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“PET has the ability to measure biochemical responses to disease in the brain prior to gross changes in anatomy and, in some cases, prior to symptom onset resulting in early diagnosis and improved patient management.”

John C. Mazzotta, M.D., Ph.D.
President of Institute for Clinical PET (ICP)
Vice-Chairman of Neurology
Professor of Neurology and Radiology
UCLA School of Medicine

CARDIOLOGY

“PET is the only reliable technique currently available to assess myocardial viability. This information is often invaluable in making therapeutic decisions.”

Peter Alegone, Jr., M.D.
Associated Medical Director
St. Joseph’s Positron Center
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Mathis P. Frick, M.D.
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A sequence of five evolving SPECT images. Note improvement of image quality, yielding final resolution of 7mm (tomographic brain phantom scan, courtesy of Dr. J. Abramovici, Ixelle, Belgium).
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With Scatter-Free Imaging, the system “learns” the local scatter characteristics and makes corrections based on the measured energy spectrum, for

* HR configuration
each pixel, for each image, for each patient.

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Helix draws on more than a decade of pioneering activity in digital nuclear imaging and over 20 years of medical image processing experience.

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1981—Elscint sets the trend for the 80’s by introducing the first digital gamma camera, the APEX®.

1991—Elscint introduces...
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DigitalGuard is a built-in optronic system for periodic automatic calibration of the gamma camera.

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MasterMind is an artificial intelligence “expert” system, providing every on-site nuclear medicine field engineer with the constantly updated troubleshooting expertise of the company’s leading scientists and engineers.

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Helix: the intelligent investment

When it comes to multi-detector systems, Helix could be the easiest, most logical product choice you ever made. You simply can’t go wrong.

With Helix you know that every referral can be imaged, every nuclear medicine procedure can be performed. No compromises, absolutely none.

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Look at Elscint’s new Helix, and you’re looking at the future of nuclear imaging technology.

A whole new world of imaging brought to life by our RingMaster™ Slip-Ring System. Take Evolving-Images™ and RollBack,™ for example, two terms that are probably new to you.

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**LOCATION:**
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Contributing Authors: Susan Gilbert, Adrian D. LeBlanc, Robert Schleipman, James E. Silvers, Donald E. Widmann, Brenda Woods.
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CardioTec (Kit for the Preparation of Technetium Tc 99m Teboroxime)

Please see the brief summary of prescribing information for CardioTec on the adjacent page.
Cardiotec®

Kit for the Preparation of Technetium Tc 99m Teboroxime

FOR DIAGNOSTIC USE

DESCRIPTION

Each 5 mL reaction vial contains a sterile, nonpyrogenic, lyophilized formulation of 2.0 mg cyclohexanedione dioxime, 2.0 mg methyl boronic acid, 2.0 mg pentelic acid, 9.0 mg citric acid, anhydrous; 100 mg sodium chloride, 50 mg gamma cyclodextrin and 0.058 mg (maximum) total tin expressed as stannous chloride (SnCl2), 0.020 mg (minimum) stannous chloride (SnCl2). The pH is adjusted with sodium hydroxide and/or hydrochloric acid prior to lyophilization. The contents of the vial are lyophilized and sealed under nitrogen at the time of manufacture. No bacteriostatic preservative is present.

When sterile, pyrogen-free sodium pertechnetate Tc 99m injection is added to the vial, and the solution is heated at 100°C for 15 minutes, the diagnostic agent Technetium Tc 99m Teboroxime is formed for administration by intravenous injection. The pH of the reconstituted product is 3.7 (range 3.3 to 4.1).

INDICATIONS AND USAGE

Technetium Tc 99m Teboroxime is a myocardial perfusion agent that is useful in distinguishing normal from abnormal myocardium in patients with suspected coronary artery disease using rest and stress techniques.

CONTRAINDICATIONS

None known.

WARNINGS

Stress testing should be performed only under the supervision of a qualified physician and in a laboratory equipped with appropriate monitoring, resuscitation and support apparatus.

PRECAUTIONS

General

Contents of the reaction vial are intended only for use in the preparation of Technetium Tc 99m Teboroxime and are not to be administered directly to the patient.

Contents of the kit before preparation are not radioactive. However, after the addition of sodium pertechnetate Tc 99m injection, adequate shielding of the final preparation must be maintained. The components of the kit are supplied sterile and non-pyrogenic. Aseptic procedures normally employed in making additions and withdrawals from sterile, non-pyrogenic containers should be used during the addition of the pertechnetate solution and the withdrawal of doses for patient administration.

The technetium Tc 99m labeling reactions involved in preparing the agent depend on maintaining the stannous ion in the reduced state. Any oxidant present in the sodium pertechnetate Tc-99m supply may thus adversely affect the quality of the radiopharmaceutical. Hence, sodium pertechnetate Tc-99m containing oxidants should not be employed.

Radiopharmaceuticals should be used only by physicians who are qualified by training and experience in the safe use and handling of radionuclides and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

As in the use of any radioactive material, care should be taken to minimize radiation exposure to the patient consistent with proper patient management and to ensure minimum radiation exposure to occupational workers.

Tc-99m Teboroxime should be formulated no more than 6 hours prior to clinical use.

Carcinogenesis, Mutagenesis, Impairment of Fertility

In comparison with most other diagnostic technetium labeled radiopharmaceuticals, the radiation dose to the ovaries (1.8 rads/50 mCi) is high. Minimal exposure (ALARA) is necessary in women of childbearing capability. (See Dosimetry subsection in DOSAGE and ADMINISTRATION section.)

No long-term animal studies have been performed to evaluate carcinogenic potential or to determine the effects of Cardiotec on fertility in males or females. Three different mutagenicity assays (a reversion test with bacteria, a chromosomal aberration assay and an in vivo mouse micronucleus assay) conducted with cold (decayed) technetium la-

beled Cardiotec gave negative results. Cardiotec was weakly positive for inducing forward mutations at the TK locus in L5178Y mouse lymphoma cells in the absence of metabolic activation (but only at high concentrations that were toxic to the cells and reduced growth to 33% or less relative to vehicle controls). Cardiotec was negative in this assay in the presence of metabolic activation.

Pregnancy Category C

Animal reproduction studies have not been conducted with Technetium Tc 99m Teboroxime. It is also not known whether Technetium Tc 99m Teboroxime can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Technetium Tc 99m Teboroxime should be given to a pregnant woman only if the expected benefits to be gained clearly outweigh the potential hazards.

Ideally, examinations using radiopharmaceuticals, especially those elective in nature, in women of childbearing capability, should be performed during the first few (approximately 10) days following the onset of menses.

Nursing Mothers

Technetium Tc 99m is excreted in human milk during lactation. Therefore, formula feedings should be substituted for breast feedings.

Pediatric Use

Safety and effectiveness in children below the age of 18 have not been established.

ADVERSE REACTIONS

Uncommon adverse reactions reported in clinical trials include metallic taste in mouth, burning at injection site, facial swelling, numbness of hand and arm, hypotension and nausea after administration of Technetium Tc 99m Teboroxime.

HOW SUPPLIED

Cardiotec® (Kit for the Preparation of Technetium Tc 99m Teboroxime) is supplied in kits of 5, 10, and 25 reaction vials. (J4-282A)

SQUIBB™
Diagnostics

Reference

1. Data on file, Squibb Diagnostics.
Positions Available

Faculty
The University of Chicago Department of Radiology is seeking a SENIOR FACULTY PHYSICIAN who is Board certified/eligible in nuclear medicine with experience and commitment to clinical care, medical education and research. Must have demonstrated ability to perform independent and scholarly research, direct a laboratory and have a proven track record of obtaining federal grant support. Please apply to: Dr. Martin J. Lipton, Chairman, Department of Radiology, 5841 South Maryland Avenue, Box 429, Chicago, Illinois 60637. Phone (312) 702-6024, FAX (312) 702-1611. Affirmative action/equal opportunity employer.

NUCLEAR MEDICINE STAFF POSITION: Candidate sought for faculty position with strong interest in Nuclear Medicine research and experience in 1. PET receptor imaging in Alzheimer’s Disease and 2. development and implementation of MRI-based methods for partial volume correction in PET. MD applicant preferred. Contact: J. James Frost, MD, PhD, Johns Hopkins Medical Institutions, Division of Nuclear Medicine, 600 N. Wolfe Street, Baltimore, Maryland 21205.

The University of California, Los Angeles seeks an ASSISTANT PROFESSOR in the Division of Nuclear Medicine and Biophysics. The successful applicant will be expected to develop a research program in the study of the regulatory mechanisms of neurotransmitter systems and the development of selective probes labeled with positron emitting labeled tracers for in-vivo assays of these systems with PET. Applicant will be expected to participate in educational programs for graduate students and residents. Minimum qualifications include a PhD in basic sciences and specialized training in in-vivo neurochemistry. Submit curriculum vitae, bibliography and references by October 1, 1991 to J.R. Barrio, PhD, UCLA School of Medicine, Division of Nuclear Medicine and Biophys-
The practice involves all aspects of diagnostic and therapeutic nuclear medicine, including nuclear cardiology, SPECT, and thyroid disease. Applicants must be ABNM certified or eligible with an internal medicine background. Send CV and references in confidence to Box 901, The Society of Nuclear Medicine, 136 Madison Avenue, New York, NY 10016.

ATTENDING PHYSICIAN, DIVISION OF NUCLEAR MEDICINE: There is an opening for a nuclear medicine specialist at the Assistant Professor level at a University Hospital. There is an active ambulatory care service as well as a 500-bed in-patient population. Over 5000 studies are performed annually. There are training programs in Nuclear Radiology and Nuclear Medicine. Affiliations with a Veterans Administration Medical Center and Brookhaven National Laboratory. Please forward your CV to: Harold L. Atkins, MD, Chief, Division of Nuclear Medicine, Department of Radiology, School of Medicine, Health Sciences Center, State University of New York at Stony Brook, NY 11794. SUNY, Stony Brook is an affirmative action/equal opportunity educator and employer.

CHIEF, DIVISION OF NUCLEAR MEDICINE: A position is available as Chief of Nuclear Medicine at a University Hospital of 500 beds with an active ambulatory care service. Over 5000 studies are performed annually. There is an approved Nuclear Radiology Training Program as well as an affiliation with a VA Nuclear Medicine Residency Program. Collaborative research is carried out at nearby Brookhaven National Laboratory. Board certification and at least 10 years experience is required. Please forward your CV to: Harold L. Atkins, MD, Chief, Division of Nuclear Medicine, Department of Radiology, Health Sciences Center, State University of New York at Stony Brook, NY 11794-8460. SUNY, Stony Brook is an affirmative action/equal opportunity educator and employer.

Physician University Hospital at Stony Brook has a position available for a NUCLEAR MEDICINE MEDICAL PHYSICIST in its Diagnostic Medicine Physics/Radiation Safety Group. A Master of Science in Medical Physics or one of the Physical Sciences and eligibility for board certification (ABM or ABMP) in Medical Physics is required. Candidates must also have at least 3 years medical physics experience in a Diagnostic Radiology or Nuclear Medicine Department and image processing computer experience. The successful candidate will be responsible for all technical aspects of the clinical operation in the Division of Nuclear Medicine. This will include, but is not limited to, purchasing specifications, acceptance testing and quality control of imaging devices, image processing computers, counters and analyzers. The incumbent will also act as the Radiation Safety Officer for the Division of Nuclear Medicine. In this capacity, the incumbent will oversee the safe receipt, application and disposal of radioactive materials. As an expert of image formation and image processing, the incumbent will serve as a valuable consultation resource to physicians, technologists and researchers. Finally, the incumbent will provide Medical Physics instruction at the graduate, resident and technologist levels. Stony Brook is located on the north shore of Long Island, only 60 miles from New York City and 20 miles from Brooklyn National Lab. The area boasts some of the finest residential areas in the country. Salary and academic rank will be based on experience. SUNY at Stony Brook is an equal opportunity employer. For further information, send your curriculum vitae to: Terry M. Button, PhD, Department of Radiology, University Hospital, SUNY-Stony Brook, Stony Brook, NY 11794.

Research Associate RESEARCH ASSOC. to dev. reconstruction algorithms to improve brain images for Positron Emission Tomography (PET). Req: PhD in eng'r or phy'l sci & 1 yr exp, as either Research Assoc. or Research Sci. Spec. Req: From educ &/or exp. (1) 1 yr exp in ea of fo1 (may be concurrent): a. multi-dimensional digital signal processing in tomographic image reconstruction & b. medical imaging research w/ focus on PET; (2) exp w/UNIX development & C & Fortran-based image processing SW. Sa.: $42,500 yr. Res: L. Cheetham (#487), MMJN Job Service, 390 N. Robert, St. Paul, MN 55101.

Residency NUCLEAR MEDICINE RESIDENCY. The division of Nuclear Medicine, Department of Radiology, The New York Hospital-Cornell Medical Center, New York City offers a 1 or 2 year residency available July 1, 1992. The Division has a completely new 25,000 square feet facility with state-of-the-art equipment, and is staffed by three full-time physicians, two basic scientists, and a computer programmer. The residency program includes all aspects of nuclear medicine as well as thyroidology, RIA and clinical research. Electives can be arranged. For further information please contact: Barbara L. Brezart, MD, Director of Residency Program, Division of Nuclear Medicine, New York Hospital-Cornell Medical Center, 525 East 68th Street, New York, NY 10021 or call (212) 346-4580.

NUCLEAR MEDICINE RESIDENCY. July 1992. Comprehensive imaging/RIA therapy program in 3 hospitals (private, county, VA) with 2,800 total beds. Mobile imaging for 216 ICU beds. Large pediatric population. Strong cardiovascular emphasis. State-of-the-art instrumentation including SPECT and computer processing. Training includes introductory rotations in NMR, PET, and CT/ultrasound. Contact: Warren H. Moore, MD, Department of Radiology, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030. Baylor College of Medicine is an equal opportunity A/A employer.

Technologist CHIEF NUCLEAR MEDICINE TECH. Jane Phillips Episcopal Memorial Medical Center is a 244-bed acute care hospital located in Bartlesville, OK, 45 miles north of Tulsa. Our ultramodern diagnostic imaging department is a state-of-the-art environment with many challenges waiting for you. Qualified candidates must have or be eligible for registration. Thrive in our lovely residential community where the lifestyle is healthy and offers a blend of cultural, recreational and civic activities. For immediate consideration, send your resume to: Jane Phillips Medical Center, Blythe Yorman, RN, BSN, Professional Recruiter, 3500 S.E. Frank Phillips, Bartlesville, OK 74006. EOE.

NUCLEAR MEDICINE TECHNOLOGIST for medical group involved in developing new metabolic scans and improving current techniques. Applicants must be registered, registry eligible, or licensed in the state of Louisiana. We offer a competitive salary and excellent benefit package. Please send resume to: P.O. Box 207, Houma, LA 70361-0027.

(continued)
Technologist

NUCLEAR MEDICINE TECHNOLOGIST. Full-time position available, on-call every 4-5 weeks, at the University of Washington Medical Center in Seattle, a 360-bed tertiary hospital with an active nuclear medicine residency program. Position requires certification. G.E. Starcam experience is useful. Position includes computer protocol design and implementation, daily clinical nuclear medicine, and participation in research projects. Opportunities are available for participation in professional and scientific meetings. Salary $2263-2961 per month based on experience. Call back at time and one-half. Standby at $2.00/hour. Call or send resume to: Ray Thomas, Nuclear Medicine, RC-70, University of Washington Medical Center, 1959 N.E. Pacific, Seattle, WA 98195. (206) 548-4328 EOE.

STAFF NUCLEAR TECHNOLOGIST. Registered or registry eligible technologist to join current staff of eight. Midwestern Regional Medical Center, a 450+ bed hospital. Send resume to: Sioux Valley Hospital, PO Box 5039, Sioux Falls, South Dakota 57107-5039. EOE/AAE

Equipment

WANTED, IMMEDIATE PURCHASE: Picker Dyna 4C Cameras, G/E MAXI 2 Cameras, G/E 400 Cameras, Elscint SPECT & Non-SPECT Cameras, Lunar Bone Densitometer, also Ultrasound, Radiology, CT, Multi-Imagers. Call Health Care Exports, Inc. (305) 594-0026.

For sale: Technicare 420/550, ADAC's vertical CDS, system 1, system III, DPS 2800. We offer the highest prices for all types of nuclear medicine cameras & computers. Call Franklin at Imaging Solutions (415) 924-9055.

Back Issues

For sale: First 15 volumes of the JNM 1960-1974. Vol. 1-5 are bound. Will include Marshall Brucker's Vignettes issues 1-103. $50.00 plus shipping. L. Moser, MD (818) 858-0790.

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SIEMENS SOFTWARE R&D

APPLICATIONS TO NUCLEAR MEDICAL IMAGING

THE COMPANY

Siemens Gammasonics is a progressive subsidiary of Siemens A.G., one of the world's largest electronics manufacturers. Through advancements in such vital fields as nuclear medicine and digital radiography, our team of professionals has earned an international reputation for innovative excellence. Back your career with a people-oriented company that's enjoyed a 35-year history of pacesetting achievement. The demands for our high tech diagnostic imaging equipment assure you of refreshing challenge and realistic opportunity for advancement.

THE OPPORTUNITY

Our Applied Physics and Research Group is seeking a Physicist, Computer Scientist or Biomedical Engineer with background in development of software for nuclear systems. The particular position now opening up involves the development of innovative nuclear medicine software and the transfer to the engineering stages. Previous experience in the field of nuclear imaging, particularly that of nuclear medicine, is highly desirable. The ideal applicant will have an exceptional GPA, and be an innovative problem solver with good mathematical and problem-solving skills. A Ph.D. or M.S. is required, preferably in physics, computer science, or an applied field. Proven ability to work in a multidisciplinary environment is essential together with interpersonal skills required for the transfer of technology from R&D to the final product.

THE COMPENSATION PACKAGE

Siemens compensation package ranks among the best in the industry and includes:

• Competitive salaries
• Company-paid retirement plan
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• And much more!

THE INVITATION

We invite qualified professionals to explore this rewarding career opportunity by sending a detailed resume to:

Director of Personnel
SIEMENS GAMMASONICS, INC.
2501 N. Barrington Road
Hoffman Estates, IL 60195-7372
An Equal Opportunity Employer M/F/H/V
Supervisor, Nuclear Medicine
Kaiser Permanente, Southern California

Kaiser Permanente is one of the nation’s leading health care providers. As such, we can offer you stimulating professional challenges and exceptional personal rewards, including a comprehensive benefits package. We’re currently offering an excellent supervisory position in the Nuclear Medicine Department of our Los Angeles medical center.

You will oversee the development and implementation of sound fiscal control programs, departmental procedures and policies and high quality service programs to maintain effective operations. You will also head the Personnel Management and Quality Assurance programs, as well as ensure radiation safety and compliance with JCAHO and Department of Health standards and regulations.

The candidate we’re seeking must be a California certified NMT with a Bachelor’s degree, 4 years experience as a Nuclear Medicine Technologist and 2 years as an Administrative Technologist.

Kaiser Permanente offers competitive salaries and a comprehensive benefits package, which includes employer paid medical, dental and vision care coverage for you and your eligible dependents. For immediate consideration, please call or submit resume to: Gall Franklin, Kaiser Permanente, Dept. JOU-108-09/01/91, 1515 N. Vermont Avenue, 2nd Floor, Los Angeles, CA 90027, (213) 677-4747. We are an Equal Opportunity/Affirmative Action Employer.

Director of Nuclear Medicine with Diagnostic Radiology Responsibilities

This private practice opportunity for a Diagnostic Radiologist with Special Competence in Nuclear Radiology offers the outstanding earnings potential of a very busy, successful, and respected practice, but the real attraction is the superb quality of life offered by this culturally, recreationally and economically diversified city of 250,000. This city is highly rated as one of the most desirable places to live in the United States and is located in one of the most popular recreational areas in the country. Numerous lakes, state parks, ski resorts, renowned vacation resorts, and a national park are within an hour’s drive; you will not have to wait for that occasional holiday or vacation to enjoy hiking, camping, fishing, boating and skiing, with your family and friends. The city offers superb shopping and some of the finest dining anywhere. The city’s numerous excellent public schools are complemented by many private school options. Many colleges and a major southeastern university are located here. A nationally acclaimed theatre group, a symphony orchestra and a metropolitan airport are all present.

This is an opportunity to be Director of the Nuclear Medicine Departments at two hospitals, as well as interface extensively in a broad range of Diagnostic Radiology duties and special procedures. As Director of Nuclear Medicine, you will set up the protocols and procedures of the Nuclear Medicine Departments and will interpret the lion’s share of Nuclear Medicine studies of both hospitals. Additionally, you will work closely with the group members in Diagnostic Radiology interpretations. The expected percentage split is 33% Nuclear Medicine and 66% Diagnostic Radiology. Coverage will be shared equally with all members in the group. The position is with an extremely busy 9 man radiology group covering 2 of the city’s busiest major hospitals. There is a strong emphasis on Nuclear Cardiology at one of the hospitals. Each radiologist averages over 20,000 procedures per year. The group relies heavily on teleradiography, both for transmitting images between hospitals for second opinions and consults, and for transmitting images to the home of the radiologist on call. The radiology departments are modern and well-equipped with each hospital having 3 G.E. SPECT Cameras, 2 G.E. 9800 CT Scanners, and 1 G.E. 1.5 Tesla MRI Scanner. The latest state-of-the-art equipment and facilities for all other general and interventional radiology procedures are present.

The group has a busy nuclear medicine service already in place, but they are recruiting a Director of Nuclear Medicine to replace the retiring Director. The preferred candidate will be board certified in Radiology with Special Competence in Nuclear Radiology and/or certification in Nuclear Medicine. Radiologists who are interested in committing to sub-specialty training in Nuclear Radiology will be considered. A comprehensive financial package includes interview expenses, competitive salary, and fringe benefits. Partnership option is available.

To receive additional information on this or other opportunities, please call Jeff Bohannon at (800) 467-5001 or (615)370-0100 and send your Curriculum Vitae to:

Jeff Bohannon
The Resource Company, Inc.
500 Wilson Pike Circle, Suite 218
Brentwood, Tennessee 37027
NUCLEAR MEDICINE SUPERVISOR

OUR LADY OF THE LAKE REGIONAL MEDICAL CENTER, located in Baton Rouge, LA is Louisiana's largest and finest private acute-care facility, and we are currently seeking a Supervisor for our Nuclear Medicine Department. Duties include: Utilizing technical, educational and management skills to develop department & personnel to maximum potential, plans, organizes and schedules department operations and maintains open communication within department and other hospital areas.

Qualifications include: Current NMTCB registry or ARRT-N. 5 years minimum experience in nuclear medicine. Bachelor's degree desirable.

We offer an outstanding salary and benefits package to include interview and relocation assistance. Send confidential resumé to:

Dawn Abbott
Human Resources Dept.
OUR LADY OF THE LAKE REGIONAL MEDICAL CENTER
500 Hennessy Blvd.
Baton Rouge, LA 70808
(504) 785-8803

VIRGINIA MASON CLINIC

VMC, in beautiful Seattle, has a FT position for a Nuc. Med. Tech who will perform a full-range of Nuclear Planar and SPECT imaging, radiopharmaceutical preparations, and teach students in technology program. Qualified candidates must hold current (ARRT(N), NMTCB, RTNM). For more information, please call Richard Lee, (206) 223-6951 or Bob Shimer, (206) 223-7642

Nuclear Medicine Physician

Victoria Hospital is a 750-bed teaching hospital with affiliated regional children's hospital, cancer clinic, chronic care and other health facilities. The Department of Nuclear Medicine is seeking a nuclear medicine physician to join a professional staff of five nuclear medicine physicians and three scientists. The department provides comprehensive diagnostic and therapeutic services (14,000 procedures yearly) and participates in physician, technologist, and graduate science training programs. The successful candidate will have a strong clinical background and be extensively involved in nuclear cardiology including stress testing. Academic and investigational activities are expected as requirements for appointment at the University of Western Ontario. Applicants must be certified in nuclear medicine by the Royal College of Physicians and Surgeons of Canada or eligible to take the examinations. Canadian law requires that preference be given to qualified applicants who are Canadian citizens or permanent residents of Canada. Position available immediately. Apply to Dr. J.E. Powe, Chief of Nuclear Medicine, Victoria Hospital Corporation, 376 South Street, London, Ontario N6A 4G5. Phone: (519) 667-6571, FAX: (519) 667-6734.
Each description of the products below was condensed from information supplied by the manufacturer. The reviews are published as a service to the professionals working in the field of nuclear medicine and their inclusion herein does not in any way imply an endorsement by the Editorial Board of The Journal of Nuclear Medicine or by The Society of Nuclear Medicine.

LLRW Compactor

S&G Enterprises announces the RAM FLAT Compactor Model 85AR, engineered for compacting hazardous materials within an 85-gallon drum. The machine was developed in response to hazardous waste safety standards that require packaging of dry waste or leaking 55-gallon drums and their contents in 85-gallon drums. The unit has an 85,000-pound compaction force, and can compact within any type of 85-gallon drum, including drums that are reconditioned, or made from fiber, plastic, or metal. Prepared for normal or explosion-proof service, the unit can deal with any hazardous or low-level radioactive wastes requiring compaction. With a change of the compaction head, the machine can reduce 85-gallon drums to five-inch metal disks for easy disposal. Options include a compaction chamber pump-out system for wastes involving hazardous or toxic liquids, sealed compaction chambers for volatile materials, remote controls for complete operator protection, and air filtering systems for fume and particulate matter removals. The door opening width of 29 inches supplies ample room to load 85-gallon drums. Other features include a 1.5-inch structural steel base plate, and a door and compaction chamber made of 0.375-inch steel plates. Lorin C. Griffith, Grasso/Hilimer and Associates Inc., Communication and Marketing Services, 1505 11th Avenue, PO. Box 318, Grafton, WI 53024. (414) 375-1015.

Circle Reader Service No. 101

Three-Detector SPECT System

Toshiba America Medical Systems, Inc. offers the GCA-9300A multi-detector, whole-body ultrasound system dedicated to SPECT studies. Designed to perform head and total-body SPECT, this three-detector gamma camera provides high-resolution images of functional anatomy. The system allows clinicians to imagine an object as small as the caudate nucleus and view the heart, liver, brain, and other vital organs. It utilizes Toshiba's Optotune Detector Performance Optimization Electronics System to improve imaging performance. By constantly regulating the detector electronics, the response is optimally maintained, resulting in higher-resolution images with increased diagnostic content. The system can simultaneously perform digital image data acquisition, image processing, data transfer, and computer communication. Suzanne Flynn, Toshiba America Medical Systems, Inc., 2441 Michelle Drive, Tustin, CA 92681. (714) 730-5000.

Circle Reader Service No. 103

Whole-Body/SPECT Imaging System

Siemens' DIACAM, a rectangular body/SPECT imaging system was developed for advanced nuclear medicine imaging procedures that require cameras with a high-energy range. The system is designed to cover all energy ranges of radionuclides used in nuclear medicine from cardiac to monoclonal antibody studies. It utilizes a patented electronic technique that permits high spatial resolution at high count rates. An Auto Balance feature maintains system stability for easy patient positioning and fast collimator changing. The Patient Handling System requires no patient repositioning for planar, SPECT, and single-pass whole-body studies. The system incorporates Siemens' Digital Integrated Processor and ZLC correction circuitry for intrinsic energy variations and spatial nonlinearities. The DIGITRAC detector further enhances the camera's performance by continuously monitoring and calibrating each Photomultiplier Tube (PMT) for gain drift. The detector also utilizes Bonded Optics to alleviate crystal stress from PMT pressure. Bonded Optics assures long-term reliability by eliminating decoupling of the PMTs and providing uniform light transmission. Siemens Medical Systems, Inc., Nuclear Medicine Division, 2501 Barrington Road, Hoffman Estates, IL 60195. (708) 304-7252.

Circle Reader Service No. 102
**Patient Transport Board**

Atomic Products Corporation has developed a high-density polyethylene patient transport board that features high-impact strength, resistance to abrasion and stress cracks, and tensile strength. The unit allows patient repositioning to be done quickly with minimal effort. Often only one person is needed to complete the move. Available in two sizes, the Atomlab Easy Mover is semirigid and radiolucent, allowing the patient to remain on the mover during imaging procedures. A hardwood wall rack is available when the unit is not in use. Atomic Products Corporation, P.O. Box 702, Shirley, NY 11967. (516) 924-9000.

Circle Reader Service No. 104

**Emission Tomography Carousel**

A.T.F. Consolidated introduces the Emission Tomography Carousel as an alternate gantry for nuclear SPECT imaging. The unit's design permits erect SPECT imaging of the heart, brain, upper abdomen, and chest. It is compatible with most nuclear medicine computers with SPECT software. Large and small field gamma cameras may be utilized. The unit requires no construction or space changes. It can be stored in any 3x3-foot storage space and installation requires less than one day. Since there are few moving parts, downtime is minimal. A.T.F. Consolidated, Inc., 94 J Jefryn Blvd., Deer Park, NY 11729. (516) 586-9762.

Circle Reader Service No. 106

**Uninterruptible Power System**

Best Power Technology, Inc. has released Fortress, an uninterruptible power system that uses line-interactive circuitry to deliver no-break power. The unit measures 6.75 inches high, 5.25 inches wide, and 15.75 inches long, and weighs 21 pounds. It offers a digital display that allows users to view true, load-dependent runtime, percent loading, voltage in/out, and battery voltage. It also has nine user-programmable operation functions and alarms that warn users of low backup time, overloads, overcurrent shutdowns, site wiring faults, and other conditions. The power systems feature the following runtimes: the 360 VA model will support an Apple Macintosh SE/30 for 55 minutes and an IBM PS/2 model 55 with VGA monitor for 15 minutes. The 460 VA model will support an IBM 3151 display station for 53 minutes and a Compaq Deskpro 386 for 14 minutes. The 660 VA model supports a Sun 3/60 workstation for 26 minutes and an IBM RS/6000 320 for six minutes. Fortress' line-interactive design is the key to uninterruptible power protection. Its inverter constantly interacts with the input line to buck, boost, or replace incoming power. The inverter is controlled by a three-stage power analysis circuit that uses artificial intelligence to learn prevailing power conditions and anticipate problems before they happen. In addition, the unit has a zero-surge clamping response time and can dissipate 300 Joules of energy at 6,500 amps. Fortress provides 47 dB of normal-mode noise rejection, and 38 dB of common-mode noise rejection. Its multi-stage noise filtering circuitry is constantly on-line to protect loads. The system boosts output voltage during brownouts without going to inverter. It features an autotransformer that can keep output within accepted industry standards, even when the input voltage drops as low as 88 volts. Fortress also provides pure sine-wave output, with less than 5% total harmonic distortion. Kenneth Urban, Best Power Technology, Inc., P.O. Box 280, Necedah, WI 54646. (608) 565-2929 or (800) 356-5794.

Circle Reader Service No. 107

**Pressurized Ion Chamber Survey Meter**

Victoreen, Inc. announces the availability of Model 450P-DE-SI Pressurized Ion Chamber Survey Meter. The chamber is designed to meet the International Council of Radiation Protection's published energy response curve for the determination of the ambient dose equivalent. The dose quantity was derived by the ICRP to better predict absorbed doses in tissue at a depth of 1 cm. The model's other features include five operating ranges from 0-5 μSv/hr to 0-50 mSv/hr, combined analog/digital liquid crystal display, fast response time, automatic zeroing and ranging, and RS-232 communications capability with the optional Model 450-1A Communicator. Margaret Meek, Marketing Services, Victoreen, Inc., 6000 Cochran Road, Cleveland, OH 44139. (216) 248-9300.

Circle Reader Service No. 108
Here come two important new benefits in cardiac imaging
The superior image clarity of technetium...
3.5 hours after injection.

Redistribution let you image at any point up to 4 hours after injection. Suitable for routine and acute use.

Introducing Cardiolite Kit for the preparation of Technetium Tc99m Sestamibi.

Clarity that lasts.
Introducing
Cardiololite
Kit for the preparation of Technetium Tc99m Sestamibi

Clarity that lasts

1 hour after injection
3.5 hours after injection

High degree of accuracy in detection of myocardial abnormalities

In blinded studies, CARDIOLITE imaging was 83% to 96% sensitive and 79% to 100% specific in detecting myocardial infarction, when compared with final diagnoses¹

Reassuring safety profile
No known contraindications
Few adverse reactions

Of 2780 patients in worldwide trials, approximately 8% experienced a transient metallic taste following injection. A few cases of transient headache, mild nausea, flushing, and non-itching rash have also been reported. In worldwide commercial experience, one patient showed signs and symptoms consistent with seizure 8 to 10 min after injection. No other adverse reactions specifically attributable to the use of CARDIOLITE have been reported.¹

Reference
¹ Data on file, DuPont File H-23531.

Please see final pages for prescribing information.

© 1991, DuPont Pharma
Brief Summary

Cardiolite®
Kit for the preparation of Technetium Tc99m Sestamibi

**FOR DIAGNOSTIC USE**

DESCRIPTION: Each 5 mL vial contains a sterile, non-pyrogenic, lyophilized mixture of:
- Tetrakis (2-methoxy isobutyl isonitrile) Copper (I) tetrafluoroborate - 1.0 mg
- Sodium Citrate Dilhydrate - 2.6 mg
- L-Cysteine Hydrochloride Monohydrate - 1.0 mg
- Magnesium - 20 mg
- Stannous Chloride, Dilhydrate, minimum (SnCl₂·2H₂O) - 0.025 mg
- Stannous Chloride, Dilhydrate, (SnCl₂·2H₂O) - 0.075 mg
- Tin Chloride (Stannous and Stannic) Dilhydrate, maximum (as SnCl₂·2H₂O) - 0.086 mg

Prior to lyophilization the pH is 5.3 to 5.9. The contents of the vial are lyophilized and stored under nitrogen.

This drug is administered by intravenous injection for diagnostic use after reconstitution with sterile, non-pyrogenic, oxygen-free Sodium Pertechnetate Tc99m Injection. The pH of the reconstituted product is 5.5 (5.0-6.0). No bacteriostatic preservative is present.

The precise structure of the technetium complex is Tc99m[MtBu]₄⁺, where MtBu is 2-methoxy isobutyl isonitrile.

INDICATIONS AND USAGE: CARDIOLITE® Kit for the preparation of Technetium Tc99m Sestamibi, is a myocardial perfusion agent that is useful in distinguishing normal from abnormal myocardium, and in the localization of the abnormality, in patients with suspected myocardial infarction. It is also useful in the evaluation of myocardial function using the first-pass technique.

CONTRAINDICATIONS: None known.

WARNINGS: In studying patients in whom cardiac disease is known or suspected, take care to assure continuous monitoring and treatment in accordance with safe, accepted clinical procedure.

PRECAUTIONS:

GENERAL

The contents of the vial are intended only for use in the preparation of Technetium Tc99m Sestamibi and are not to be administered directly to the patient without first undergoing the preparative procedure (as outlined in the full prescribing information).

Radioactive drugs must be handled with care and appropriate safety measures should be used to minimize radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to the patients consistent with proper patient management.

Contents of the kit before preparation are not radioactive. However, after the Sodium Pertechnetate Tc99m Injection is added, adequate shielding of the final preparation must be maintained.

The components of the kit are sterile and non-pyrogenic. It is essential to follow directions carefully and to adhere to strict aseptic procedures during preparation.

Technetium Tc99m labeling reactions involved depend on maintaining the stannous ion in the reduced state. Hence, Sodium Pertechnetate Tc99m Injection containing oxidants should not be used.

Technetium Tc99m Sestamibi should not be used more than six hours after preparation.

Radiopharmaceuticals should be used only by physicians who are qualified by training and experience in the safe use and handling of radionuclides and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

Carcinogenesis, Mutagenesis, Impairment of Fertility

In comparison with most other diagnostic technetium-labeled radiopharmaceuticals, the radiation dose to the ovaries (1.5 mrad/30 mCi) is high. Minimal exposure (ALARA) is necessary in women of childbearing capability. (See Dosimetry subsection in DOSAGE AND ADMINISTRATION section.)

The active intermediate, Cu(MtBu)₂BF₄⁻, was evaluated for genotoxic potential in a battery of five tests. No genotoxic activity was observed in the Ames, CHO/HIPRT and rat bone marrow micronucleus tests (all in vivo). At cytotoxic concentrations (≥20 µg/mL), an increase in cells with chromosome aberrations was observed in the in vitro human lymphocyte assay. Cu(MtBu)₂BF₄⁻ did not show genotoxic effects in the in vivo mouse micronucleus test at a dose which caused systemic and bone marrow toxicity (9 mg/kg, >600 × maximal human dose).

Pregnancy Category C

Animal reproduction and teratogenicity studies have not been conducted with Technetium Tc99m Sestamibi. It is also not known whether Technetium Tc99m Sestamibi can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. There have been no studies in pregnant women. Technetium Tc99m Sestamibi should be given to a pregnant woman only if clearly needed.

Ideally, examinations using radiopharmaceuticals, especially those elective in nature, of a woman of childbearing capability, should be performed during the first few (approximately 10) days following the onset of menses.

Nursing Mothers

Technetium Tc99m Pertechnetate is excreted in human milk during lactation. It is not known whether Technetium Tc99m Sestamibi is excreted in human milk. Therefore, formula feedings should be substituted for breast feedings.

Pediatric Use

Safety and effectiveness in children below the age of 18 have not been established.

ADVERSE REACTIONS: During clinical trials, approximately 8% of patients experienced a transient metallic or bitter taste immediately after the injection of Technetium Tc99m Sestamibi. A few cases of transient headache, flushing, and non-itching rash have also been attributed to administration of the agent. One patient demonstrated signs and symptoms consistent with seizure, 8 to 10 minutes after administration of the drug. No other adverse reactions specifically attributable to the use of Technetium Tc99m Sestamibi have been reported.

DOSEAGE AND ADMINISTRATION: The suggested dose range for I.V. administration to be employed in the average patient (70 kg) is:

370 to 1110 MBq (10 to 30 mCi)

The dose administered should be the lowest required to provide an adequate study consistent with ALARA principles (See also PRECAUTIONS).

When used in the diagnosis of myocardial infarction, imaging should be completed within four hours after administration (see also CLINICAL PHARMACOLOGY section in full prescribing information).

The patient dose should be measured by a suitable radioactivity calibration system immediately prior to patient administration. Radiochemical purity should be checked prior to patient administration.

Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration whenever solution and container permit.

Store at room temperature (15 to 30°C) before and after reconstitution.

RADIATION DOSEMETRY: Table 4 shows the radiation doses to organs and tissues of an average patient (70 kg) per 1110 MBq (30 mCi) of Technetium Tc99m Sestamibi injected intravenously.

Table 4. Radiation Absorbed Doses from Tc99m Sestamibi

<table>
<thead>
<tr>
<th>Organ</th>
<th>Activity (mCi)</th>
<th>2.0 hour void</th>
<th>4.8 hour void</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breasts</td>
<td>0.2</td>
<td>20</td>
<td>0.2</td>
</tr>
<tr>
<td>Gallbladder Wall</td>
<td>2.0</td>
<td>20</td>
<td>2.0</td>
</tr>
<tr>
<td>Small Intestine</td>
<td>3.0</td>
<td>30</td>
<td>3.0</td>
</tr>
<tr>
<td>Large Intestine</td>
<td>5.4</td>
<td>55.5</td>
<td>5.4</td>
</tr>
<tr>
<td>Heart Wall</td>
<td>0.5</td>
<td>5.1</td>
<td>0.5</td>
</tr>
<tr>
<td>Kidneys</td>
<td>2.0</td>
<td>20.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Liver</td>
<td>0.6</td>
<td>5.8</td>
<td>0.6</td>
</tr>
<tr>
<td>Lungs</td>
<td>0.3</td>
<td>2.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Bone Surfaces</td>
<td>0.7</td>
<td>6.8</td>
<td>0.7</td>
</tr>
<tr>
<td>Thyroid</td>
<td>0.7</td>
<td>7.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Ovaries</td>
<td>1.5</td>
<td>15.5</td>
<td>1.6</td>
</tr>
<tr>
<td>Testes</td>
<td>0.3</td>
<td>3.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Red Marrow</td>
<td>0.5</td>
<td>5.1</td>
<td>0.5</td>
</tr>
<tr>
<td>Urinary Bladder</td>
<td>2.0</td>
<td>20.0</td>
<td>4.2</td>
</tr>
<tr>
<td>Total Body</td>
<td>0.5</td>
<td>4.8</td>
<td>0.5</td>
</tr>
</tbody>
</table>

June, M., July, 1990, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831, (615) 576-3449

HOW SUPPLIED: Du Pont's CARDIOLITE® Kit for the preparation of Technetium Tc99m Sestamibi is supplied as a 5 mL vial in kits of two (2), five (5) and thirty (30) vials, sterile and non-pyrogenic.

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Adverse data from clinical trials to determine precise localization of myocardial infarction of identification of stress-induced ischemia have not been collected.

Positron emission tomographic (PET) instrumentation is recommended for use with rubidium chloride Rb 82 injection.

CONTRAINDICATIONS
None known.

WARNINGS
Caution should be used during infusion as patients with congestive heart failure may experience a transitory increase in circulating volume load. These patients should be observed for several hours following the Rb-82 procedure to detect delayed hemodynamic disturbances.

PRECAUTIONS
General
Data are not available concerning the effect of marked alterations in blood glucose, insulin, or pH (such as is found in diabetes mellitus) on the quality of rubidium chloride Rb 82 (5). Attention is directed to the fact that rubidium is physiologically similar to potassium, and since the transport of potassium is affected by these factors, the possibility exists that rubidium may likewise be affected.

Rubidium chloride Rb 82 injection must be administered only with an appropriate infusion system capable of meeting the performance characteristics previously described. (See INDICATIONS AND USAGE). The drug should be used only by those practitioners with a thorough understanding of the use and performance of the infusion system.

Repeated doses of rubidium chloride Rb 82 injection may lead to an accumulation of the longer lived radioactive contaminants strontium Srl 82 and strontium Sr 85. Since eluate obtained from the generator is intended for intravenous administration, aseptic techniques must be strictly observed in all handling. Only additive-free Sodium Chloride Injection USP should be used to elute the generator. Do not administer eluate from the generator if there is any evidence of foreign matter.

As in the use of any radioactive material, care should be taken to minimize radiation exposure to the patient consistent with proper patient management and to insure minimum radiation exposure to occupational workers.

Radiopharmaceuticals should only be used by physicians who are qualified by training and experience in the safe use and handling of radionuclides and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

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Pregnancy Category C
Animal reproductive studies have not been conducted with rubidium Rb 82. It is also not known whether rubidium Rb 82 can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Rubidium Rb 82 should be given to pregnant women only if the expected benefits to be gained clearly outweigh the potential hazards.

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Pediatric Use
Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
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