68ga Dotatoc Dotanoc Synthesis And Dosimetry Preparation Of 68ga Dota Toc Noc From 68ge 68ga Generator And

PET/CT in Neuroendocrine TumorsGood Practice for Introducing Radiopharmaceuticals for Clinical UsePET/CT in Neuroendocrine TumorsClinical Applications of Nuclear Medicine Targeted TherapyNeuroendocrine Tumors: A Multidisciplinary ApproachRadiopharmaceuticalsPET-Based Interventions, An Issue of PET Clinics, E-BookWHO Classification of Tumours of the Digestive SystemWHO Classification of Tumours of Endocrine OrgansAbdominal Neuroendocrine TumorsPositron Emission TomographyGallium-68 Cyclotron ProductionDiagnostic and Therapeutic Nuclear Medicine for Neuroendocrine TumorsPositron Emission TomographyPET/CT in Gynecological CancersRadioguided SurgeryRadiopharmaceuticals for Positron Emission TomographyNuclear OncologyPheochromocytoma (PHEO) and Paraganglioma (PGL)Perspectives on Nuclear Medicine for Molecular Diagnosis and Integrated TherapyPET-CT Beyond FDGBasic Science of PET ImagingImaging in Endocrine DisordersPET Imaging in the Management of Neuroendocrine Tumors, An Issue of PET Clinics,PET ChemistryIntroduction to Diagnostic RadiologyPET/CT in Prostate CancerPET/CT Imaging in Tracers Beyond FDG, An Issue of PET Clinics,Handbook of RadiopharmaceuticalsNuclear Medicine CompanionNuclear OncologyRadiopharmaceutical ChemistryTherapeutic Nuclear MedicineMolecular ImagingClinical Nuclear MedicineNeuroendocrine Tumors in Real LifeThe Journal of Nuclear MedicineTheranostics, Gallium-68, and Other RadionuclidesHandbook of Nuclear ChemistryCardiac Positron Emission Tomography

PET/CT in Neuroendocrine Tumors

This book offers a wide-ranging and up-to-date overview of the basic science underlying PET and its preclinical and clinical applications in modern medicine. In addition, it provides the reader with a sound understanding of the scientific principles and use of PET in routine practice and biomedical imaging research. The opening sections address the fundamental physics, radiation safety, CT scanning dosimetry, and dosimetry of PET radiotracers, chemistry and regulation of PET radiopharmaceuticals, with information on labeling strategies, tracer quality control, and regulation of radiopharmaceutical production in Europe and the United States. PET physics and instrumentation are then discussed, covering the basic principles of PET and PET scanning systems, hybrid PET/CT and PET/MR imaging, system calibration, acceptance testing, and quality control. Subsequent sections focus on image reconstruction, processing, and quantitation in PET and hybrid PET and on imaging artifacts and correction techniques, with particular attention to partial volume correction and motion artifacts. The book closes by examining clinical applications of PET and hybrid PET and their physiological and/or molecular basis in conjunction with technical foundations in the disciplines of oncology, cardiology and neurology, PET in pediatric malignancy and its role in radiotherapy treatment planning. Basic Science of PET Imaging will meet the needs of nuclear medicine practitioners, other radiology specialists, and trainees in these fields.

Good Practice for Introducing Radiopharmaceuticals for Clinical Use

Revolutionary changes in medical imaging have enormously improved the ability to detect structural and functional organ alterations early. Imaging is becoming an essential tool - in association with hormonal assays - for the diagnosis and management of endocrine disorders. New contrast media and their application to ultrasounds, as well as the opportunity to merge images acquired by functional/metabolic and traditional techniques, allow characterization of key features of identified lesions. Some radiological techniques such as ultrasonography, CT, and MRI are now available in operating rooms, thus supporting a diagnostic and therapeutic approach to endocrine diseases. In this new book, distinguished experts have contributed concise and well-illustrated chapters to describe pathognomonic features of several benign and malignant diseases affecting endocrine glands. They review the main advantages and disadvantages of each diagnostic technique along with indications for selecting a method. As a special feature, online videos of dynamic diagnostic and therapeutic procedures are available. Imaging in Endocrine Disorders is a must read and valuable reference for all professionals dealing with endocrine disorders, including internists and general practitioners who must manage the essential diagnostic workup.

PET/CT in Neuroendocrine Tumors

It is the mark of an instructed mind to rest satisfied with the degree of precision which the nature of the subject admits, and not to seek exactness where only an approximation of the truth is possible. Aristotle With the development of imaging techniques, the in vivo study of human anatomy and physiology has become possible with increasing "approximation of the truth. " Advances have been made not only in data acquisition, but also in processing as well as visualization of functional and morphological data. Following the successful application of planar two-dimensional imaging approaches, more recently three-dimensional data acquisition and correspond ing tomographic image reconstruction has become possible. With the rapid growth of computer support, advanced processing allows for user-friendly interaction with complex data sets. Classical x-ray imaging techniques have matured to excellent spatial resolution and contrast, which provide specific delineation of anatomical changes occurring in cardiovascular disease. In parallel, the use of tracer principles supported the successful introduction of nuclear medicine procedures for the functional characterization of physiology and pathophysiology. The application of such techniques were initially limited by relatively poor spatial resolution, but excelled in high sensitivity 30 years, scintigraphic imaging emerged from and specificity. In the last rectilinear scanning to planar gamma camera imaging and single-photon xvi Preface emISSIOn tomography (SPECT). Based on these advances and the experi mental success of autoradiography, the potential of scintigraphy as a clinical and research tool has been well appreciated.

Clinical Applications of Nuclear Medicine Targeted Therapy

A comprehensive, authoritative and up-to-date reference for the newcomer to radiopharmaceuticals and those already in the field. Radiopharmaceuticals are used to detect and characterise disease processes, or normal biological function, in living cells, animals or humans. Used as tracer molecules, they map the distribution, uptake and metabolism of the molecule in clinical studies, basic research or applied research. The area of radiopharmaceuticals is expanding rapidly. The number of PET centers in the world is increasing at 20% per year, and many drug companies are utilising PET and other forms of radiopharmaceutical imaging to evaluate products. * Readers will find coverage on a number of important topics such as radionuclide production, PET and drug development, and regulations * Explains how to use radiopharmaceuticals for the diagnosis and therapy of cancer and other diseases * The editors and a majority of the contributors are from the United States

Neuroendocrine Tumors: A Multidisciplinary Approach

This book offers a practical and modern update on radioisotope therapy. Clinically oriented, it provides a thorough guide to patient management, with the latest indications and procedures for the current radioisotopic treatments. It addresses the clinical problems associated with each respective pathology, discussing the management of patients (diagnosis and non-radioisotope therapy), the radiopharmaceuticals available today, and the current radioisotopic procedures. Wherever possible, information on dosimetry is included at the end of each topic, together with a list of and comments on the most recent guidelines with their recommendations for radiometabolic therapy. The book is divided into six main sections: thyroid diseases, hepatic tumors (HCC and hepatic metastases), bone metastases from prostate cancer, lymphomas, and neuroendocrine tumors. The last section is dedicated to new perspectives of radioisotope treatment. Based on contributions from of a multidisciplinary team of specialists: oncologists, surgeons, endocrinologists, hematologists, urologists, radiopharmacists and nuclear medicine physicians, it provides a comprehensive analysis of the position of radioisotope treatments among the various therapeutic options. Readers interested in targeted therapy, radiometabolic therapy, radioimmunotherapy and radiometabolic imaging will find this book both informative and insightful.

Radiopharmaceuticals

The ultimate reference guide to the synthesis of radiopharmaceuticals The Radiochemical Syntheses series provides scientists and professionals with a comprehensive reference to proven synthetic methods for radiochemical reactions, along with step-by-step guidance on how to replicate these syntheses in the laboratory. Volume 1 in the series focuses on the synthesis and purification of radiopharmaceuticals in clinical use today. It brings together in one complete, self-contained volume a collection of monographs containing a wealth of practical information from across the literature, demonstrating in meticulous detail how to prepare radiopharmaceuticals for positron emission tomography (PET) imaging, especially in tumor studies, cardiology, and neuroscience. Readers have key experimental details culled from the literature at their fingertips, greatly simplifying the process of qualifying a site for the clinical production of new radiopharmaceuticals.

PET-Based Interventions, An Issue of PET Clinics, E-Book

This book is a pocket guide to the science and practice of PET/CT imaging of gynecological malignancies. The scientific principles of PET/CT, the radiopharmaceuticals used in the context of gynecological cancers, the role of PET/CT in these patients, the characteristic PET/CT findings, and limitations and pitfalls are all clearly described. In addition, information is provided on clinical presentation, diagnosis, staging, pathology, management, and radiological imaging. The book is published within the Springer series Clinicians' Guides to Hybrid Imaging, which is aimed at referring clinicians, nuclear medicine/radiology physicians, radiographers/technologists, and nurses who routinely work in nuclear medicine and participate in multidisciplinary meetings. Compiled under the auspices of the British Nuclear Medicine Society, the series is the joint work of many colleagues and professionals worldwide who share a common vision and purpose in promoting and supporting nuclear medicine as an important imaging specialty for the diagnosis and management of oncological and non-oncological conditions.

WHO Classification of Tumours of the Digestive System

This book provides the reader with a comprehensive understanding of both the basic principles and the clinical applications of nuclear oncology imaging techniques. The authors have assembled a distinguished group of leaders in the field who provide valuable insight on the subject. The book also includes major chapters on the cancer patient and the pathophysiology of abnormal tissue, the evaluation of co-existing disease, and the diagnosis and therapy of specific tumors using functional imaging studies. Each chapter is heavily illustrated to assist the reader in understanding the clinical role of nuclear oncology in cancer disease therapy and management.

WHO Classification of Tumours of Endocrine Organs

This pocket book provides up-to-date descriptions of the most relevant features of neuroendocrine tumors (NETs) and the imaging modalities currently available to assist specialists (clinicians, pathologists, radiologists, nuclear medicine physicians) in selecting optimal patient management based on interdisciplinary collaboration. As the title indicates, the focus is particularly on PET/CT, with coverage of basic principles, the available radiopharmaceuticals, indications, typical and atypical appearances, normal variants and artifacts, advantages, limitations, and pitfalls. In addition, succinct information is provided on the use of other imaging modalities, including SPECT, CT, and MRI, and on pathology and treatment options. Imaging teaching cases are presented, and key points are highlighted throughout. The book is published as part of a series on hybrid imaging that is specifically aimed at referring clinicians, nuclear medicine/radiology physicians, radiographers/technologists, and nurses who routinely work in nuclear medicine and participate in multidisciplinary meetings.

Abdominal Neuroendocrine Tumors

Nuclear Medicine has greatly contributed to the diagnosis and treament of neuroendocrine neoplasms. This issue of PET Clinics will focus not only on the diagnosis and treatment of neuroendocrine tumors, but also theranostics. Topics include SPECT and other PET tracers, F-DOPA, Ga-DOTA-peptides, Yttrium- and Lutetium-based therapy, and the role of FDG PET. It also covers key information of theranostics.

Positron Emission Tomography

This book's stated purpose is to provide a discussion of the technical basis and clinical applications of positron emission tomography (PET), as well as their recent progress in nuclear medicine. It also summarizes current literature about research and clinical science in PET. The book is divided into two broad sections: basic science and clinical science. The basic science section examines PET imaging processing, kinetic modeling, free software, and radiopharmaceuticals. The clinical science section demonstrates various clinical applications and diagnoses. The text is intended not only for scientists, but also for all clinicians seeking recent information regarding PET.

Gallium-68 Cyclotron Production

This book is based on contributions presented at the 1st World Congress on Gallium-68 and Peptide Receptor Radionuclide Therapy, which examined recent developments in theranostics – the emerging field of molecular targeting of vectors that can be used for both diagnosis and therapy, when modified accordingly. The focus of this book is on the rapidly developing research into and clinical applications of gallium-68 and other generator-produced PET radionuclides in the personalized diagnosis and treatment of neuroendocrine tumors and other diseases. In addition, new PET radiopharmaceuticals are considered, and the latest ideas and concepts, presented. Theranostics embodies both molecular and personalized medicine. It is at the cutting edge of medicine, and the contents of this volume will be of interest to chemists, physicians, and investigators dealing with generators, PET radiochemistry, molecular imaging, and radionuclide therapy.

Diagnostic and Therapeutic Nuclear Medicine for Neuroendocrine Tumors

Based on the most novel approaches and cutting-edge clinical and scientific information regarding radionuclide imaging and therapies for neuroendocrine tumors, this clinical guidebook represents a unique collaborative effort between endocrinologists, nuclear physicians, oncologists, surgeons, physicists, radio-pharmacists and geneticists. It begins with the embryology, classification and molecular genetics of gastroenteropancreatic neuroendocrine tumors and carcinoids, chromaffin cell tumors, and MEN1- and MEN2-related tumors. Following a chapter on radiopharmaceuticals in neuroendocrine imaging, it turns to the physics and technology of current and cutting-edge radiology, including SPECT/CT and PET/CT and PET/MR. Discussing of radionuclide imaging covers the tumors mentioned above, as well as pulmonary and thymic neuroendocrine tumors and medullary thyroid carcinoma. A presentation of radionuclide therapies follows,

including 131I-MIBG therapy, somatostatin receptor-based therapy, and alpha radionuclide therapy, as well as the role of nanoparticles. Comprehensive and up-to-date, Diagnostic and Therapeutic Nuclear Medicine for Neuroendocrine Tumors will assist and guide physicians who encounter patients with these conditions, either from a diagnostic or therapeutic standpoint, and particularly emphasizes the current and emerging medical devices and imaging and therapeutic options.

Positron Emission Tomography

This issue, edited by Dr. Rakesh Kumar, reviews current clinical information in "PET Based Interventions." Articles will include: PET/CT in Radiofrequency Ablation; PET/CT Guided FNAC/Biopsy; PET/CT in Radiotherapy Planning; Dual Time Point Imaging; The Role of PET in Radiation Oncology; PET/CT in Individualization of Treatment (Personalized medicine); Ga68-DOTA-TOC PET/CT in targeted radionuclide therapy (Lu188 therapy for NET); Role of FDG PET/CT in Targeted Radionuclide Therapy of Endocrine Malignancies; Overview of Conventional Imaging Based Intervention in Clinical Practice; Special Techniques in PET/CT in Evaluating Genito-urinary Malignancies; and more!

PET/CT in Gynecological Cancers

The recent revolution in molecular biology offers exciting new opportunities for targeted radionuclide therapy. This up-to-date, comprehensive book, written by world-renowned experts, discusses the basic principles of radionuclide therapy, explores in detail the available treatments, explains the regulatory requirements, and examines likely future developments. The full range of clinical applications is considered, including thyroid cancer, hematological malignancies, brain tumors, liver cancer, bone and joint disease, and neuroendocrine tumors. The combination of theoretical background and practical information will provide the reader with all the knowledge required to administer radionuclide therapy safely and effectively in the individual patient. Careful attention is also paid to the role of the therapeutic nuclear physician in coordinating a diverse multidisciplinary team, which is central to the safe provision of treatment.

Radioguided Surgery

Although [18F]fluorodeoxyglucose (FDG) generally shows an excellent performance as a cancer-imaging agent when using PET-CT, there are some settings in which other radiopharmaceuticals offer advantages. Such non-FDG tracers are now gaining widespread acceptance not only in research but also in clinical practice. This atlas, including about 500 high-quality images, is a user-friendly guide to PET-CT imaging beyond FDG. A wide range of tracers is covered, such as 18F- and 11C-choline, 11C-methionine, 18F-ethyl-L-tyrosine, 68Ga-DOTA-NOC, 11C-acetate, 11C-thymidine, and 18F-DOPA. Throughout, the emphasis is on image interpretation, with guidance on the recognition of normal, benign, and malignant uptake and clear instruction on learning points and pitfalls. This atlas is designed to serve as a reference text for both nuclear physicians and radiologists, and will also be of great benefit to radiographers, technologists, and nuclear medicine and radiology residents.

Radiopharmaceuticals for Positron Emission Tomography

Personalized medicine employing patient-based tailor-made therapeutic drugs is taking over treatment paradigms in a variety of ?elds in oncology and the central nervous system. The success of such therapies is mainly dependent on ef?cacious therapeutic drugs and a selective imaging probe for identi?cation of potential responders as well as therapy monitoring for an early bene?t assessment. Molecular imaging (MI) is based on the selective and speci?c interaction of a molecular probe with a biological target which is visualized through nuclear, magnetic resonance, near infrared or other methods. Therefore it is the method of choice for patient selection and therapy monitoring as well as for speci?c e- point monitoring in modern drug development. PET (positron emitting tomography), a nuclear medical imaging modality, is ideally suited to produce three-dimensional images of various targets or processes. The rapidly increasing demand for highly selective probes for MI strongly pushes the development of new PET tracers and PET chemistry. 'PET chemistry' can be de?ned as the study of positron-emitting compounds regarding their synthesis, structure, composition, reactivity, nuclear properties and processes and their properties in natural and - natural environments. In practice PET chemistry is strongly in?uenced by the unique properties of the radioisotopes used (e. g. , half-life, che- cal reactivity, etc.) and integrates scienti?c aspects of nuclear-, organic-, inorganic- and biochemistry.

Nuclear Oncology

This book on neuroendocrine tumors (NETs) aims to present, in a clear and innovative manner, a broad topic that is still unevenly and in some respects poorly delineated. The novel feature is the nature of the focus on the principles of prognosis, diagnosis, and therapy, which are outlined on the basis of well-defined clinical scenarios described with the aid of high-quality images and illustrations. The salient observations to emerge from the reported clinical cases are clearly summarized, taking into account evidence from the literature and the available guidelines. All of the significant prognostic factors – histopathological, molecular, and imaging – and current diagnostic and therapeutic strategies for the major NETs (stomach, pancreas, ileum, appendix, bronchus) are covered. In addition, in the introductory part of the book the reader will find information on basic aspects including epidemiology, classification, and underlying biological mechanisms. Neuroendocrine Tumors in Real Life will be of interest to all specialists involved in the management of NETs; it will provide the experienced with important updates and equip trainees and students with a firm understanding of key concepts.

Pheochromocytoma (PHEO) and Paraganglioma (PGL)

This book outlines some new advances in genetics, clinical evaluation, localization, therapy (newly including immunotherapy) of pheochromocytoma and paraganglioma including their metastatic counterparts. Well-known and experienced clinicians and scientists contributed to this book to include some novel approaches to these tumors. This book will serve to various health care professionals from different subspecialties, but mainly oncologists, endocrinologists, endocrine surgeons, pediatricians, and radiologists. This book

shows that the field of pheochromocytoma/paraganglioma is evolving and a significant progress has been made in last 5 years requiring that health care professionals and scientists will learns new information and implement it in their clinical practice or scientific work, respectively. This book should not be missed by anybody who is focusing on neuroendocrine tumors, their newest evaluation and treatment.

Perspectives on Nuclear Medicine for Molecular Diagnosis and Integrated Therapy

This book provides all the information required for the optimal use of nuclear medicine techniques, which are undergoing rapid development yet remain underutilized. Each chapter focuses on one particular clinical system or disease area. The first section of each chapter illustrates normal patterns observed on commonly and uncommonly performed scans as a reference and explains when and how the procedures should be performed. The following section illustrates both the imaging patterns of different diseases and the diagnostic role of individual studies. Comparisons with other modalities are provided, and the rationale for and effective utilization of each study are discussed. The volume includes near 250 case reviews. In addition, the normal patterns on relevant morphologic modalities are documented in an appendix. The book is directed at Nuclear Medicine physicians and technologists with different levels of training and expertise and also at radiologists who practice nuclear medicine and radiology residents.

PET-CT Beyond FDG

This pocket book provides up-to-date descriptions of the most relevant features of neuroendocrine tumors (NETs) and the imaging modalities currently available to assist specialists (clinicians, pathologists, radiologists, nuclear medicine physicians) in selecting optimal patient management based on interdisciplinary collaboration. As the title indicates, the focus is particularly on PET/CT, with coverage of basic principles, the available radiopharmaceuticals, indications, typical and atypical appearances, normal variants and artifacts, advantages, limitations, and pitfalls. In addition, succinct information is provided on the use of other imaging modalities, including SPECT, CT, and MRI, and on pathology and treatment options. Imaging teaching cases are presented, and key points are highlighted throughout. The book is published as part of a series on hybrid imaging that is specifically aimed at referring clinicians, nuclear medicine/radiology physicians, radiographers/technologists, and nurses who routinely work in nuclear medicine and participate in multidisciplinary meetings.

Basic Science of PET Imaging

The use of new radiopharmaceuticals can provide extremely valuable information in the evaluation of cancer, as well as heart and brain diseases. Information that often times cannot be obtained by other means. However, there is a perceived need in many Member States for a useful reference to facilitate and expedite the introduction of radiopharmaceuticals already in clinical use in other countries. This publication intends to provide practical support for the introduction of new

radiotracers, including recommendations on the necessary steps needed to facilitate and expedite the introduction of radiopharmaceuticals in clinical use, while ensuring that a safe and high quality product is administered to the patient at all times.

Imaging in Endocrine Disorders

This book is a comprehensive guide to radiopharmaceutical chemistry. The stunning clinical successes of nuclear imaging and targeted radiotherapy have resulted in rapid growth in the field of radiopharmaceutical chemistry, an essential component of nuclear medicine and radiology. However, at this point, interest in the field outpaces the academic and educational infrastructure needed to train radiopharmaceutical chemists. For example, the vast majority of texts that address radiopharmaceutical chemistry do so only peripherally, focusing instead on nuclear chemistry (i.e. nuclear reactions in reactors), heavy element radiochemistry (i.e. the decomposition of radioactive waste), or solely on the clinical applications of radiopharmaceuticals (e.g. the use of PET tracers in oncology). This text fills that gap by focusing on the chemistry of radiopharmaceuticals, with key coverage of how that knowledge translates to the development of diagnostic and therapeutic radiopharmaceuticals for the clinic. The text is divided into three overarching sections: First Principles, Radiochemistry, and Special Topics. The first is a general overview covering fundamental and broad issues like “The Production of Radionuclides” and “Basics of Radiochemistry”. The second section is the main focus of the book. In this section, each chapter’s author will delve much deeper into the subject matter, covering both well established and state-of-the-art techniques in radiopharmaceutical chemistry. This section will be divided according to radionuclide and will include chapters on radiolabeling methods using all of the common nuclides employed in radiopharmaceuticals, including four chapters on the ubiquitously used fluorine-18 and a “Best of the Rest” chapter to cover emerging radionuclides. Finally, the third section of the book is dedicated to special topics with important information for radiochemists, including “Bioconjugation Methods,” “Click Chemistry in Radiochemistry”, and “Radiochemical Instrumentation.” This is an ideal educational guide for nuclear medicine physicians, radiologists, and radiopharmaceutical chemists, as well as residents and trainees in all of these areas.

PET Imaging in the Management of Neuroendocrine Tumors, An Issue of PET Clinics,

Nuclear Oncology describes the use of radionuclides in the diagnosis and management of malignant tumors. Both in vivo and in vitro techniques are included. The book was written by an international panel of authors, most, if not all, of whom are the pioneers of the techniques described. Their chapters reflect the universal views in the field of nuclear medicine and oncology. Clinical aspects and technical details are presented for both standard and new nuclear oncological techniques, including breast scintigraphy, receptor imaging, monoclonal antibodies and positron emission tomography. This information will therefore be helpful to those dealing with the diagnosis and therapy of cancer using radionuclides, including medical oncologists, radiation oncologists, oncologic surgeons, nuclear

medicine physicians and radiologists. Attention is devoted to potential areas of clinical research in nuclear oncology. Therapeutic use of radionuclides is emphasized.

PET Chemistry

Introduction to Diagnostic Radiology

A practical clinically relevant introduction to diagnostic radiology Introduction to Basic Radiology is written to provide non-radiologists with the level of knowledge necessary to order correct radiological examinations, improve image interpretation, and enhance their interpretation of various radiological manifestations. The book focuses on the clinical scenarios most often encountered in daily practice and discusses practical imaging techniques and protocols used to address common problems. Relevant case scenarios are included to demonstrate how to reach a specific diagnosis. Introduction to Basic Radiology is divided into ten chapters. The first two chapters provide basic information on various diagnostic imaging techniques and control agents. Each of the following chapters discuss imaging of specific organ systems and begin with a description of the imaging modality of choice and illustrates the relevant features to help simplify the differential diagnosis. You will also find important chapters on pediatric radiology and women's imaging. Unlike other introductory texts on the subject, this book treats diagnosis from a practical point of view. Rather than discuss various diseases and classify them from the pathologic standpoint, Introduction to Basic Radiology utilizes cases from the emergency room and physician's offices and uses a practical approach to reach a diagnosis. The cases walk you through a radiology expert’s analysis of imaging patterns. These cases are presented progressively, with the expert's thinking process described in detail. The cases highlight clinical presentation, clinical suspicion, modality of choice, radiologic technique, and pertinent imaging features of common disease processes.

PET/CT in Prostate Cancer

Impressive in its overall size and scope, this five-volume reference work provides researchers with the tools to push them into the forefront of the latest research. The Handbook covers all of the chemical aspects of nuclear science starting from the physical basics and including such diverse areas as the chemistry of transactinides and exotic atoms as well as radioactive waste management and radiopharmaceutical chemistry relevant to nuclear medicine. The nuclear methods of the investigation of chemical structure also receive ample space and attention. The international team of authors consists of 77 world-renowned experts - nuclear chemists, radiopharmaceutical chemists and physicists - from Austria, Belgium, Germany, Great Britain, Hungary, Holland, Japan, Russia, Sweden, Switzerland and the United States. The Handbook is an invaluable reference for nuclear scientists, biologists, chemists, physicists, physicians practicing nuclear medicine, graduate students and teachers - virtually all who are involved in the chemical and radiopharmaceutical aspects of nuclear science. The Handbook also provides for further reading through its rich selection of references.

PET/CT Imaging in Tracers Beyond FDG, An Issue of PET Clinics,

This multidisciplinary textbook is designed to be the standard on the subject and is geared for use by physicians who are involved in the care and/or diagnosis of cancer patients. Comprehensive coverage is provided on all aspects of radioguided surgery. Practical information is readily accessible and throughout there is an emphasis on improved decision making. Tables present the indications, performance, and interpretation of procedures at a glance. A wealth of illustrations, including a full-color insert, enhances the application of new concepts.

Handbook of Radiopharmaceuticals

This work is devoted to understanding the recent advances in nuclear medicine and molecular imaging technologies along with their application to integrated medical therapy and future drug development. This anthology is based on the international symposium in 2015 entitled “Perspective on Nuclear Medicine for Molecular Diagnosis and Integrated Therapy. “The symposium provided an opportunity to exchange ideas on how to promote nuclear medicine technology and how to extend the technology to medical therapy and drug development, and was also a good opportunity to discuss the future perspective of nuclear medicine and molecular imaging by worldwide leaders in the field. Molecular imaging technologies have been rapidly developed worldwide in recent years. Among those developments, nuclear medicine has come to play an important role in quantitative analysis of biological process in vivo as well as in wide clinical use. With the current progress of nuclear medicine and molecular imaging, this modality has been applied for treatment monitoring and predicting its outcome with the use of optimal imaging biomarkers and suitable quantitative analysis. Truly, a new era has arrived with clinical use of nuclear medicine and molecular imaging for personalized medicine. This volume will benefit a wide variety of researchers in life science including those working in drug development, molecular imaging, and medical therapy as well as physicians who utilize diagnostic imaging.

Nuclear Medicine Companion

This book provides a rapid and concise guide to PET (PET/CT and PET/MRI) molecular imaging, concentrating extensive information on PET radiopharmaceuticals in a single volume. The book reflects the rapid development of several PET tracers over the last decade, as a result of which the “traditional” PET/CT with 18F-FDG, the “cornerstone” of PET imaging, is now only one of several available options, which use different tracers for different diseases. For the same reason, PET imaging is no longer limited to the field of oncology. In the editors’ experience, students in medicine and residents in nuclear medicine and radiology have limited access to scientific papers concerning novel PET tracers. Moreover, these papers generally focus on a single PET radiopharmaceutical. With approx. 20 radiopharmaceuticals explained in detail and a wealth of images and clinical cases, the book represents a versatile, comprehensive and practice-oriented guide to PET imaging, pursuing a unique and novel approach to the clinical role of PET tracers. The book’s didactic nature also makes it an invaluable tool for residents in nuclear medicine and radiology, as well as for radiographers and clinicians in radiotherapy,

oncology, hematology, cardiology and neurology.

Nuclear Oncology

This publication provides a comprehensive overview of the technologies involved in the direct production of gallium-68. It serves as a specific guide for the production and quality control of metal radioisotope gallium-68 in chloride form for radiopharmaceutical production. Emphasis is given on the advances developed over the last few years. The publication, which also describes the legal matters related to the use of the targetry methods, will appeal to scientists and technologists intending to put cyclotron based radioisotope production into practice, as well as post graduate students in the field.

Radiopharmaceutical Chemistry

Radioisotope-based molecular imaging probes provide unprecedented insight into biochemistry and function involved in both normal and disease states of living systems, with unbiased in vivo measurement of regional radiotracer activities offering very high specificity and sensitivity. No other molecular imaging technology including functional magnetic resonance imaging (fMRI) can provide such high sensitivity and specificity at a tracer level. The applications of this technology can be very broad ranging from drug development, pharmacokinetics, clinical investigations, and finally to routine diagnostics in radiology. The design and the development of radiopharmaceuticals for molecular imaging studies using PET/MicroPET or SPECT/MicroSPECT are a unique challenge. This book is intended for a broad audience and written with the main purpose of educating the reader on various aspects including potential clinical utility, limitations of drug development, and regulatory compliance and approvals.

Therapeutic Nuclear Medicine

The WHO Classification of Tumours of Endocrine Organs is the 10th volume in the 4th Edition of the WHO series on histological and genetic typing of human tumours. This authoritative, concise reference provides an international standard for oncologists and pathologists and will serve as an indispensable guide for use in the design of studies evaluating response to therapy and clinical outcome. Diagnostic criteria, pathological features, and associated genetic alterations are described in a disease-oriented manner. Sections on all recognized neoplasms and their variants include new ICD-O codes, epidemiology, clinical features, pathology, genetics, prognosis, and predictive factors. The book, prepared by 166 authors from 25 countries, contains more than 700 color images and tables and more than 3100 references.

Molecular Imaging

Oncological imaging has thoroughly changed in the past decade, especially due to the introduction of PET and 18FDG. In Positron Emission Tomography, expert referring specialists and professional imagers seek to help bridge some of the knowledge gaps in several oncological domains. The book’s goal is to aid in the

improvement of communicative competences: to communicate scan findings so that the referring specialist receives proper advice from the imager, and that, alternatively, the referring one provides the imager with appropriate clinical details to allow for a proper interpretation, and that the referring specialist is aware of the possibilities and limitations of the requested technology. While it focuses on FDG PET, other radiopharmaceuticals are covered as well, where appropriate. Written for the highly respected Methods in Molecular BiologyTM series, this volume provides the kind of detailed description and implementation advice that is crucial for getting optimal results. Authoritative and convenient, Positron Emission Tomography serves as an excellent reference for oncologists, surgeons, radiotherapists, radiologists, nuclear medicine physicians, and pathologists desiring a stronger synergy within their vital efforts.

Clinical Nuclear Medicine

The term ‘carcinoid’ entered medical literature over 100 years ago to describe a peculiar intestinal epithelial neoplasm. Since then, a large body of literature has expanded the concept of carcinoid, later replaced by the term ‘NeuroEndocrine Tumor’ (NET), defining a wide spectrum of peculiar tumors, potentially affecting all organs and tissues, originating from neuroendocrine cells, sharing, but, at the same time, keeping, pathognomonic pathological, radiological and clinical features. This book provides an authoritative overview of the epidemiological, clinical, genetic, molecular and pathological characteristics of NETs and highlights the most relevant controversial issues in the classification, diagnosis and therapy. Furthermore the new frontiers in the field of medical therapies are presented, through a multidisciplinary and translational approach. Considering the fact that NETs have been recently demonstrated less rare as considered so far, 'Neuroendocrine Tumors: A Multidisciplinary Approach' is a must read for endocrinologists, gastroenterologists, endocrine surgeons, as well as pathologists, nuclear medicine physicians and radiologists focused on NET.

Neuroendocrine Tumors in Real Life

This work has true international scope, being a unique European/American joint venture that focuses on the state of the art in both diagnostic and therapeutic radionuclide methodology. Pertinent clinical applications are emphasized rather than attempting to cover everything included in the several large comprehensive texts available in our field. This "practical" approach should make it an essential guide to nuclear medicine physicians, technologists, students and interested clinicians alike.

The Journal of Nuclear Medicine

"The WHO Classification of Tumours of the Digestive System presented in this book reflects the views of a Working Group that convened for an Editorial and Consensus Conference at the International Agency for Research on Cancer (IARC), Lyon, December 10-12, 2009"--P. [5].

Theranostics, Gallium-68, and Other Radionuclides

This issue of PET Clinics examines PET/CT Imaging in Tracers Beyond FDG. Article include standardization and quantification in PET/CT imaging: tracers beyond FDG; 18F NaF PET/CT imaging; 18F NaF PET/CT imaging in pediatrics; choline PET/CT imaging for the head and neck, thorax, abdomen, and pelvis; DOPA PET/CT imaging for the head and neck, thorax, abdomen, and pelvis; 68 GaSSRTs PET/CT imaging for the head and neck, thorax, abdomen, and pelvis; FLT PET/CT imaging for the head and neck, thorax, abdomen, and pelvis; hypoxia tracers; PET/MRI tracers beyond FDG: current status and future aspects; PET/CT normal variations: effect of novel quantitative approaches; and more!

Handbook of Nuclear Chemistry

This pocket book explains the significant and well-documented impact that PET/CT can have on the management of prostate cancer through the provision of high-quality evidence regarding function and structure. Up-to-date information is supplied on the relevance of PET/CT to diagnosis, treatment planning, and therapy, including the emerging role of PET/CT with PSMA. Readers will also find clear explanation of the relation of the clinical and pathological background to imaging and the value of PET/CT compared with conventional radiological imaging. The book will be an excellent asset for referring clinicians, nuclear medicine/radiology physicians, radiographers/technologists, and nurses who routinely work in nuclear medicine and participate in multidisciplinary meetings. It is published within the Springer series Clinicians' Guides to Radionuclide Hybrid Imaging, which presents contributions from professionals worldwide who share a common purpose in promoting nuclear medicine as an important imaging specialty for the diagnosis and management of oncological and non-oncological conditions.

Cardiac Positron Emission Tomography

This book aims to equip readers with a better understanding of neuroendocrine tumors of the abdomen and explains how to manage them optimally by making use of novel therapeutic options that represent major advances on previous treatments. The most recent advances in epidemiology, genetics, molecular biology, biomarkers, pathology, diagnostics, clinical assessment, medical therapy, and surgical treatment are presented. The information and data provided will stimulate readers to develop their personal opinions on significant issues and assist in decision making in individual patients during routine clinical practice. The book features a multidisciplinary approach and is designed to meet the needs of all physicians seeking comprehensive guidance from experts on the management of patients with neuroendocrine tumors. It will also be of value for researchers wishing to acquaint themselves with the state of the art in the field and emerging research avenues. Abdominal Neuroendocrine Tumors is published in Springer's highly successful Updates in Surgery series, which now comprises more than 20 titles.