.50

Radioimmunoassay and Related Procedures in Medicine 1982. International Atomic Energy Agency. Vienna, Austria, International Atomic Energy Agency, 1982, 825 pp, Austrian Schillings 1350,-

Chemistry for Nuclear Medicine. Mervyn W. Billingham, Alan R. Fritzberg. Chicago, IL, Year Book Medical Publishers, Inc., 1981, 328 pp, \$24.95

Applications of Nuclear & Radiochemistry. Richard M. Lambrecht, Nabil Morcos, Eds. Elmsford, NY Pergamon Press, 1982, 582 pp, \$85.00

Biomedical Thermology (Series-Progress in Clinical and Biological Research Volume 107). Michel Gautherie, Ernest Albert, Eds. New York, NY, Alan R. Liss, Inc., 1982, 942 pp, \$176.00

Low-Level Radiation Effects: A Fact Book. Subcommittee on Risks of Low-Level Ionizing Radiation: A. Bertrand Brill, S. James Adelstein, Eugene L. Saenger, Edward W. Webster. New York, NY, The Society of Nuclear Medicine, 1982, 136 pp, \$25.00, plus \$2.50 postage and handling

Progress in Radiopharmacology 3 (Series-Developments in Nuclear Medicine 2). P.H. Cos, Ed. The Hague, The Netherlands, Martinus Nijhoff Publishers, 1982, 285 pp, \$44.00

Digital Imaging: Clinical Advances in Nuclear Medicine. Peter D. Esser, Ed. New York, NY, The Society of Nuclear Medicine, 1983, 304 pp, \$25.00 members, \$35.00 nonmembers

The Physics of Radiology (Fourth Edition). Harold Elford Johns, John Robert Cunningham. Springfield, IL, Charles C. Thomas, 1983, 796 pp, \$49.50