

TECHNETIUM 99m

GENERATORS

Technetium Tc 99m Generators
for the Production of
Sodium Pertechnetate Tc 99m



20 Sizes

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- 20 Sizes—from 830mCi to 16,600mCi.
- 3 Calibration Days—Monday, Tuesday and Thursday.
- Open/Closed Valve—to eliminate possibility of leakage during shipment and use.
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Easy-to-Use

- Horizontal elution
- Internal saline reservoir—lets you automatically elute, eliminating the need to store saline vials.
- 5, 10 and 20cc vials allow you maximum flexibility in elution concentration to meet your needs.

Maximum Radiation Protection

The smallest 5 sizes of the Technetium Tc 99m Generator—830, 1660, 2480, 3310 and 4140mCi—are shielded with lead. The remaining fifteen sizes are shielded with depleted uranium internal shielding. Depleted uranium possesses greater density and therefore offers superior shielding properties for our higher activity Generators. Optimum shielding design minimizes radiation to personnel in work areas, providing maximum protection.



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TECHNETIUM Tc 99m GENERATOR for the Production of Sodium Pertechnetate Tc 99m

DESCRIPTION: The Technetium Tc 99m Generator is prepared with fission produced Molybdenum Mo 99 absorbed on alumina in a lead-shielded column and provides a means for obtaining sterile pyrogen-free solutions of Sodium Pertechnetate Tc 99m in sodium chloride injection. The eluate should be crystal clear. With a pH of 4.5-7.5, hydrochloric acid and/or sodium hydroxide may have been used for pH adjustment. Over the life of the generator, an elution will contain a yield of 80% to 100% of the theoretical amount of Technetium Tc 99m available from the Molybdenum Mo 99 on the generator column.

Each eluate of the generator should not contain more than 0.15 microcurie of the Molybdenum Mo 99 per millicurie Technetium Tc 99m per administered dose at the time of administration, and not more than 10 micrograms of aluminum per milliliter of the generator eluate, both of which must be determined by the user before administration.

Since the eluate does not contain an antimicrobial agent, it should not be used after twelve hours from the time of generator elution.

INDICATIONS AND USAGE: Sodium Pertechnetate Tc 99m is used IN ADULTS as an agent for: brain imaging including cerebral radionuclide angiography; thyroid imaging; salivary gland imaging; placenta localization; blood pool imaging including radionuclide angiography; and urinary bladder imaging (direct isotopic cystography) for detection of vesico-ureteral reflux.

Sodium Pertechnetate Tc 99m is used IN CHILDREN as an agent for: brain imaging including cerebral radionuclide angiography; thyroid imaging; blood pool imaging including radionuclide angiography; and urinary bladder imaging (direct isotopic cystography) for the detection of vesico-ureteral reflux.

CONTRAINDICATIONS: None known.

WARNINGS: Radiation risks associated with the use of Sodium Pertechnetate Tc 99m are greater in children than in adults. In general, the younger the child the greater the risk owing to greater absorbed radiation doses and longer life expectancy. These greater risks should be taken firmly into account in all benefit-risk assessments involving children.

PRECAUTIONS: 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.

Since the eluate does not contain an antimicrobial agent, it should not be used after twelve hours from the time of generator elution.

Carcinogenesis, Mutagenesis, Impairment of Fertility
No long-term animal studies have been performed to evaluate carcinogenic potential or whether Technetium Tc 99m may affect fertility in males or females.

Pregnancy Category C

Animal reproductive studies have not been conducted with Technetium Tc 99m. It is also not known whether Technetium Tc 99m can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Technetium Tc 99m 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 effective 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 Tc 99m is excreted in human milk during lactation, and therefore formula feedings should be substituted for breast feedings.

Pediatric Use

See **INDICATIONS AND USAGE, DOSAGE AND ADMINISTRATION.** See also description of additional risk under **WARNINGS.**

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.

The generator should not be used after 16 days from the date and time of calibration.

At time of administration, the solution should be crystal clear.

ADVERSE REACTIONS: Allergic reactions including anaphylaxis have been reported infrequently following the administration of Sodium Pertechnetate Tc 99m.

NOW SUPPLIED: Sodium Pertechnetate Tc 99m is supplied as a Molybdenum Mo 99/Technetium Tc 99m generator in sizes from 830 millicuries up to 16,600 millicuries (in approximately 830 millicurie increments) of Molybdenum Mo 99 as of 10:00 P.M. Eastern Time of the day of calibration. The **TECHNETIUM Tc 99m GENERATOR** consists of:

- 1) sterile generator, 2) Sodium Chloride injection source, 3) 10 cc sterile evacuated vials, 4) sterile needles, 5) elution vial shield* 6) finished drug labels. Elution vials in 5 cc and 20 cc sizes are available upon request.

*Initial order only.

The **TECHNETIUM Tc 99m GENERATOR** should not be used after sixteen (16) days from the date and time of calibration.

For multidose use, the eluate should be used within 12 hours of the generator elution time. If the eluate is used to reconstitute a kit, the radiolabeled kit should not be used after 12 hours from the time of generator elution or 6 hours after reconstitution of the kit, whichever is earlier.

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APRIL 1985

MORE FOR LESS!



RADIOISOTOPE RECORD

Date: Jul 16, 1984
 Time: 8:11 A.M.
 Isotope: Tc-99m
 Sample # 1
 Activity: 798. mCi
 Volume: 20.0 ml
 Conc: 39.9 mCi/ml
 99Mo: 27.8 uCi
 Mo/Tc: .034 uCi/mCi

RADIOISOTOPE RECORD

Date: Jul 16, 1984
 Time: 8:12 A.M.
 Isotope: Tc-99m
 Sample # 1
 Dose: 5.00 mCi

Isotope Decay Chart

8:30 A.M.
 38.5 mCi/ml
 .13 ml
 Mo: .036 uCi/mCi

9:00 A.M.
 36.3 mCi/ml
 .14 ml
 Mo: .038 uCi/mCi

9:30 A.M.
 34.3 mCi/ml
 .15 ml
 Mo: .040 uCi/mCi

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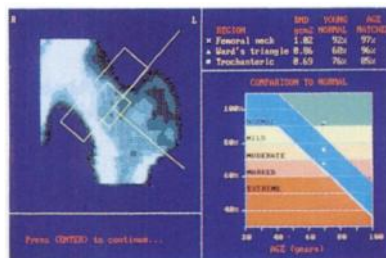
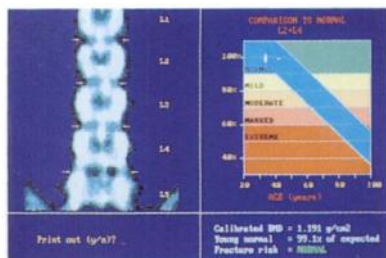


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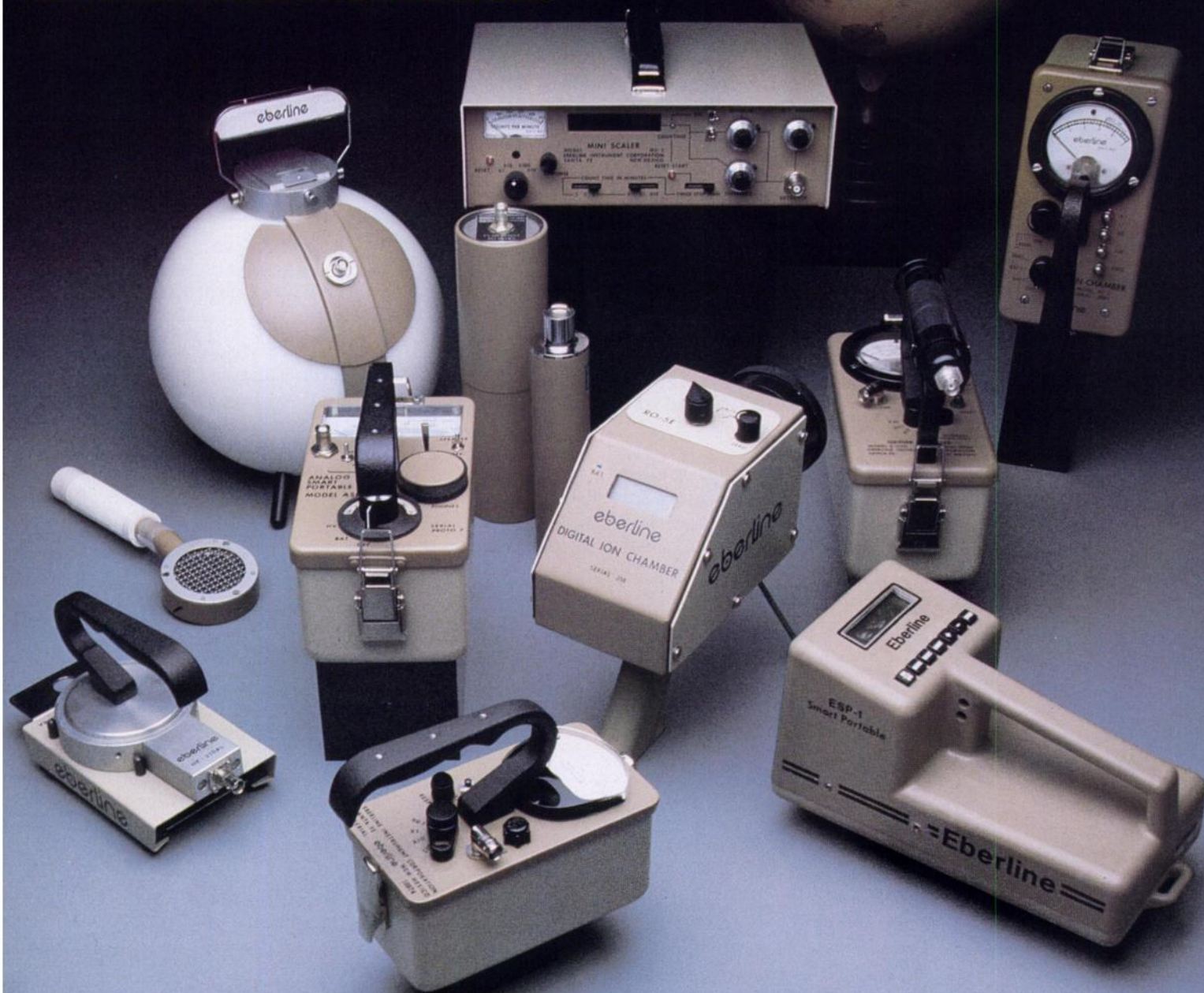
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PORTABLE TELERADIOLOGY



Colorado Video's Model 290R Teleradiology receiver makes an excellent companion for on-the-go imaging specialists. It is designed to receive diagnostic-quality still video images of X-rays, CT, nuclear and ultrasound scans for prompt, preliminary diagnoses. This lightweight instrument is contained in an attractive leather attache case.

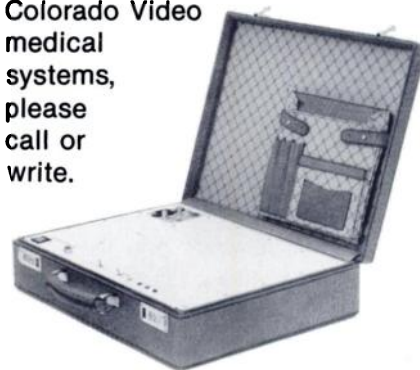
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The preeminent journal in the radiation sciences, *Radiation Research* publishes original articles on the physical, chemical, and biological effects of radiation and related subjects in the areas of physics, chemistry, biology, and medicine.

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Circle Reader Service No. 6

Myoscint may enhance diagnosis, assessment of myocardial infarction

Imaging techniques currently used to evaluate myocardial infarction (MI) have a major drawback: They do not permit differentiation between myocardial necrosis and ischemia in the early hours following infarction.

Thallium-201, for example, concentrates only in normal myocardial cells. The bone scanning agent technetium-99m pyrophosphate is taken up by necrotic, as well as by some reversibly damaged cells, and also by overlapping ribs.

These agents are of limited use for differentiating between irreversible necrosis and severe ischemia. Yet the ability to make that distinction—and make it quickly—could significantly improve management of cardiac patients.

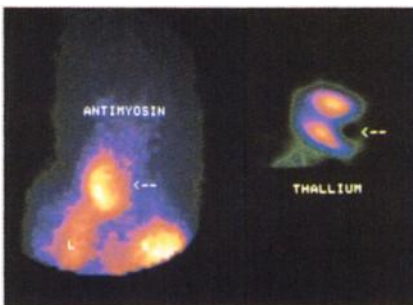
Myoscint,TM an imaging agent based on a monoclonal antibody specific to cardiac myosin, may fill this void in cardiac imaging technology.

Because this MAb binds solely to the intracellular myosin that is exposed on cell death, Myoscint concentrates only in necrotic cells. It therefore permits precise localization of unsalvageable tissue.

Improved MI diagnosis may result

Myoscint (antimyosin) may permit MI detection and localization in situations that may otherwise be difficult to interpret.

A recent study demonstrates the potential utility of Myoscint imaging. A 73-year-old female patient with unstable angina pectoris underwent coronary angiography which re-



vealed an 80% diameter stenosis of the left anterior descending coronary artery and a 35% lesion of the left circumflex coronary artery. Because of continued symptoms, percutaneous transluminal coronary angioplasty (PTCA) was performed and resulted in successful revascularization. Twenty-four hours later, she developed severe chest pain and electrocardiographic changes consistent with an acute myocardial infarction. The subsequent clinical course was uncomplicated, and the creatine kinase level peaked at 840 IU, with a positive MB fraction.

Indium-111 labeled Myoscint was injected without incident approximately 48 hours after onset of chest pain. Serial images were obtained thereafter at 17 and 41 hours post anti-myosin injection. Initial planar imaging (shown in the accompanying figure in the left anterior oblique position) demonstrated a large area of intense radiotracer uptake in the antero-septal region. Subsequent tomographic images confirmed the extensive area of antero-septal myocardial necrosis. Tomographic thallium-201 imaging (shown in the

accompanying figure in the vertical long axis orientation) was performed several days later and demonstrated a moderate-sized perfusion defect, corresponding in location to the area of necrosis on the indium-111 Myoscint image. Pre-discharge left ventricular ejection fraction obtained by radionuclide angiocardigraphy was 38%.

This patient example demonstrates the ability of indium-111 labeled Myoscint to document and localize myocardial necrosis in a patient with unstable ischemic heart disease. The Myoscint study clearly documented an extensive area of irreversible damage and helped differentiate scar from transient myocardial ischemia.

Ongoing Myoscint research

Myoscint is being evaluated extensively in conjunction with traditional imaging techniques, including early thallium-201 imaging, contrast ventriculography, and gated radionuclide angiocardigraphy (wall motion studies). This research continues to verify Myoscint's efficacy for identifying zones of acute myocardial necrosis.

Available for investigational use

Myoscint is now available for investigational use only. If you would like more information on this product, or other biotechnological products under development at Centocor, please call us, toll free.

For Investigational Use Only. Not for use in diagnostic procedures.

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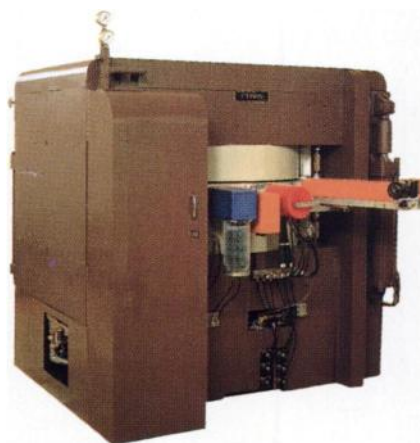
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to additional radiochemistry systems

Modification of the computer program in the Universal Controller will easily open the way for use with any new radiochemistry systems.

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An extensive display of scientific posters and exhibits will augment the presentations.

CONTINUING EDUCATION COURSES

Refresher and state-of-the-art continuing education courses in chemistry, physics, quality assurance, cardiovascular nuclear medicine, PET, SPECT, and NMR will supply up-to-the-minute approaches and procedures for all clinical settings.

TECHNOLOGIST PROGRAM

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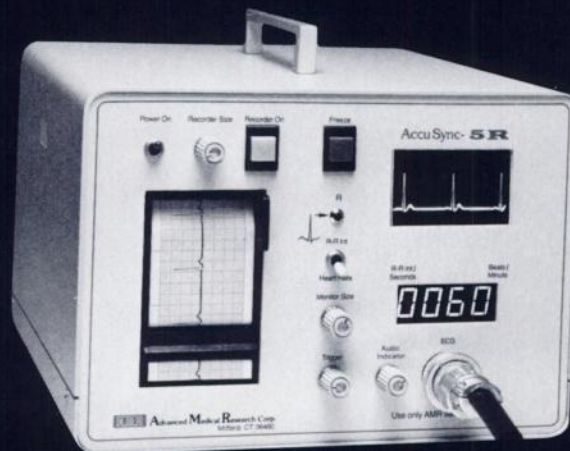
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Educate your patients with SNM Patient Information Pamphlets

A Patient's Guide to Nuclear Medicine

Well illustrated, this 16-page pamphlet explains what nuclear medicine is, how the procedures are performed, and how they can help in the early detection of disease.

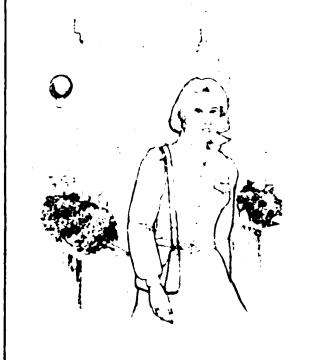
Divided into 3 sections, the guide opens with a general overview of nuclear medicine. A question-and-answer section follows, addressing such topics as safety, the benefits of nuclear medicine procedures, pre- and post-instructions, and testing of pregnant women and children.

The third section explains some of the more commonly performed procedures such as bone, liver, lung, heart, and thyroid uptake scans.

**16 pp; 5½ x 8½; in 2 colors;
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Guidelines for Patients Receiving Radioiodine Treatment



Guidelines for Patients Receiving Radioiodine Treatment

Prepared in collaboration with the U.S. Nuclear Regulatory Commission, this 8-page pamphlet answers patients' questions about home care after receiving radioiodine treatment for thyroid conditions.

Easy-to-read language outlines important precautions patients can follow to help reduce radiation exposure to others. It also contains a checklist that physicians can review with their patients to determine which guidelines are appropriate for them and how they should be followed.

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NUCLEAR MEDICINE SPECIALIST, also Board certified or eligible in diagnostic radiology. Position entails a major role in R&D of nuclear medicine techniques and clinical services in the associated VA Medical Center, as well as research and teaching in radiology and nuclear medicine at the University of Iowa. The VAMC also provides significant opportunities for research. Interested applicants should send a CV to: Peter T. Kirchner, MD, Director, Division of Nuclear Medicine, University of Iowa, College of Medicine, Department of Radiology, 7006 RCP, Iowa City, IA 52242. The University of Iowa is an Affirmative Action/Equal Opportunity Employer.

IMMEDIATE PHYSICIAN OPPORTUNITY to join rapidly growing nuclear medicine/diagnostic ultrasound group in South Florida. Special emphasis on cardiovascular nuclear medicine and echocardiography. Send CV to: Drs. Gottlieb & Block, 1150 N.W. 14 St., Suite #1, Miami, FL 33136; (305)324-0424. EOE.

AN ACADEMIC POSITION, either as an instructor or assistant professor, is available starting July 1, 1986. Experience in teaching, research and patient care is desirable for the position. Please send CV to: C. Park, MD, Director, Nuclear Medicine, Thomas Jefferson University Hospital, 11th & Walnut Sts., Phila., PA 19107. TJUH is an Equal Opportunity/Affirmative Action Employer.

NUCLEAR MEDICINE PHYSICIAN. The Princess Margaret Hospital/Ontario Cancer Institute, Toronto, Ontario, Canada. A position is available for a full time physician in the nuclear medicine department of this major oncologic treatment center affiliated with the University of Toronto. The department is equipped with three gamma cameras; one a Technicare tomographic camera; two dedicated computers, and supports a full-time radiopharmacist. Approximately 4,500 studies are carried out annually. Diverse approaches to oncologic imaging are under investigation. The applicant should be eligible for or licensed by the College of Physicians and Surgeons of Ontario, should be certified or eligible for certification in nuclear medicine by the Royal College of

Physicians and Surgeons of Canada, and should have demonstrated skills in research and an interest in teaching. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens or permanent residents. Interested applicants should send their resume and the names of three referees to: Dr. G.N. Ege, Department of Nuclear Medicine, The Princess Margaret Hospital, 500 Sherbourne Street, Toronto, Ontario M4X 1K9, Canada. EOE.

DIRECTOR OF LABORATORIES. Experienced pathologist needed to head new lab in 200-bed community hospital. BC/BE in nuclear medicine, AP and CP essential, plus a strong belief in the value of providing quality diagnostic skills at the local level. This outstanding clinical and financial opportunity in Klamath country is matched by unlimited outdoor recreation in a sunny, mild climate. The beauty of the Cascade Range and its clean streams, lakes, and forests attracts those who appreciate wildlife and waterfowl, as well as a healthy place to live and raise a family. For consideration, send CV or call: Merle West Medical Center, Administration, Attn: Mr. Russo, 2865 Daggett St., Klamath Falls, OR 97601; (503)883-6157. EOE.

DIRECTOR, NUCLEAR MEDICINE. The University of Kentucky Medical School, invites applications and nomination for professor and director of nuclear medicine division, department of radiation medicine in a combined University-VAH program. We seek an individual with academic track faculty background to direct and provide leadership to a medical school, division of nuclear medicine for teaching, research, clinical development, and care programs. To qualify for appointment, candidate should have recognized accomplishments in development studies, research, radionuclide studies, bibliography to support the application, desire to direct a medical school department, teaching, and administrative experience. VAH appointment experience desirable. MD degree and Board certification. Salary is based on academic rank and practice plan. Reply to: Yosh Maruyama, MD, Chairman, Search Committee, Department of Radiation Medicine, University of Kentucky Medical Center, Room C-15, 800 Rose St., Lexington, KY 40536. The University of Kentucky is an Equal Opportunity Employer.

THE COLLEGE OF PHYSICIANS AND Surgeons of Columbia University is searching for Nuclear Medicine Fellows who will have the academic rank of instructor. Positions available July 1987. Responsibilities include patient care, teaching and supervising residents. Requirements include 1 to 2 years of specialized training in either radiology, internal medicine, or any other specialty area. NYS medical license required; narcotics license desirable. Please send resume to: Philip O. Alderson, MD, Division of Nuclear Medicine, Columbia-Presbyterian Medical Center, 622 West 168th St., New York, NY 10032. Columbia University is an Affirmative Action/Equal Opportunity Employer.

Scientist

RESEARCH ASSOCIATE. Will conduct research involving the production, purification and labeling of monoclonal antibodies. Requires an MD or PhD in medical-related science; working knowledge of radioimmunoassay, radioisotopes, biochemical techniques, tissue culture; understanding of clinical diagnosis, and treatment of trophoblastic disease. Must also have a strong background in statistical design to be able to correlate the experimental data to patient case history and to comment on the data. Some of the research will involve the use of small laboratory animals. This is a 40-hr per week position with an annual salary of \$17,892. Send resume to: Alabama State Employment Service, 1816 8th Ave., North, Birmingham, AL 35203; Attn: Mr. E.R. Robinson. EOE.

UNIVERSITY OF WISCONSIN-MADISON, DEPARTMENT OF MEDICAL PHYSICS. The Department of Medical Physics of the University of Wisconsin-Madison is searching for a radiochemist to head up a research program in the field of radiopharmaceutical chemistry, aimed at developing imaging agents for positron emission tomography

(PET). The position would be at the assistant or tenured associate professor level. Teaching and graduate training responsibilities would be consistent with being a full member of the Medical Physics Department with its ongoing PhD program. Resources include a newly acquired 11 MeV Cyclotron, a clinical PET scanning facility, and a fully supported radiochemistry lab. A doctorate in chemistry with several years of PET experience is preferred. Send CV and a brief statement of research interest to: R.J. Nickles, Medical Physics Dept., 1530 Medical Science Center, 1300 University Ave., Madison, WI 53706; (608)262-2170. The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer.

Resident

NUCLEAR MEDICINE. Residency and fellowship positions for 1987 and later years. Long-standing (11 years) program that utilizes two tracks and consortium hospitals for one of the largest clinical experiences (access to over 2,200 beds). Faculty of 25 is responsible for all aspects of training including imaging, radiopharmaceutical therapy, and in vitro procedures. Active research program with national-level support. Contact: Dept. of Nuclear Medicine, University of Connecticut Health Center, Farmington, CT 06032; (203)674-3120. An Affirmative Action/Equal Opportunity Employer. M/W/H.

Technologist

NUCLEAR CARDIOLOGY TECHNOLOGIST. Very active research-oriented nuclear cardiology laboratory in 850-bed teaching hospital has opening for a registered staff nuclear cardiology technologist. Strong interest and experience in research and computer processing desired. Send CV and resume to: Frans J. Wackers, MD, Yale University, Cardiovascular Nuclear Imaging Laboratory, TE-2, 333 Cedar St., New Haven, CT 06510. EOE.

Positions Wanted

Physician

NUCLEAR MEDICINE PHYSICIAN. Board certified in nuclear medicine and internal medicine. Desires to relocate in full-time nuclear medicine practice; private group or institution. Experienced all aspects of nuclear medicine practice including nuclear cardiology and stress testing. Contact: M.C. Williams, MD, 40 Pine Crest Dr., Indiana, PA 15701.

NUCLEAR MEDICINE PHYSICIAN, MD, BC/ABNM, clinical and research experience, seeks full-time NM position for July, 1986. Reply: Box 400, Society of Nuclear Medicine, 136 Madison Ave., New York, NY 10016.

NUCLEAR MEDICINE PATHOLOGIST. Well-trained in large medical center in NYC. Skilled in nuclear cardiology, SPECT, RIA. Available July 1, 1986. Reply to Box 401, Society of Nuclear Medicine, 136 Madison Ave., New York, NY 10016.

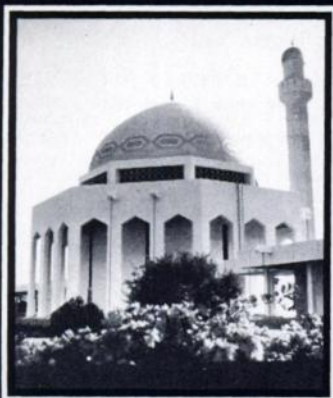
Seminar

BONE MINERAL ANALYSIS WORKSHOP AND TUTORIAL. April 26, 1985. Nuclear Medicine Consultants, 350 Parnassus, San Francisco, CA. The course is intended for licensed physicians (nuclear medicine and radiology) and licensed NM or radiology technologists and provides hands-on experience with Lunar single and dual energy absorptiometers, procedure protocols, interpretation guidelines, and reference standardization. Contact: Kathleen Meier, Nuclear Medicine Consultants, 350 Parnassus, Suite 908, San Francisco, CA 94117; (415)664-7400.

For Sale

LAB FOR SALE. Nuclear medicine diagnostic lab. For sale in lower Westchester County, New Rochelle, NY. Equipped and licensed for nuclear cardiology. Percentage participations, or entire facility. Call: (914)633-3309 or (914)633-3092.

King Fahad Hospital



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BY ITSELF.

In anticipation of a forthcoming expansion from its present 300 beds, the King Fahad Hospital, Saudi Arabian National Guard, in Riyadh, Saudi Arabia, one of the foremost hospitals in the Middle East is seeking **NUCLEAR MEDICINE TECHNOLOGISTS**. This position requires completion of a formal radiology program plus additional training in nuclear medicine, registration, and two years experience.

The Saudi Arabian National Guard is now offering **ONE YEAR RENEWABLE CONTRACTS** with a new and competitive salary and benefits package. Lengthy paid vacations, significant tax advantages and contract completion bonuses make this both an exciting and professionally rewarding adventure.

To learn more about the King Fahad Hospital, Saudi Arabian National Guard forward your resumé to: Dept. NMT1, Hospital Corporation of Canada Limited, Two Robert Speck Parkway, Suite 1410, Mississauga, Ontario L4Z 1H8, Canada.

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NUCLEAR MEDICINE PHYSICIAN

The general hospital, St. John's, Newfoundland is recruiting a physician to direct the Department of Nuclear Medicine. The hospital is a referral center for the province and is located within the health sciences center which also houses the Memorial University faculty of medicine.

In addition to directing the department, the appointee will be expected to participate in under graduate and post graduate teaching. Research activities will be encouraged, an appropriate joint appointment to the faculty of medicine will be offered.

Candidates should possess (or be eligible for) appropriate certification by the Royal College of Physicians and Surgeons of Canada.

All qualified individuals are encouraged to apply but in accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.

Enquiries, along with a curriculum vitae and the names of three referees, should be forwarded to:

Dr. G. B. Adams

Chairman, Nuclear Medicine Search Committee
The General Hospital Health Sciences Centre
Prince Philip Drive, St. John's, Newfoundland,
Canada A1B 3V6

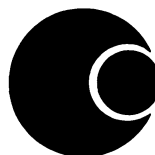
Director Radiochemistry Research Group

The world's leading independent monoclonal health-care products company is seeking innovative and experienced Ph.D. chemist to assume **senior position** assembling, organizing, and directing radiochemistry research team. Major scientific thrust is to develop optimal techniques to label monoclonal antibodies and other biological compounds for diagnostic imaging and radioimmunotherapy. Extensive state-of-the-art facilities available. Ample opportunity for collaboration with academic research centers and significant professional growth. Expertise in technetium metallo-chemistry and/or inorganic ligand synthesis desirable. Position available immediately.

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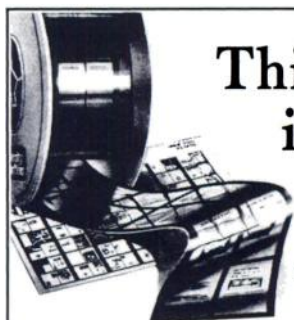
NUCLEAR MEDICINE COMPUTER TECHNOLOGIST

Crawford W. Long Memorial Hospital of Emory University, a 520-bed teaching hospital, seeks a Registered Nuclear Medicine Technologist with experience in computer applications to fill a newly created position in the Nuclear Cardiology Department. Applicants should have 3+ years of nuclear medicine and/or 2+ years of nuclear computer applications. Programming experience preferred. For more information contact Personnel collect at (404) 892-4411, ext. 2532, Monday-Friday, 8am-4pm, or send resume to:



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Nuclear Medicine Technologist

Nuclear Medicine Technologist: Bachelor's degree in nuclear medicine technology, biological or physical science required. Salary commensurate with education and professional experience. Certified (NMTCB) and/or registered (ARRT) in nuclear medicine preferred. Must have expertise in imaging, scanning and other in vivo techniques. Must be competent in in vitro tests including radioimmunoassays. Familiar with usual computer manipulations used for static and dynamic studies. For further information, contact Mrs. Fischer, Personnel Service, (516)261-4400, ext. 2293 or write:

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Walton W. Shreeve, MD, PhD
Chief, Nuclear Medicine Service (115)
VA Medical Center
Northport, NY 11768
(516) 261-4400 ext. 2773/2774

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It sets new performance standards because it is "truly dedicated" to thyroid uptake activity studies.

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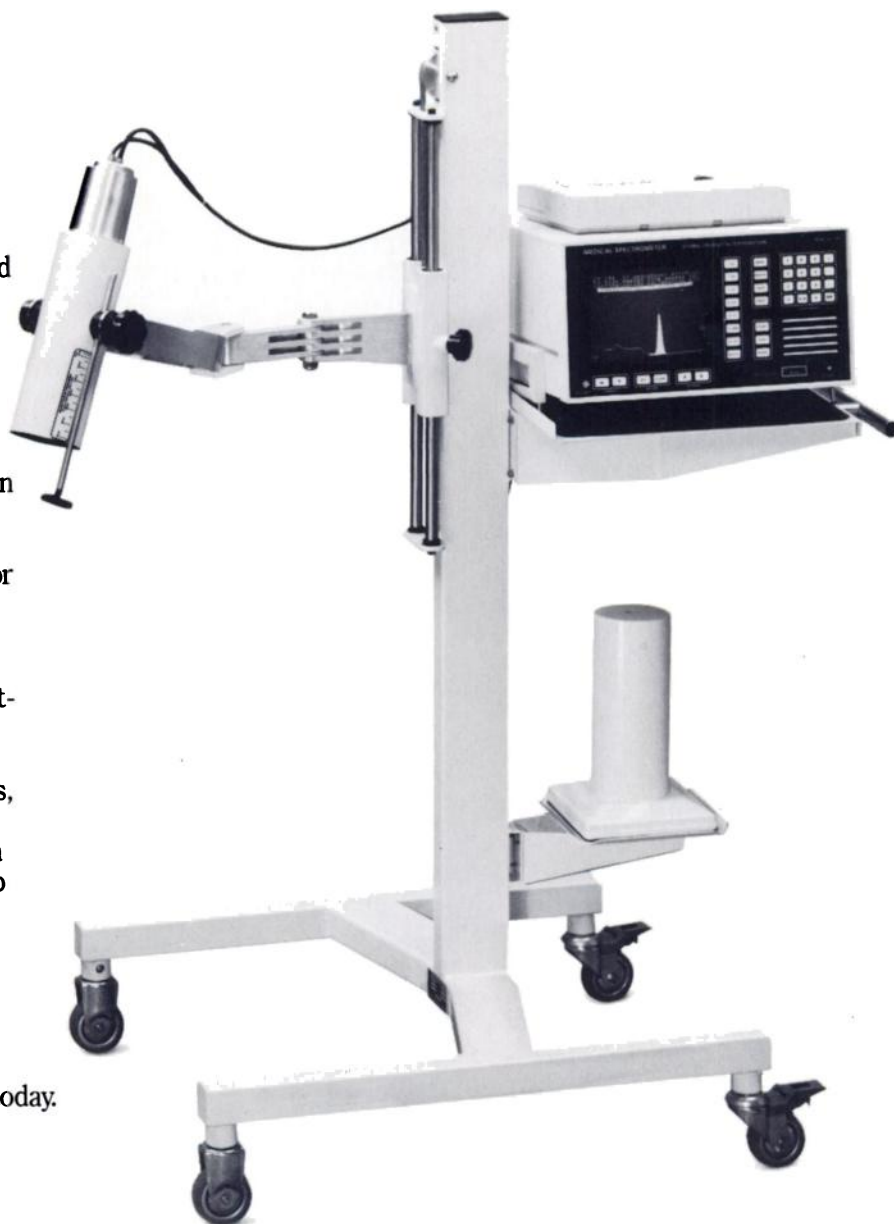
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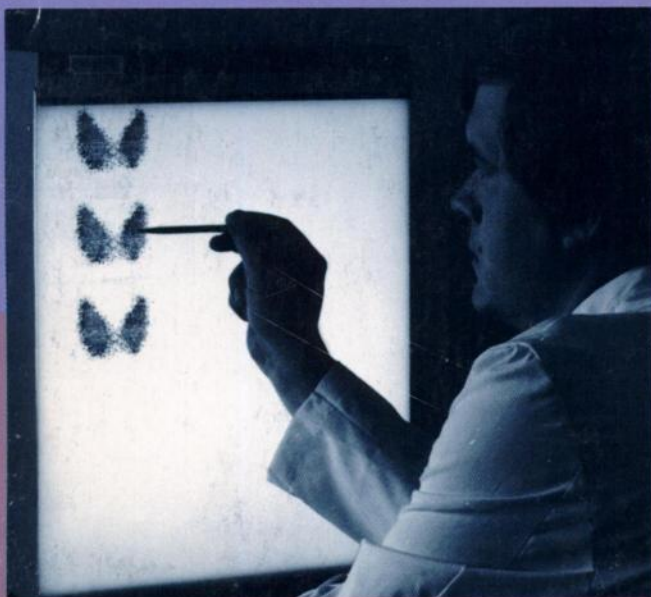
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2. Radioiodine clearly demonstrates the "cold" nonfunctioning nodules that may be associated with malignant thyroid tumors. Such nonfunctioning nodules have appeared "hot" or "cold" on images obtained with Tc99m, necessitating a confirmatory radioiodine scan.^{2,3}
3. Radioiodine thyroid imaging is preferred to Tc99m for investigation of patients with possible retrosternal thyroid tissue or in those patients whose images are unsatisfactory with Tc99m due to poor radionuclide concentration.⁴

¹Steinbach, H.L., Kundy, D., Moss M., et al: A comparison of three agents in thyroid uptake and scintigraphy. Scientific Exhibit, Society of Nuclear Medicine, Philadelphia, June 16-20, 1975.

²Arnold, J., et al: ^{99m}Tc-Perchnetate Thyroid Scintigraphy in Patients Predisposed to Thyroid Neoplasms by Prior Radiotherapy to the Head and Neck. *Radiology* 115:653-657, June 1975.

³Favus, M.J., et al: Thyroid Cancer Occurring as a Late Consequence of Head and Neck Irradiation. *New England Journal of Medicine* 294: 1019-1025, May 6, 1976.

⁴Arnold, J.E., Plinsky, S.: Comparison of ^{99m}Tc and ¹²³I for Thyroid Imaging. *J Nucl. Med.*, 17:261, 1976.

For complete prescribing information consult package insert, a brief summary of which follows:

SODIUM IODIDE I 123 CAPSULES AND SOLUTION FOR ORAL ADMINISTRATION

DESCRIPTION: Sodium iodide I 123 for diagnostic use is supplied as capsules and in vials as an aqueous solution for oral administration. At calibration time, each capsule has an activity of 100 microcuries and each vial contains solution with a total specific concentration of two millicuries per ml.

INDICATIONS: Sodium iodide I 123 is indicated for use in the diagnosis of thyroid function and imaging.

CONTRAINDICATIONS: None known.

WARNINGS: This radiopharmaceutical should not be administered to children or to patients who are pregnant or to nursing mothers unless the information to be gained outweighs the potential hazards. Ideally, examinations using radiopharmaceuticals, especially those elective in nature, in women of child-bearing capability should be performed during the first few (approximately 10) days following the onset of menses. However, when studies of thyroid function are clinically indicated for members of these special population groups, use of I 123 would be preferable to the use of I 131 in order to minimize radiation dosage.

Adequate reproduction studies have not been performed in animals to determine whether this drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. Sodium iodide I 123 should be used in pregnant women only when clearly needed.

PRECAUTIONS: Sodium iodide I 123, as well as other radioactive drugs, must be handled with care. Appropriate safety measures should be used to minimize radiation exposure to clinical personnel. Care should also be taken to minimize radiation exposure to the patient consistent with proper patient management. The prescribed sodium iodide I 123 dose should be admin-

istered as soon as practicable in order to minimize the fraction of radiation exposure due to relative increase of radionuclides contaminants with time. The uptake of I 123 may be decreased by recent administration of iodinated contrast materials, by intake of stable iodine in any form, or by thyroid, anti-thyroid, and certain other drugs. Accordingly, the patient should be questioned carefully regarding diet, previous medication, and procedures involving radiographic contrast media.

ADVERSE REACTIONS: There were nine adverse reactions reported in a series of 1,393 administrations. None of these were attributed to I 123. Five adverse reactions, consisting of gastric upset and vomiting, were attributed to a filler in the capsule. Two cases of headache and one case of nausea and weakness were attributed to the fasting state. One case of garlic odor on the breath was presumed to be attributable to the presence of tellurium.

DOSAGE AND ADMINISTRATION: The recommended oral dose range for diagnostic studies of thyroid function in the average adult patient (70 kg) is from 100 to 400 microcuries. The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration. Concentration of I 123 in the thyroid gland should be measured in accordance with standardized procedures.

SPECIAL CONSIDERATION: 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.

HOW SUPPLIED: Sodium iodide I 123 for oral administration is supplied in aqueous solution in glass vials of 1mCi and in capsules of 100 μ Ci.