The Superior Nuclide For Thyroid Studies

Sodium Iodide I 123

I 123...
A Superior Thyroid Agent

Sodium Iodide I 123 is superior to I 131 because of its low radiation dose to the patient, its short half-life of 13.2 hours, and its imaging energy of 159 KeV.

Sodium Iodide I 123 is superior to Tc99m because it is trapped and organified by the thyroid gland and, therefore, will image the "cold," non-functioning nodule that may appear "hot" or "cold" with Tc99m.[1,2]

For a Consistent Quality Image.....Sodium Iodide I 123

medi+physics™

5801 Christie Avenue, Emeryville, CA 94608
For More Information, Please Call (415) 658-2184
Inside California Toll Free (800) 772-2446 • Outside California Toll Free (800) 227-0483

[1]Steinbach, HL, 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.

[2]"Information for Physicians—Irradiation-Related Thyroid Cancer" prepared by the Division of Cancer Control and Rehabilitation National Cancer Institute, DHEW Publication No. (NIH) 77-1120, p.13.

For complete prescribing information consult package insert, a 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 childbearing 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 administered as soon as practicable in order to minimize the fraction of radiation exposure due to relative increase of radionuclidic 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, antithyroid, 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 μCi.

NEW THE XenaCon FROM RADX

A spirometer xenon rebreathing device for less than $2500!!! Impossible? Almost, but we did it! We used the technology and know-how gained from 5 years of experience with the Ventil-Con and created the first low-cost spirometer xenon unit.

XenaCon I basic spirometer unit

XenaCon II spirometer unit with built-in Xenon Trap

XenaCon III spirometer unit with Xenon Trap and Xenon Trap Exhaust Port Monitor detector/alarm system

PERTINENT SPECIFICATIONS

Mobility: all units are highly mobile, making bedside studies practical

Unit dead space: less than 25 ml in both washout and rebreathing

Spirometer volume: 0-10 liters

Breathing resistance: less than 0.1 inch of water to normal breathing

Shielding: spirometer area — ⅛ inch lead trap area — ¼ inch lead

Oxygen replenishment: manual pushbutton valve

Xenon injection port: located in head valve for either direct bolus or homogeneous mixture patient administration

Bacteriological filter: inline autoclavable bacteriological filter

CO_2 trap: high capacity, easy access CO_2 trap

Xenon trap cartridge pack: New vertical activated Charcoal cartridge pack eliminates channeling

For more information, call or write Radx today.

RADX

P.O. Box 19164 • Houston, Texas 77024
713-468-9628

The new NEN generator

We kept it simple and convenient.

Just peel off the top and the new NEN generator is ready for the same top-handling charge-and-elute procedure as current NEN generators.

We kept it dependable.

Each generator is checked for sterility, apparent Mo 99 breakthrough, alumina breakthrough, and functionality. Pyrogenicity is checked by pooled sample — just like current NEN generators.

We even kept the same radiation profile... we just made it 10 lbs lighter.

That means about a half ton less total lead you'll have to move around each year — without sacrificing any of the radiation protection delivered by current NEN generators.

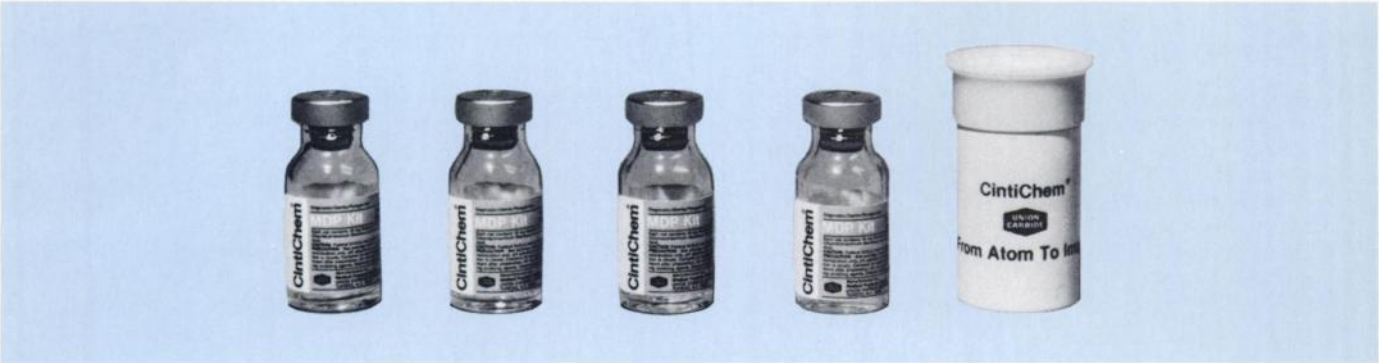
For additional information, contact your NEN representative.

NEN® New England Nuclear
Medical Diagnostics Division
601 Treble Cove Road
North Billerica, MA 01862

Call Toll-Free: 800-225-1572
Telex: 94-0996
In Massachusetts and International:
617-482-9595

THE STABLE SOLUTION TO YOUR BONE IMAGING NEEDS

NOW AVAILABLE FOR ROUTINE USE



- **One Year Shelf Life**
- **No Refrigeration Required**
- **Full 6 Hour Use After Preparation**
- **Contains Ascorbic Acid as an Antioxidant**

For ordering, customer service, and technical information, call toll-free 800-431-1146 (in NYS call 800-942-1986).

CintiChem® MDP KIT

Technetium Tc 99m Medronate Kit

BRIEF SUMMARY OF PRESCRIBING INFORMATION

indications and usage

Technetium Tc 99m Medronate may be used as a bone imaging agent to delineate areas of altered osteogenesis.

contraindications

None known.

warnings

This class of compound is known to complex cations such as calcium. Particular caution should be used with patients who have, or who may be predisposed to, hypocalcemia (i.e., alkalosis).

This radiopharmaceutical drug product should not be administered to children, to pregnant women, or to nursing mothers, unless the expected benefit to be gained outweighs the potential risk.

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.

precautions

general

Technetium Tc 99m Medronate as well as other 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.

To minimize radiation dose to the bladder, the patient should be encouraged to void when the examination is completed and as often thereafter as possible for the next 4-6 hours.

This preparation contains no bacteriostatic preservative.

Technetium Tc 99m Medronate should be formulated within six (6) hours prior to clinical use.

pregnancy category C

Adequate reproductive 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. Technetium Tc 99m Medronate should be used in pregnant women only when clearly needed.

nursing mothers

It is not known whether this drug is excreted in human milk. As a general rule nursing should not be undertaken while a patient is on the drug since many drugs are excreted in human milk.

pediatric use

Safety and effectiveness in children have not been established .

adverse reactions

No adverse reactions specifically attributable to the use of Technetium Tc 99m Medronate have been reported.

how supplied

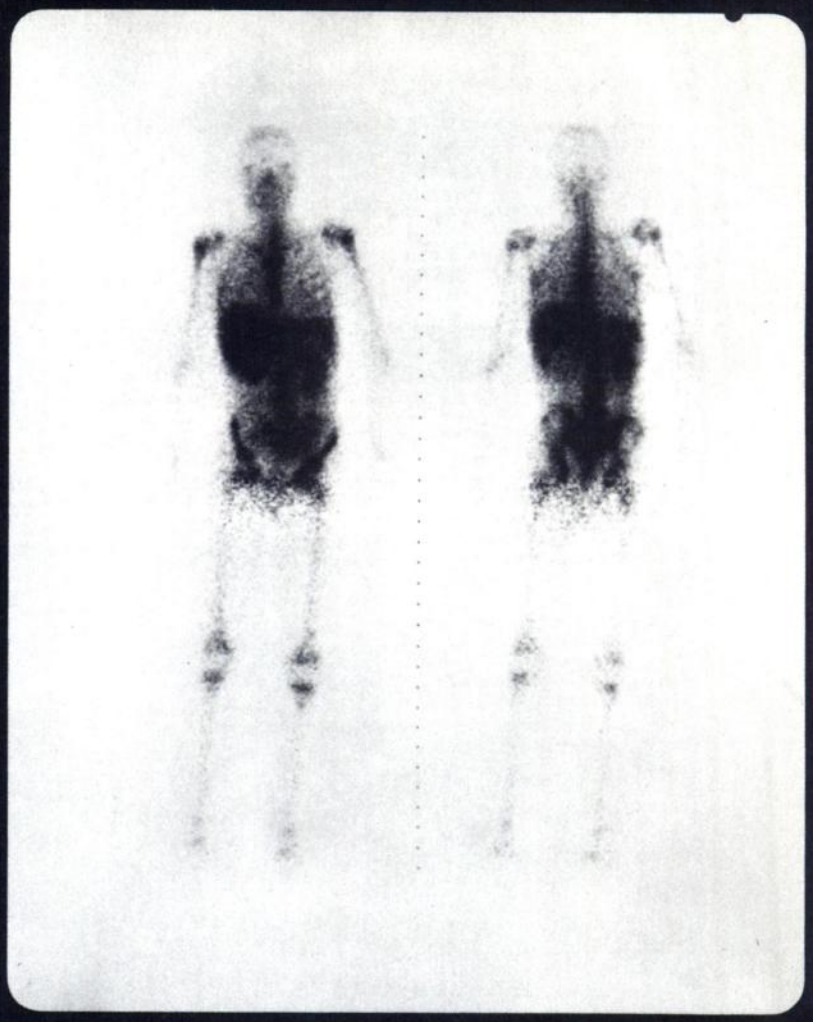
Union Carbide's Technetium Tc 99m Medronate Kit is supplied as a sterile, pyrogen-free kit containing 5 vials.

Each 10 ml vial contains 10 mg medronic acid, 0.17 mg (minimum) stannous chloride (maximum stannous and stannic chloride 0.29 mg), and 2 mg ascorbic acid. The pH has been adjusted to 4-8 with either HCl or NaOH prior to lyophilization. Following lyophilization, the vials are sealed under a nitrogen atmosphere.

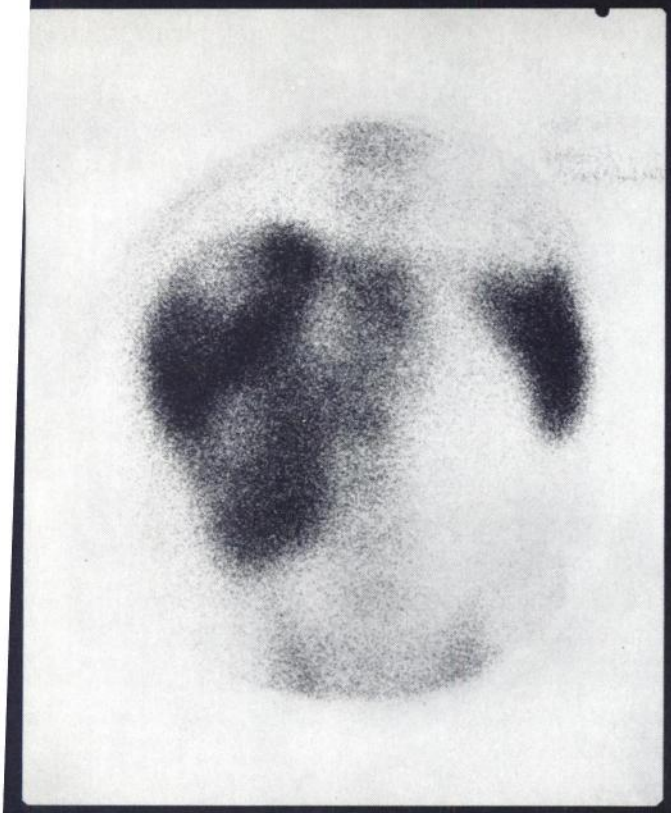
Product #17500502 Multidose vial shield with cap and retainer ring available separately.

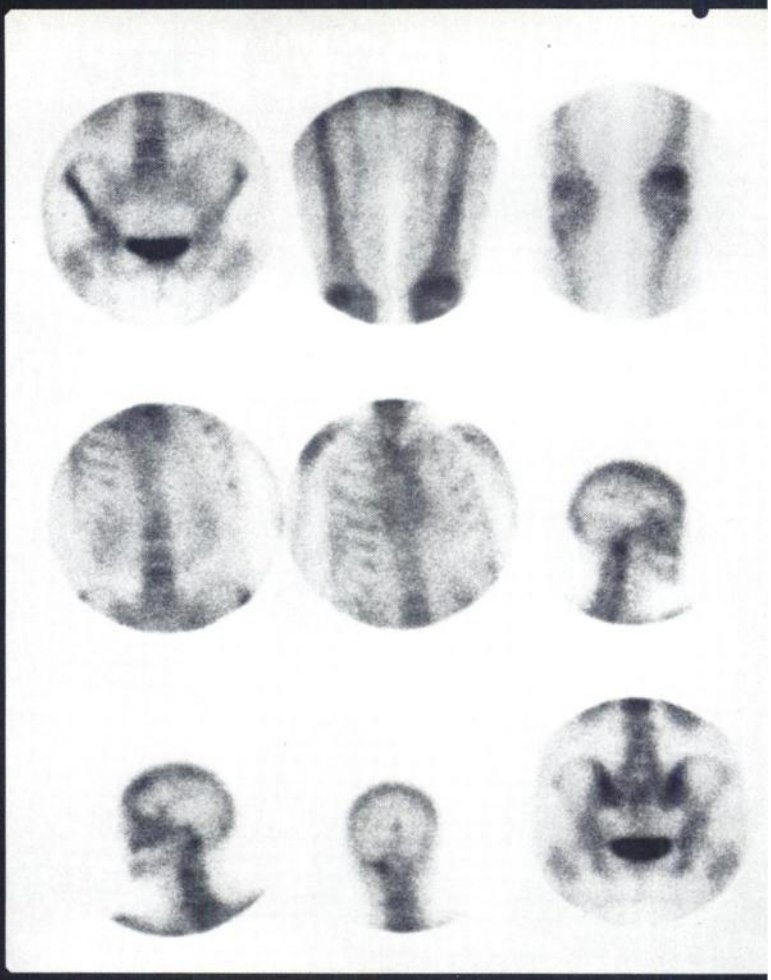
UNION CARBIDE **FROM ATOM TO IMAGE**

Manufactured For:
Union Carbide Corporation • Medical Products Division •
Nuclear Products • P.O. Box 324 • Tuxedo, New York 10987



NUCLEAR IMAGES ON *KODAK* FILM: SHARP.





INFORMATIVE. DURABLE.

Obtaining high-quality images in nuclear medicine requires both skilled personnel and valuable time. Reason enough to record the information you require on Kodak NMB or NMC film.

Sharp. Kodak NMB (blue base) and NMC (clear base) films feature single-coated emulsions to eliminate parallax. Since they are orthochromatic and, therefore, sensitive to both blue and green CRT phosphors, they record all the information on blue or green cathode-ray tubes. The built-in halation control provides for the imaging of crisp sharp dots, resulting in images with clearly defined edges.

Informative. Whether you use a multi- or single-image format, Kodak NMB and NMC films have the "view-box" quality that no other medium can match. The inherent contrast level and excellent resolution of these films enable dot concentration patterns to image both flow and uptake studies effectively.

Durable. Both films are coated on a tough 7-mil Estar base. These films resist curling or cracking and can form a convenient and reliable part of a patient's record for years to come.

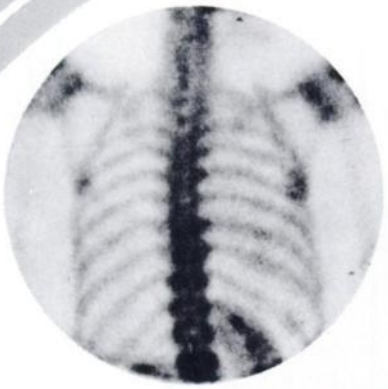
Kodak NMB and NMC films can be processed in 90 seconds and are available in a variety of sheet film sizes. If you would like to know more about these and other Kodak films for nuclear medicine, ask your Kodak Technical Sales Representative, or write: Eastman Kodak Company, Health Sciences Markets Division, Dept. 740-B Rochester, New York 14650.

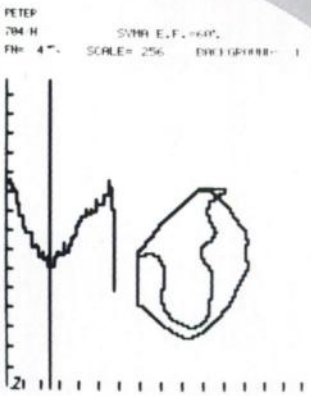
TURNING ENERGY INTO IMAGES

RADIOGRAPHY · COMPUTED TOMOGRAPH
ULTRASOUND · NUCLEAR MEDICINE · THERMOGRAPH

Kodak

LARGE FIELD OR MOBILE ?





BOTH!

with elscint's DYMAX-MBLF the first large field mobile gamma camera

It was tough for nuclear medical specialists to choose between a stationary LF gamma camera with its wide viewing area and a mobile unit with its maneuverability.

Until today.

Elscint has now developed the first large field mobile gamma camera, DYMAX-MBLF, which combines the benefits of both systems. Large field of view and mobility.

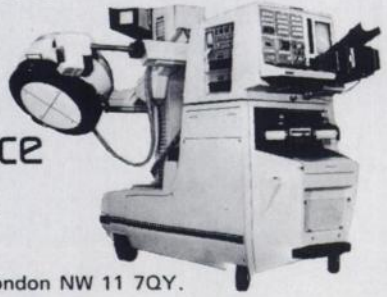
The DYMAX-MBLF has an effective detection area 250% larger than any mobile camera now available. It also has an on-board computerized clinical processor. . And all at a surprisingly low price!

The DYMAX-MBLF can be used for all routine work in your nuclear medicine lab and to perform patient bedside procedures requiring a large field of view in the ICCU or emergency room, such as:

- Lung studies in suspected pulmonary emboli cases
- Myocardial perfusion emission tomography studies
- Gated blood pool studies using 7-Pinhole or Biplane collimators

Check these outstanding peformance highlights:

- Field of view: 400 mm
- Intrinsic resolution (with Tc^{99m} at 20% window)
  Bar separation: 2.8 mm at 20Kc/s
  Bar separation: 4.0 mm at 110Kc/s
- Uniformity (with Tc^{99m} at 20% window)
  3% corrected
- Linearity: ± 1% of FOV diameter
- Maximum imaging count rate: 120Kc/s with 20% window



the elscint commitment to excellence

U.S.A.: ELSCINT INC. 138-160 Johnson Avenue, Hackensack, New Jersey 07602, Tel.: 201-487-5885; Telex: 135382

Elscint International Sales Division, Annandale, North End Road, Golders Green, London NW 11 7QY. Tel.: (01)-458-7323.

If you work with radioactive Xenon, don't take chances with the air you breathe!

The only way to be sure that radioactive Xenon is not leaking into your room air is to monitor the air continuously. Use the dependable Johnston Lab Model 133 Xenon-133 gas monitor.

It easily detects Xenon-133 levels in room air, or trap output, as low as 20% of the maximum 40-hour airborne concentration (10μCi/M^3) specified by the U.S. Nuclear Regulatory Commission (100 CFR 20.103).

This reliable low cost monitor reads 0.1 to 100 MPC of Xenon-133. It features a large, easy-to-read panel meter, visual and audible alarm, and a recorder.

The recorder chart will document the exposure record of your personnel, firm proof for NRC or state inspection. This cannot be done with a meter or digital readout.

Best of all—the Johnston Lab Model 133 has been proved dependable in lab after lab, year after year.

For price and complete specifications, write or call.

Johnston Laboratories

Cockeysville, Maryland USA 21030
Phone (301) 666-9500 Cable: "JOHNLAB"

ACKERMAN NUCLEAR, INC.

Now there's an economical agent

AN-MDP™ Technetium Tc 99m Medronate Kit

If you've been waiting for an economical way to produce high-quality, low-background medronate (MDP) bone images, wait no more. AN-MDP™, from Ackerman Nuclear, Inc., gives you all of the advantages of medronate—and a lot of medronate for your money.

Superior images

Medronate produces high-target-to-background scans that readily demonstrate altered osteogenesis.[1]

- 90–94% blood clearance by two hours after administration
- Lowest soft-tissue uptake of all of the phosphonate bone agents in current use.[2]

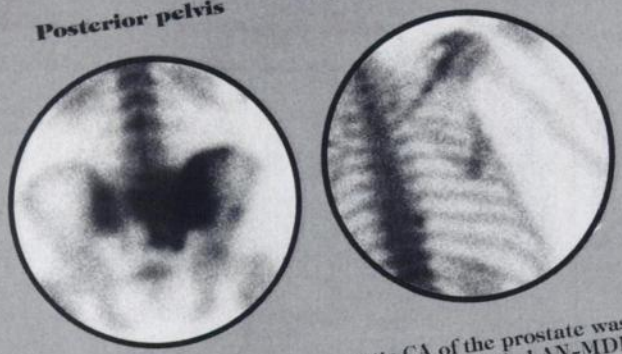
Convenience

- When necessary, imaging may begin an hour after injection (optimal imaging time is 1 to 4 hours).
- AN-MDP is stored and used at room temperature (15–30°C).

Economy

- You get 6 vials of reagent with each AN-MDP kit, instead of the usual 5.

Posterior pelvis **Posterior right side**



A 54-year-old male with metastatic CA of the prostate was administered 15 mCi technetium Tc 99m-labeled AN-MDP. The images were recorded at 500K counts. Courtesy of Century City Hospital, Los Angeles.

For complete prescribing information, consult the package insert, a summary of which follows.

AN-MDP™ Technetium Tc 99m Medronate Kit

Indications and usage. Technetium Tc 99m Medronate may be used as a bone imaging agent to delineate areas of altered osteogenesis.

Contraindications. None known.

Warnings. This class of compounds is known to complex cations such as calcium. Particular caution should be used with patients who have or who may be predisposed to hypocalcemia (i.e., alkalosis)

Precautions. Contents of the vial are intended only for use in the preparation of Technetium Tc 99m Medronate and are *NOT* to be administered directly to the patient. Technetium Tc 99m Medronate, as well as other radioactive drugs, must be handled with care and appropriate safety measures should be used to minimize radiation exposure to patients consistent with proper patient management.

To minimize radiation dose to the bladder, patients should be encouraged to drink fluids and to void immediately before the examination and as often thereafter as possible for the next 4–6 hours.

Technetium Tc 99m Medronate should be formulated within six (6) hours prior to clinical use. Optimal imaging results are obtained 1–4 hours after administration.

Carcinogenesis, mutagenesis, impairment of fertility: No long-term animal studies have been performed to evaluate carcinogenic potential or whether Technetium Tc 99m Medronate affects fertility in males or females.

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

for those famous "MDP" scans.

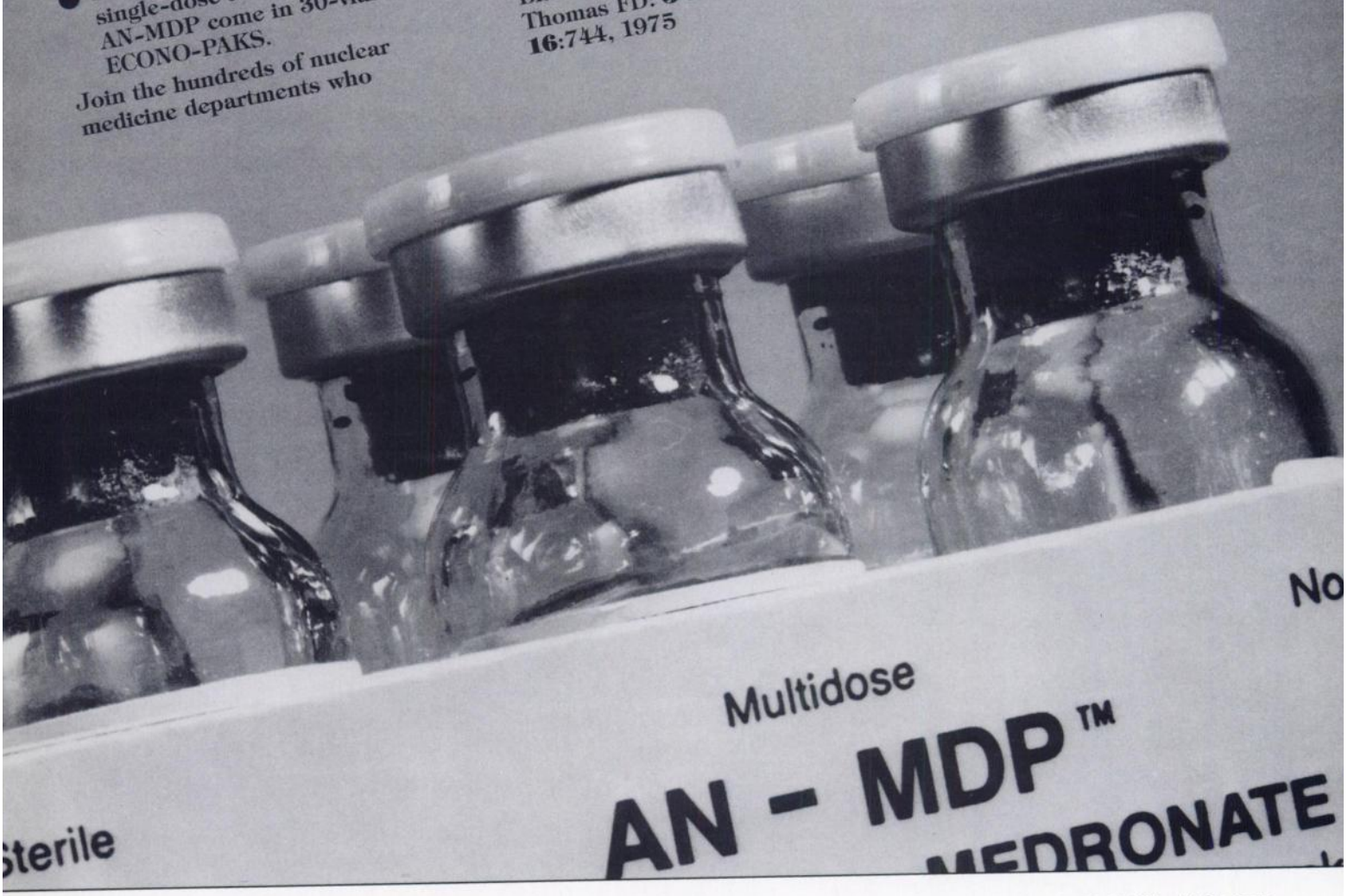
- CUT WASTE. You can choose either single-dose or multi-dose vials to match your department's volume.
- For greater savings, both single-dose and multidose AN-MDP come in 30-vial ECONO-PAKS.

Join the hundreds of nuclear medicine departments who already enjoy the benefits of "MDP" scans. To place your order today, just call us collect: (213) 240-8555.

1. Davis MA, and Jones AG: **Sem Nucl Med 6**:19, 1976
2. Subramanian G, McAfee JG, Blair RJ, Kallfelz FA, and Thomas FD: **J Nucl Med 16**:744, 1975

Ackerman Nuclear, Inc.
445 West Garfield Avenue
Glendale, CA 91204
(213) 240-8555

ACKERMAN NUCLEAR, INC.



Pediatric use: Safety and effectiveness in children have not been established.

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.

Adverse reactions. No adverse reactions specifically attributable to the use of Technetium Tc 99m Medronate have been reported.

Dosage and administration. The suggested dose range for i.v. administration, after reconstitution with oxidant-free sodium pertechnetate Tc 99m Injection, to be employed in the average patient (70 kg) is:

Bone imaging: 10–20 mCi Technetium Tc 99m Medronate

Scanning is optimal at about 1–4 hours post-injection. The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration.

How supplied. AN-MDP™ is supplied both in the single-dose and multidose form. Both are available in sets of 6 or 30 sterile and nonpyrogenic vials. Each nitrogen-flushed vial contains, in lyophilized form:

	Single dose	Multidose
Medronic acid	5.0 mg	10.0 mg
Stannous chloride (minimum)	0.25 mg	0.51 mg
Maximum total stannous and stannic chloride	0.51 mg	1.01 mg

The pH is adjusted to 5.0–5.5 with HCl and NaOH prior to lyophilization. Included in each 6-vial kit is one package insert and 12 radiation labels. In each 30-vial kit is one package insert and 60 radiation labels. Refrigeration is not necessary.

Description	Catalog Number
Single dose 6-vial kit	K-401-S
Single dose 30-vial ECONO-PAK	K-402-S
Multidose 6-vial kit	K-401
Multidose 30-vial ECONO-PAK	K-402

AN-MDP™ is a trademark of Ackerman Nuclear, Inc.

"Make the best available better!"

ACTUAL SIZE

"Work on the ultimate, but in the meantime, make the best available better."

Our people have always accepted the challenge and it's what makes us the leader.

We agree that all things considered the Landauer Gardray 8 film badge system is the best available personnel dosimeter. And, although we are always looking for the ultimate, we have continued to work hard and invest money and time to make it better.

Greatly simplified ordering procedures – permanently encoded unique numbering of film, which is independent of film darkening – new improved techniques for analyzing the film for anomalies that may affect the "meaning" of the exposure and new N.R.C. annual statistical summary reports available now, are just some of the ways our people are working hard to make it better for you.

Write or call for more details.

Landauer

R.S. LANDAUER JR. & CO. A tech/ops COMPANY
Glenwood Science Park
Glenwood, Illinois 60425 . (312) 755-7000

memo

Joe-

When measuring radiopharmaceuticals, the CRC-17 will do the work for you accurately, quickly, easily - and economically.

Dave

- Connector provided to interface the calibrator to CRC-U Computer/Printer system
- Push-button operation . . . instant digital readout of total activity of eight most frequently used radionuclides
- Manual radioisotope selection **for over** 200 radionuclides
- Deep ionization chamber well **allows** convenient measurements of virtually any radioisotope in clinical use and accommodates sample sizes up to 200 ml vial
- Ion collection potential supply easily displayed by pushing TEST button
- High sensitivity (0.1 μCi resolution)
- Moly-assay capability
- Pressurized argon detector

CRC is a registered trademark of Capintec, Inc.

SQUIBB CRC® -17 Radioisotope Dose Calibrator

Medotopes® Product Manager
E. R. Squibb & Sons, Inc.
Box 4000
Princeton, N.J. 08540

Medotopes®
SQUIBB®

☐ Send CRC-17 information.
☐ Have representative call.

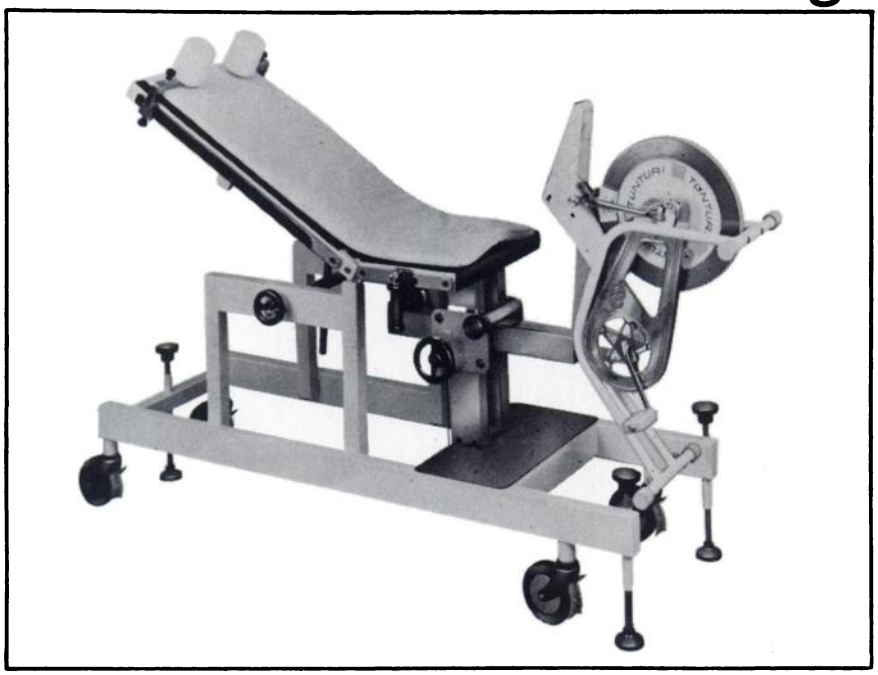
NAME

ADDRESS

CITY STATE ZIP

3 Big Favorites

OF OVER 500 NUCLEAR PRODUCTS
available in our free catalog



a cardiac stress system
that does more and costs less.

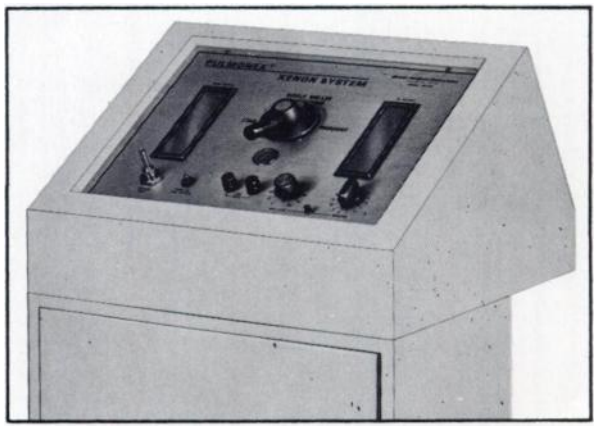
Designed for exercise imaging

SPECIFY MODEL 056-180 IN YOUR INFORMATION REQUEST

radiochromatogram scanner

Computerized analysis of
radiopharmaceutical purity

SPECIFY "ATOMASTER" (149-200) IN YOUR INQUIRIE



pulmanex xenon system

A single unit
with an integrated gas trap

SPECIFY "PULMONEX" (130-500) IN YOUR INQUIRIE

FOR COMPLETE INFORMATION WRITE OR CALL—

Atomic Products Corporation

ATOMLAB DIVISION • ESTABLISHED 1949
P.O. BOX 657 CENTER MORICHES, NEW YORK 11934 USA
(516) 878-1074
TWX #510-228-0449

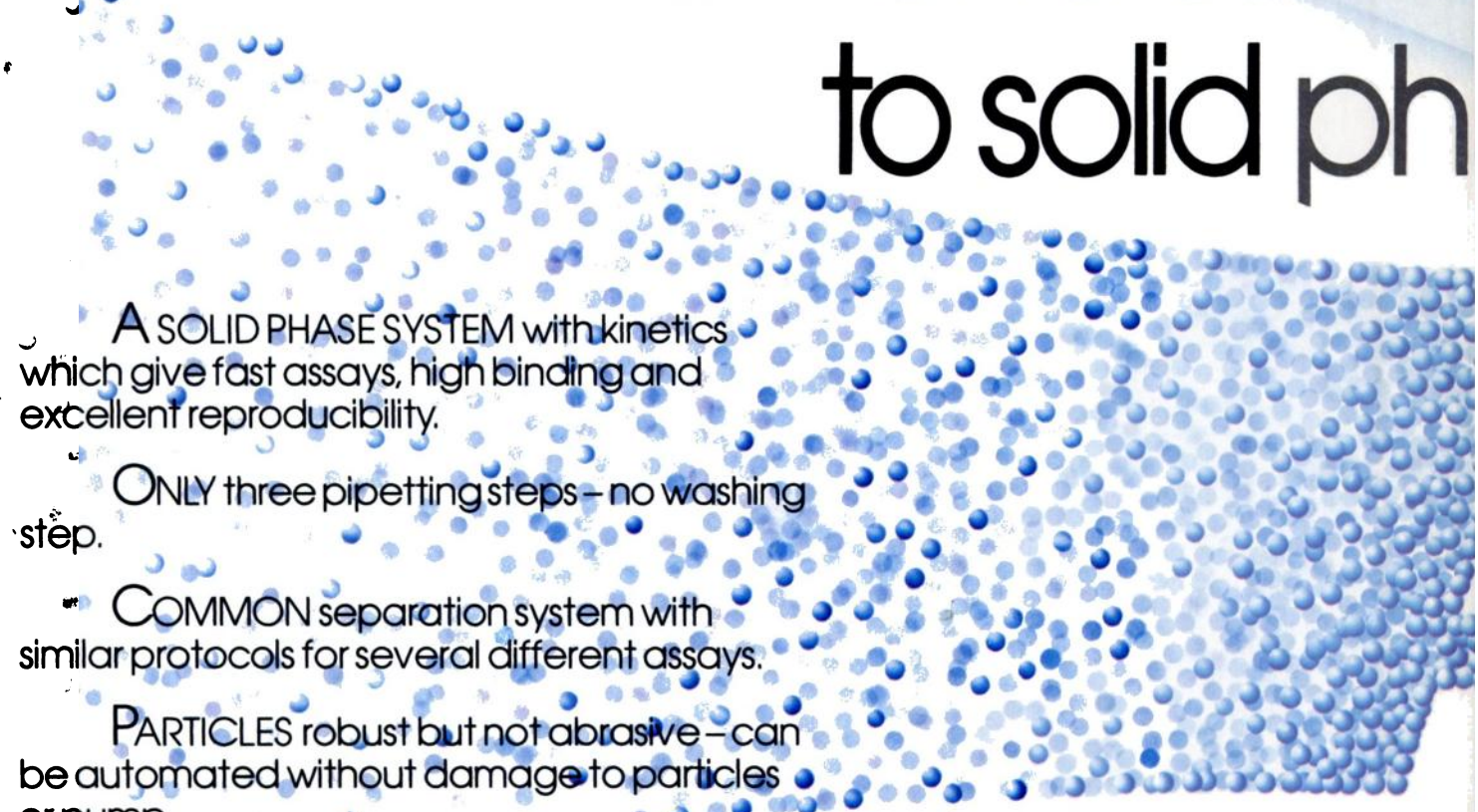
The new working surface in solid phase RIA

Amerlex*

Announcing an important innovation in radioimmunoassay

Amerlex brings new standards in reliability and reproducibility to solid phase RIA. An aqueous solution containing 10^8 polymer beads highly uniform in diameter. Amerlex presents a binding area up to five times greater than that provided by coated tubes. The antibodies are attached to the Amerlex particles by a uniquely optimized process for each assay.

100 million uniform in size and surfa to solid ph



A SOLID PHASE SYSTEM with kinetics which give fast assays, high binding and excellent reproducibility.

ONLY three pipetting steps – no washing step.

COMMON separation system with similar protocols for several different assays.

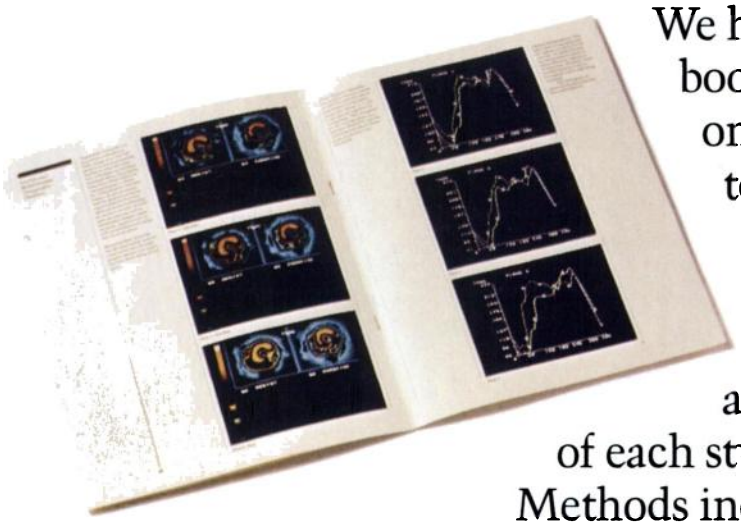
PARTICLES robust but not abrasive – can be automated without damage to particles or pump.

REDUCES problems previously associated with solid phase systems to a minimum.

THE FIRST Amerlex* products will include T3, T4, Cortisol.

*Trade mark.

Important new diagnostic methods in nuclear cardiology. Free from ADAC.



We have just published a 20-page booklet of great value for anyone doing nuclear cardiology today.

The booklet contains actual scintiphotos from the ADAC Clinical Data System and clinical interpretations of each study.

Methods include: **1.** Planar thallium. **2.** Exercise and redistribution thallium. **3.** Tomographic thallium using exclusive ADAC birdcage and circle program software. **4.** Gated blood pool tomography.

For your free copy, ask your local ADAC Systems Consultant, write, or call collect.

ADAC Laboratories, 255 San Geronimo Way, Sunnyvale, California 94086.
Telephone: (408) 736-1101.

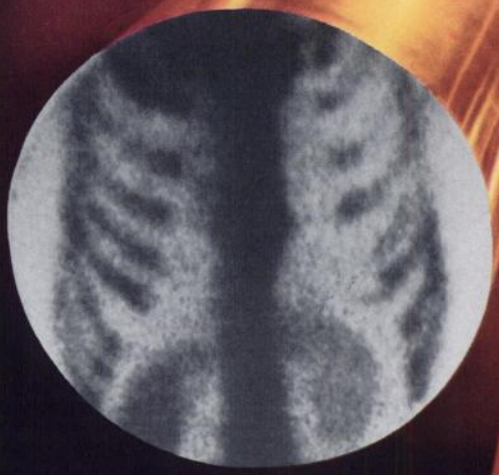
ADAC
Nuclear Medicine Computers

There are three good reasons you should specify

TechneScan® MDP Kit

(Technetium Tc99m Medronate Sodium)

from Mallinckrodt/Nuclear



1 Latest advance in bone imaging capability.

After nearly a year of use, MDP was observed to have "...a 5%-10% greater deposition in bone and a more rapid blood clearance rate than HEDP. Furthermore, its use . . . has been accompanied by a noticeable improvement in the quality and consistency of the scans compared to the previously used HEDP."[1]

"The MDP complex produced images of superior quality as early as two hours after administration, attributable to its more rapid clearance from the blood and soft tissues. On the contrary, a longer interval of 3-4 hours after injection was usually needed for ^{99m}Tc-EHDP; pyrophosphate and polyphosphate complexes regularly required a waiting period of four hours."[2]

2 The TechneScan® Image: Consistent Quality— Reliable Performance.

Many clinicians have come to rely on—and prefer—the benefits associated with TechneScan kits. The Mallinckrodt *MDP Kit* is no exception; it offers users traditional TechneScan quality and convenience, with the added benefit of room temperature storage and long shelf life.

3 The Mallinckrodt commitment to customer service.

Your purchase of any imaging material from Mallinckrodt/Nuclear buys more than just the product. We back up our products with the best customer service/distribution system in the industry. This means fast, dependable delivery and personal attention to your individual needs and requirements.

Mallinckrodt® NUCLEAR

The IMAGE MAKER

Mallinckrodt, Inc.
P.O. Box 5840
St. Louis, Missouri 63134

Please refer to brief summary on next page.

Mallinckrodt

TechneScan® MDP Kit

(Technetium Tc99m Medronate Sodium)

The latest advance in skeletal imaging.

References:
1. Davis MA, Jones AG: Comparison of ^{99m}Tc-Labeled Phosphate and Phosphonate Agents for Skeletal Imaging. *Sem. Nucl. Med.* 6:19, 1976.
2. Subramanian G, McAfee JG, Blair RJ, et al: Technetium-99m-methylene Diphosphonate—A Superior Agent for Skeletal Imaging: Comparison with Other Technetium Complexes. *J. Nucl. Med.* 16:744, 1975.

INDICATIONS AND USAGE

Technetium Tc 99m Medronate Sodium is a skeletal imaging agent used to demonstrate areas of altered osteogenesis as seen for example in metastatic bone disease, Paget's disease, arthritic disease and osteomyelitis.

CONTRAINDICATIONS

None known at present.

WARNINGS

This radiopharmaceutical should not be administered to children or to patients who are pregnant or to nursing mothers unless the benefits to be gained 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.

This class of compound is known to complex cations such as calcium. Particular caution should be used with patients who have, or who may be predisposed to, hypocalcemia (i.e., alkalosis).

PRECAUTIONS

General

The finding of an abnormal concentration of radioactivity implies the existence of underlying pathology, but further study is required to distinguish benign from malignant lesions.

Technetium Tc 99m Medronate Sodium as well as other radioactive drugs must be handled with care and appropriate safety measures should be used to minimize external radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to patients consistent with proper patient management.

To minimize the radiation dose to the bladder, the patient should be encouraged to void before the examination and as often thereafter as possible for the next 4-6 hours.

The preparation contains no bacteriostatic preservative. Therefore, after labeling with Technetium Tc 99m the solution should be stored at 2°-8°C and discarded after 6 hours.

The image quality may be adversely affected by obesity, old age and impaired renal function.

Carcinogenesis

No long term animal studies have been performed to evaluate carcinogenic potential.

Pregnancy

Adequate reproductive 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. There have been no studies in pregnant women. *Technetium Tc 99m Medronate Sodium* should be used in pregnant women only when clearly needed.

Nursing Mothers

It is not known whether this drug is excreted in human milk. As a general rule nursing should not be undertaken while a patient is on the drug since many drugs are excreted in human milk.

Pediatric Use

Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

At present adverse reactions have not been reported that are specifically attributable to the use of *Technetium Tc 99m Medronate Sodium.*

DOSAGE AND ADMINISTRATION

The recommended adult dose is 10 to 20 mCi (200 uCi/kg) by slow intravenous injection over a period of 30 seconds. Optimum scanning time is 1 to 4 hours post-injection.

The patient should be encouraged to drink fluids before and after the examination and to void immediately before imaging is started. This is to minimize the contribution of the bladder content to the image.

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

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

TechneScan MDP Kit-Technetium Tc 99m Medronate Sodium Kit

Product No. 088

Each kit consists of 5 reaction vials, each vial containing, in lyophilized form, sterile and non-pyrogenic:

Medronic Acid	10 mg
Stannous Chloride	1 mg

The pH is adjusted to 6.5 to 7.5 with HCl or NaOH prior to lyophilization. The vials are sealed under an atmosphere of nitrogen.

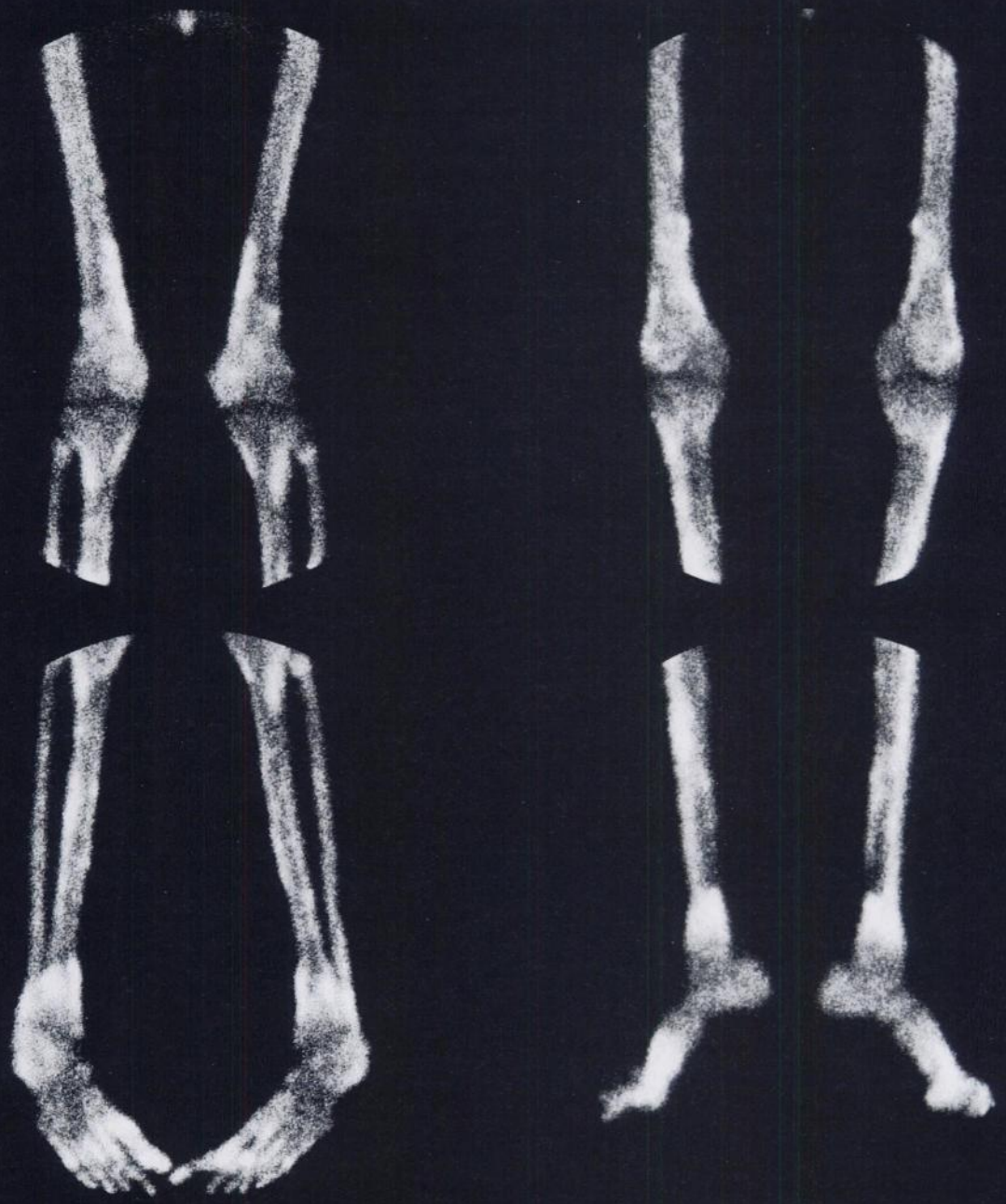
Labels with radiation warning symbols and directions are supplied with each kit.

Manufactured for:
MALLINCKRODT, INC., St. Louis, Missouri 63134

By: MERCK FROSST LABORATORIES Kirkland (Montreal), Canada

Mallinckrodt NUCLEAR

Bone



Diagnosis: hypertrophic pulmonary osteoarthropathy

Imaging information: *Instrument:* GE MaxiCamera™ 535 *Dose:* 20 mCi OSTEOLITE
Scan time: 2.5-3.0 hours postinjection *Acquisition time:* 6 minutes/view

OSTEOLITE™

Technetium Tc 99m Medronate Sodium Kit (MDP)

NEN New England Nuclear®

Please see following page for brief prescribing information.

OSTEOLITE™
Technetium Tc 99m Medronate Sodium Kit (MDP)

INDICATIONS AND USAGE: Technetium Tc 99m OSTEOLITE may be used as a bone imaging agent to delineate areas of altered osteogenesis.

CONTRAINDICATIONS: None known.

WARNINGS: The contents of the OSTEOLITE vial are intended only for use in the preparation of Technetium Tc 99m medronate sodium and are NOT to be directly administered to the patient.

Ideally, examinations using radiopharmaceuticals – especially those elective in nature – of women of childbearing capability should be performed during the first ten days following the onset of menses.

PRECAUTIONS: A thorough knowledge of the normal distribution of intravenously administered Technetium Tc 99m medronate sodium is essential in order to accurately interpret pathologic studies.

Technetium Tc 99m medronate sodium, as well as any radioactive agent, must be handled with care. Once sodium pertechnetate Tc 99m is added to the kit, appropriate safety measures should be used to minimize external radiation exposure to clinical personnel. Care should also be taken to minimize radiation exposure to patients in a manner consistent with proper patient management.

Since 50–75% of the administered dose is renally excreted, good patient hydration and frequent voiding for 4–6 hours post-injection will significantly reduce the bladder wall dose.

The Technetium Tc 99m labeling reaction involved in preparing Technetium Tc 99m medronate sodium depends on the maintenance of tin in the divalent state. Any oxidant present in the sodium pertechnetate Tc 99m employed may adversely affect the quality of the prepared agent. Thus, sodium pertechnetate Tc 99m containing oxidants should not be used without first demonstrating that it is without adverse effect on the properties of the resulting agent.

The use of bacteriostatic sodium chloride as a diluent for sodium pertechnetate Tc 99m may adversely affect the biologic distribution of the prepared agent, and its use is not recommended.

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. Technetium Tc 99m medronate sodium should be used in pregnant women only when clearly needed.

It is not known whether this drug is excreted in human milk. As a general rule nursing should not be undertaken when a patient is administered radioactive material.

Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: None reported.

DOSAGE AND ADMINISTRATION: The recommended dose for the average 70kg adult patient is 15mCi with a range of 10-20mCi. The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration.

Optimal imaging results are obtained within one to four hours after administration.

OSTEOLITE should be used within six hours after aseptic reconstitution with sodium pertechnetate Tc 99m. For optimum results this time should be minimized.

The vial contains no bacteriostat.

Radiopharmaceuticals should be used by persons who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate governmental agencies authorized to license the use of radionuclides.

HOW SUPPLIED: NEN's OSTEOLITE™ Technetium Tc 99m Medronate Sodium Kit is supplied as a set of five or thirty vials, sterile and non-pyrogenic. Each nitrogen-flushed vial contains in lyophilized form:

Medronate Disodium – 10mg
Stannous Chloride Dihydrate – 0.85mg

The pH is adjusted to between 7.0-7.5 with hydrochloric acid and/or sodium hydroxide solution. The contents of the vial were lyophilized under nitrogen. Store at room temperature (15 -30 C). Included in each five (5) vial kit is one (1) package insert and six (6) radiation labels. Included in each thirty (30) vial kit is one (1) package insert and thirty-six (36) radiation labels.

The contents of the kit vials are not radioactive; however, **after reconstitution with sodium pertechnetate Tc 99m the contents are radioactive and adequate shielding and handling precautions must be maintained.**

Do not use if there is a vacuum in the immediate drug container or if air is injected into the container when the dose is withdrawn.

Catalog Number NRP-420 (5 vial kit) April 1978
Catalog Number NRP-420C (30 vial kit)

GLUCOSCAN™
Technetium Tc 99m Gluceptate Sodium Kit

INDICATIONS AND USAGE: Technetium Tc 99m Gluceptate Sodium is used for brain imaging.

Technetium Tc 99m Gluceptate Sodium is indicated for renal perfusion imaging as an adjunct in the diagnosis, localization and evaluation of kidney disease. It may provide useful information about renal size, shape, and position and may delineate lesions affecting renal blood flow.

CONTRAINDICATIONS: None known.

WARNINGS: The contents of the GLUCOSCAN vial are intended only for use in the preparation of Technetium Tc 99m Gluceptate Sodium and are NOT to be directly administered to the patient.

Ideally examinations using radiopharmaceuticals – especially those elective in nature – of a woman of childbearing capability should be performed during the first ten days following the onset of the menses.

Dehydration and/or patient positioning may result in failure to visualize urinary excretory structures in the presence of normal function. Adequate patient fluid intake and repositioning may reduce the incidence of such false positive studies.

PRECAUTIONS: Technetium Tc 99m Gluceptate Sodium, as well as any radioactive agent, must be handled with care. Once sodium pertechnetate Tc 99m is added to the kit, appropriate safety measures should be used to minimize external radiation exposure to clinical personnel.

Care should also be taken to minimize radiation exposure to patients in a manner consistent with proper patient management.

The Technetium Tc 99m labeling reaction involved in preparing Technetium Tc 99m Gluceptate Sodium depends on the maintenance of tin in the divalent state. Any oxidant present in the sodium pertechnetate Tc 99m employed may adversely affect the quality of the prepared agent. Thus, sodium pertechnetate Tc 99m containing oxidants should not be used without first demonstrating that it is without adverse effect on the properties of the resulting agent.

The use of bacteriostatic sodium chloride as a diluent for sodium pertechnetate Tc 99m may adversely affect the biologic distribution of the prepared agent, and its use is not recommended.

No long term animal studies have been performed to evaluate carcinogenic potential.

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. Technetium Tc 99m Gluceptate Sodium should be used in pregnant women only when clearly needed.

It is not known whether this drug is excreted in human milk. As a general rule, nursing should not be undertaken when a patient is administered radioactive material.

Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: Although infrequent, erythema has been reported in association with the use of Technetium Tc 99m Gluceptate Sodium.

DOSAGE AND ADMINISTRATION: The recommended dose for the average (70kg) adult patient is 10-20 millicuries for both renal and brain imaging. Technetium Tc 99m Gluceptate Sodium is intended for intravenous administration only.

Technetium Tc 99m Gluceptate Sodium should be used within six hours after aseptic reconstitution with sodium pertechnetate Tc 99m. For optimal results, this time should be minimized. The reaction vial contains no bacteriostat.

Optimal results for both renal and brain imaging are obtained one hour after administration. Studies have shown that although optimal target-to-background ratios for brain lesions are obtained at two hours post-injection, there is no improvement in diagnostic efficacy after one hour.

Radiopharmaceuticals should be used by persons with specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate governmental agencies authorized to license the use of radionuclides.

The components of the New England Nuclear GLUCOSCAN 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 addition of pertechnetate solution and the withdrawal of doses for patient administration.

HOW SUPPLIED: NEN's GLUCOSCAN Technetium Tc 99m Gluceptate Sodium Kit is supplied as a set of five or thirty vials, sterile and non-pyrogenic. Each vial contains in lyophilized form:

Gluceptate Sodium – 200mg
Maximum Tin – 0.07mg
Stannous Chloride (min.) – 0.06mg

Prior to lyophilization the pH is adjusted with hydrochloric acid and/or sodium hydroxide solution. Store at room temperature (15 -30 C). Included in each five vial kit is one package insert and six radiation labels. Included in each thirty vial kit is one package insert and thirty-six radiation labels.

The contents of the kit vials are not radioactive: however, after reconstitution with sodium pertechnetate Tc 99m the contents are radioactive and adequate shielding and handling precautions must be maintained.

This reagent kit is approved for use by persons licensed by the U.S. Nuclear Regulatory Commission pursuant to Section 35.14 and 35.100 Group III of 10 CFR or under equivalent licenses of Agreement States.

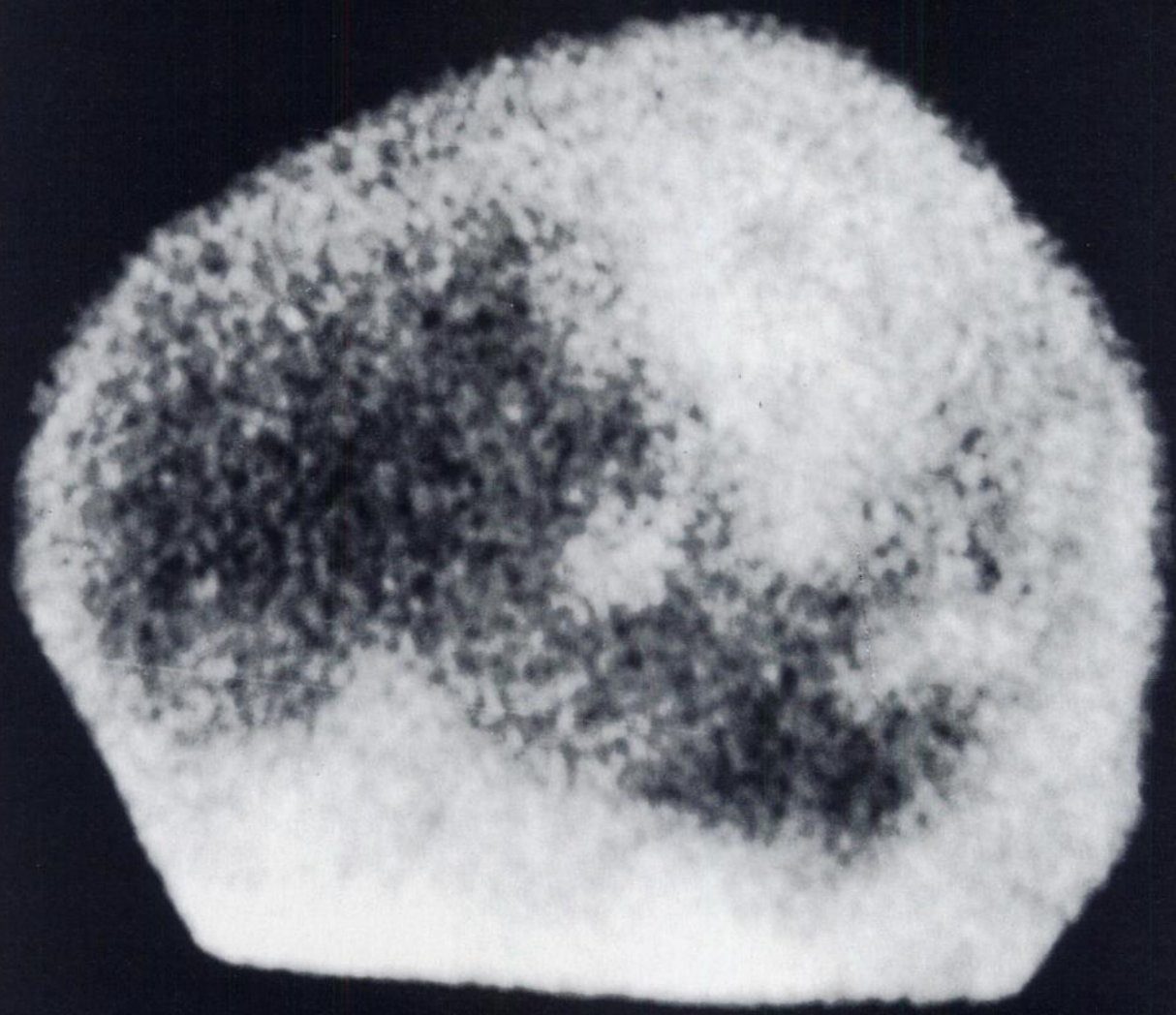
Catalog Number NRP-180 (5 vial kit) August 1978
Catalog Number NRP-180C (30 vial kit)

NEN New England Nuclear®
601 Treble Cove Rd., North Billerica, MA 01862

Call Toll-Free 800-225-1572 Telex: 94-0996
(In Mass. and International: 617-482-9595)

Canada: NEN Canada, 2453 46th Avenue, Lachine, Que, H8T 3C9 Tel: 514-636-4971
Europe: NEN Chemicals GmbH, D-6072 Dreieich, W. Germany, Postfach 401240 Tel: (06103) 85034 Order Entry: (06103) 81011

Brain



Diagnosis: arteriovenous malformation

Imaging information: *Instrument:* Ohio Nuclear Series 100 Gamma Camera *Dose:* 15 mCi GLUCOSCAN
Scan time: 90 minutes postinjection *Counts:* 400 K

GLUCOSCAN™

Technetium Tc 99m Gluceptate Sodium Kit

NEN New England Nuclear®

Please see preceding page for brief prescribing information.

When Chandler Clover ordered his patients evacuated at 7:30 P.M. on Good Friday, he thought he was just taking a sound precautionary step. Neither the administrator of the new Womans Hospital, nor anyone else in Flowood, Mississippi, really expected the swelling waters of the Pearl River to reach their doorsteps. Yet by Easter Sunday, April 15, 1979, a dry doorstep was just a happy memory in this and other Jackson-area communities, deluged by the Pearl's historic "500 Year Flood."

For nearly a week, the water stood 41 inches deep in Womans Hospital. When it finally receded the following Thursday, Clover surveyed $1.5 million in damages. Among the few items of equipment appearing remotely salvageable, was the Radiology Department's two year old Dunn Instruments Model 600 multi-image camera. Although it had been totally submerged for several days, the administrator decided to have it returned to the factory for evaluation.

When Dunn service engineers received the camera, they scraped the mud off its video monitor face and shutter mechanism. Then they plugged it in and turned it on. When they operated the controls—you guessed it—the camera worked! All electronic and mechanical components, save the delicate shutter leaves, functioned normally. With a little cleaning up and replacing of rusted metal parts, the same camera—Serial No. 937—is going back to Womans Hospital.

Now, "natural disaster" coverage isn't part of our standard warranty yet. But we think that the fantastic survivability shown by this camera says something about the standards of reliability and quality control our Engineering and Production people have been practicing for years. Standards backed up by the swift, skilled and personal attention of our Service Department. Standards that are still built into 600 Beta Series cameras and every other Dunn product.

So when your imaging needs include the ability to survive some wear and tear, as well as the highest quality photographic results, think of us.

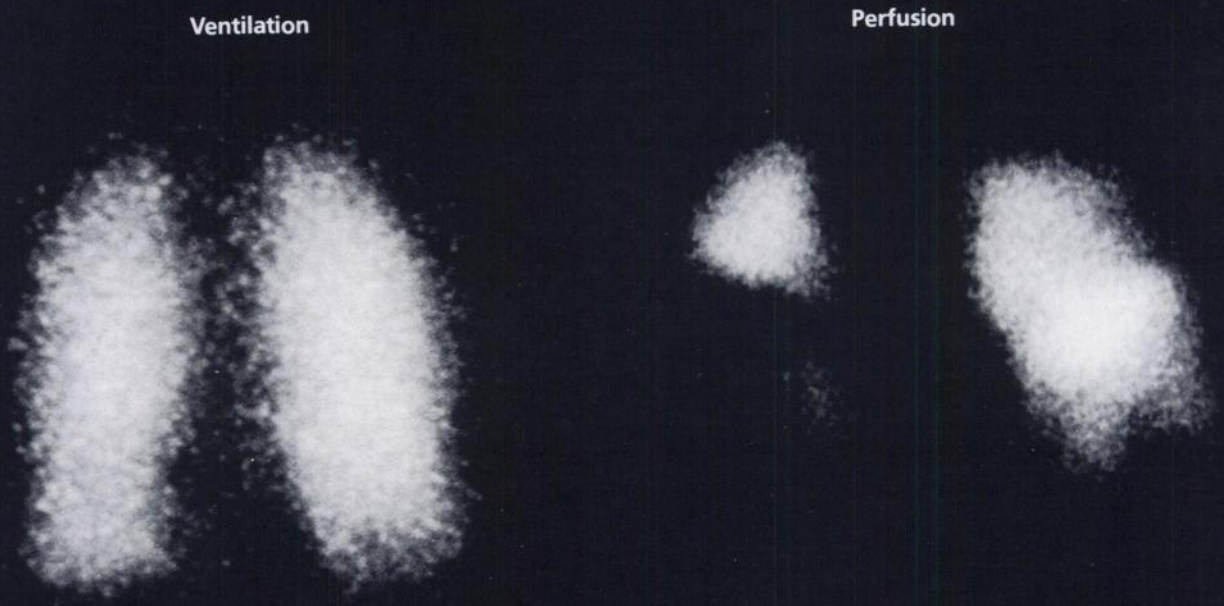
Dunn Instruments, Inc., 544 Second Street, P.O. Box 77172, San Francisco, CA 94107.

Newspaper articles and flood photos courtesy Jackson, Mississippi *Clarion Ledger.*

Dunn Instruments

Reliability put to the test.

Lung



Diagnosis: normal ventilation, abnormal perfusion — pulmonary embolism

Imaging information: *Instrument:* Picker Model 4/15 Gamma Camera *Dose:* 15 mCi Xenon 133; 3 mCi PULMOLITE *Information density:* 1,000 counts/cm²; 2,000 counts /cm²

Xenon Xe 133 Gas
(CALIDOSE™) Dispensing System

PULMOLITE™
Technetium Tc 99m Aggregated Albumin Kit

NEN New England Nuclear®

Please see following page for brief prescribing information.

Xenon Xe 133 Gas

(CALIDOSE*) Dispensing System

INDICATIONS: Inhalation of xenon Xe 133 gas has proved valuable for the evaluation of pulmonary function and for imaging the lungs. It may also be applied to assessment of cerebral flow.

CONTRAINDICATIONS: To date no known contraindications to the use of xenon Xe 133 gas have been reported.

WARNINGS: This radiopharmaceutical should not be administered to pregnant or lactating women unless the benefits to be gained outweigh the potential hazards.

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 the menses.

Radiopharmaceuticals should be used only by physicians who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator, and whose experience and training have been approved by the appropriate governmental agency authorized to license the use of radionuclides.

PRECAUTIONS: As in the use of any other radioactive material care should be taken to insure minimum radiation exposure to the patient, consistent with proper patient management, and to insure minimum radiation exposure to occupational workers. Expired xenon Xe 133 gas should be controlled in a manner that is in compliance with the appropriate governmental agency regulations.

Xenon Xe 133 adheres to some plastics and rubber and should not be allowed to stand in tubing or respirator containers. Such unrecognized loss of radioactivity from the dose for administration may render the study nondiagnostic. Xenon Xe 133 gas delivery systems, ie, respirators or spirometers, and associated tubing assemblies must be leakproof to avoid loss of radioactivity into the laboratory environs not specifically protected by exhaust systems.

ADVERSE REACTIONS: To date, no adverse reactions based on the use of xenon Xe 133 gas have been reported.

DOSAGE AND ADMINISTRATION: Xenon Xe 133 gas is administered by inhalation from closed respirator systems or spirometers.

The suggested activity range employed for inhalation by the average adult patient (70kg) is:

Pulmonary function including imaging: 2-30 mCi in 3 liters of air.

Cerebral blood flow: 10-30 mCi in 3 liters of air.

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

HOW SUPPLIED: The xenon Xe 133 gas is supplied as part of the Calidose* system, consisting of 2 ml unit dose vials and the Calidose dispenser* for shielded dispensing.

Normally vials containing either 10 or 20 mCi/vial, packed up to 5 vials per shield tube, are supplied. Vial sets containing up to 100 mCi/vial are available.

Catalog Number NRP-127 *Patent Pending †JO 127 July 1975, Rev 1

PULMOLITE™

Technetium Tc 99m Aggregated Albumin Kit

INDICATIONS AND USAGE: Technetium Tc 99m aggregated albumin is indicated as a lung imaging agent to be used as an adjunct in the evaluation of pulmonary perfusion.

CONTRAINDICATIONS: Technetium Tc 99m aggregated albumin should not be administered to patients with severe pulmonary hypertension.

The use of Tc 99m aggregated albumin is contraindicated in persons with a history of hypersensitivity reactions to products containing human serum albumin.

WARNINGS: The possibility of allergic reactions should be considered in patients who receive multiple doses.

Theoretically, the intravenous administration of particulate material such as aggregated albumin imposes a temporary small mechanical impediment to blood flow. While this effect is probably physiologically insignificant in most patients the administration of aggregated albumin is possibly hazardous in acute cor pulmonale and other states of severely impaired pulmonary blood flow.

This radiopharmaceutical preparation should not be administered to children or to pregnant or lactating women unless the expected benefits to be gained outweigh the potential risks.

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.

PRECAUTIONS: In cases of right-to-left cardiac shunt, additional risk may exist due to the rapid entry of aggregated albumin into the systemic circulation.

The contents of the kit are not radioactive. However after the sodium pertechnetate Tc 99m is added, adequate shielding of the final preparation must be maintained.

The labeling reactions involved in preparing the agent depend on maintaining tin in the reduced state. Any oxidant present in the sodium pertechnetate Tc 99m supply may thus adversely affect the quality of the prepared agent. Hence, sodium pertechnetate Tc 99m containing oxidants, or other additives, should not be employed without first demonstrating that it is without adverse effect on the properties of the resulting agent.

The contents of the vial are sterile and non-pyrogenic. It is essential that the user follow the directions carefully and adhere to strict aseptic procedures during preparation of the radiodiagnostic.

Technetium Tc 99m aggregated albumin is physically unstable and as such the particles will settle with time. Failure to mix the vial contents adequately before use may result in non-uniform distribution of radioactivity.

It is also recommended that, because of the increasing probability of agglomeration with aging, a batch of Technetium Tc 99m aggregated albumin not be used after eight hours from the time of reconstitution. Refrigerate at 2 to 8 C after reconstitution. If blood is withdrawn into the syringe, unnecessary delay prior to injection may result in clot formation in situ.

The contents of the vial are under a nitrogen atmosphere and should be protected from air. Do not use if clumping or foaming of the contents is observed.

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. Technetium Tc 99m aggregated albumin should be used in pregnant women only when clearly needed.

It is not known whether this drug is excreted in human milk. As a general rule, nursing should not be undertaken while a patient is on a drug since many drugs are excreted in human milk.

Safety and effectiveness in children have not been established.

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

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 governmental agency authorized to license the use of radionuclides.

ADVERSE REACTIONS: The literature contains reports of deaths occurring after the administration of aggregated albumin to patients with pre-existing severe pulmonary hypertension. Instances of hemodynamic or idiosyncratic reactions to preparations of Tc 99m-labeled aggregated albumin have been reported.

Hypersensitivity reactions are possible whenever protein-containing materials such as Tc 99m-labeled aggregated albumin are used in man. Epinephrine, antihistamines and corticosteroid agents should be available for use.

DOSAGE AND ADMINISTRATION: The recommended intravenous dose range for the average patient (70kg) is 1 to 4 millicuries. The volume of the dose may vary from 0.2 to 1.3 ml.

The recommended number of aggregated albumin particles to be administered per dose is 200,000-700,000 with the suggested number being approximately 350,000.

For easy and accuracy in dispensing the prepared agent, it is recommended that prior to reconstitution, concentrated sodium pertechnetate Tc 99m be further diluted to a volume of 8ml with fresh, preservative-free sodium chloride injection (U.S.P.).

HOW SUPPLIED: PULMOLITE™ Technetium Tc 99m Aggregated Albumin Kit is supplied in kits of five (5) or thirty (30) vials, sterile and non-pyrogenic, each vial containing in lyophilized form:

Aggregated albumin (human)-1.0mg
Normal human serum albumin-10mg
Sodium chloride-10mg
Stannous chloride dihydrate, maximum-0.07mg

Each vial contains 3.6-6.5 x 10^6 aggregated albumin particles.

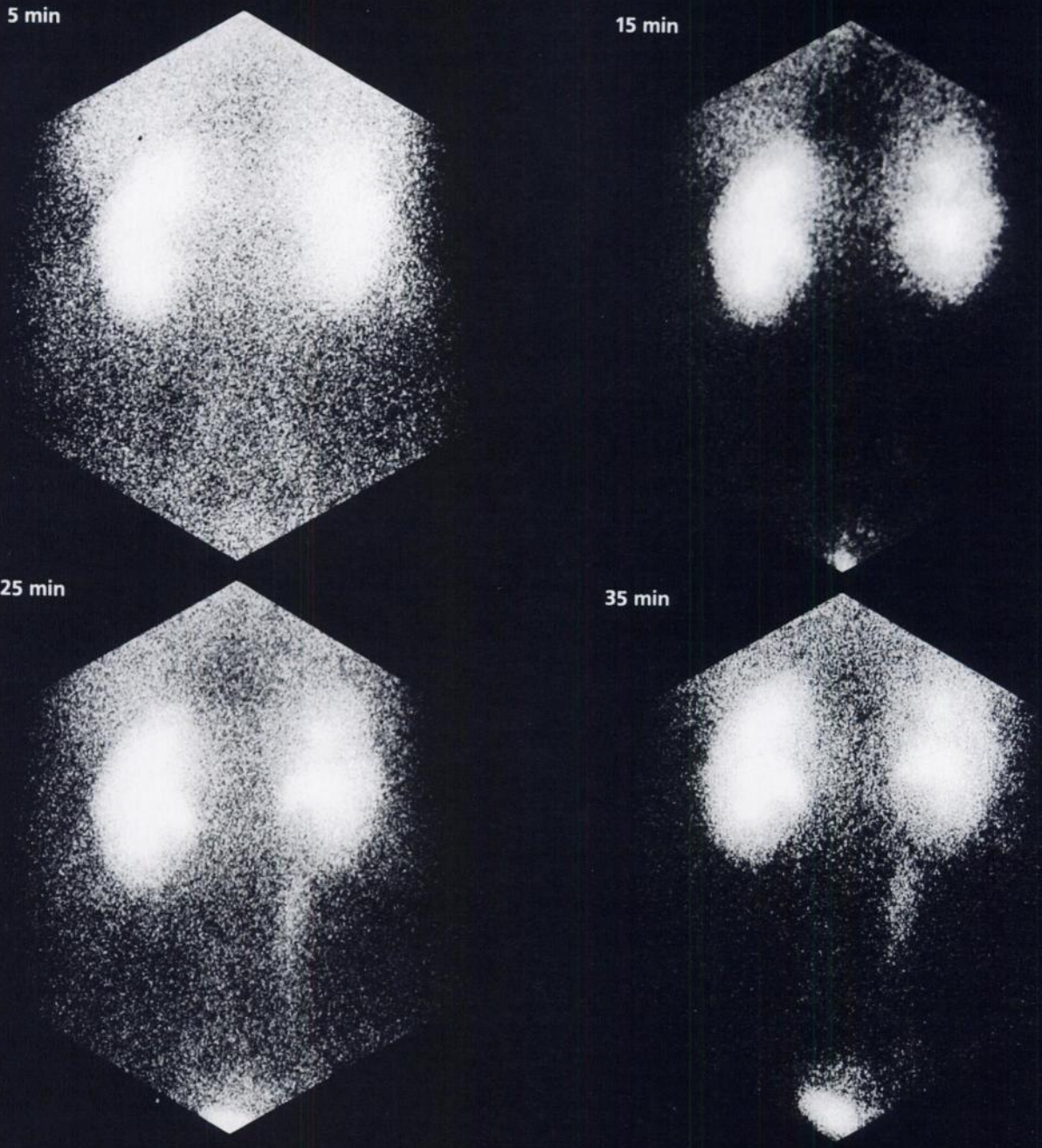
PULMOLITE contains no preservative; after reconstitution the shielded vial should be stored at 2° to 8° C.

Included in each five (5) vial kit is one (1) package insert and six (6) radiation labels. Included in each thirty (30) vial kit is one (1) package insert and thirty-six (36) radiation labels.

This reagent kit is approved for use by persons licensed by the U.S. Nuclear Regulatory Commission pursuant to Section 35.14 and 35.100 Group III of 10CFR 35 or under licenses of Agreement States.

Catalog Number NRP-415 **August 1976**

Kidney



Diagnosis: pyelonephritis of right upper pole

Imaging information: *Instrument:* Ohio Nuclear Sigma 410 Gamma Camera *Dose:* 15 mCi GLUCOSCAN
Counts/image: 800 K for first postflow images, then same time for succeeding images

GLUCOSCAN™

Technetium Tc 99m Gluceptate Sodium Kit

NEN New England Nuclear®

Please see following page for brief prescribing information.

GLUCOSCAN™
Technetium Tc 99m Gluceptate Sodium Kit

INDICATIONS AND USAGE: Technetium Tc 99m Gluceptate Sodium is used for brain imaging.

Technetium Tc 99m Gluceptate Sodium is indicated for renal perfusion imaging as an adjunct in the diagnosis, localization and evaluation of kidney disease. It may provide useful information about renal size, shape, and position and may delineate lesions affecting renal blood flow.

CONTRAINDICATIONS: None known.

WARNINGS: The contents of the GLUCOSCAN vial are intended only for use in the preparation of Technetium Tc 99m Gluceptate Sodium and are NOT to be directly administered to the patient.

Ideally examinations using radiopharmaceuticals – especially those elective in nature – of a woman of childbearing capability should be performed during the first ten days following the onset of the menses.

Dehydration and/or patient positioning may result in failure to visualize urinary excretory structures in the presence of normal function. Adequate patient fluid intake and repositioning may reduce the incidence of such false positive studies.

PRECAUTIONS: Technetium Tc 99m Gluceptate Sodium, as well as any radioactive agent, must be handled with care. Once sodium pertechnetate Tc 99m is added to the kit, appropriate safety measures should be used to minimize external radiation exposure to clinical personnel.

Care should also be taken to minimize radiation exposure to patients in a manner consistent with proper patient management.

The Technetium Tc 99m labeling reaction involved in preparing Technetium Tc 99m Gluceptate Sodium depends on the maintenance of tin in the divalent state. Any oxidant present in the sodium pertechnetate Tc 99m employed may adversely affect the quality of the prepared agent. Thus, sodium pertechnetate Tc 99m containing oxidants should not be used without first demonstrating that it is without adverse effect on the properties of the resulting agent.

The use of bacteriostatic sodium chloride as a diluent for sodium pertechnetate Tc 99m may adversely affect the biologic distribution of the prepared agent, and its use is not recommended.

No long term animal studies have been performed to evaluate carcinogenic potential.

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. Technetium Tc 99m Gluceptate Sodium should be used in pregnant women only when clearly needed.

It is not known whether this drug is excreted in human milk. As a general rule, nursing should not be undertaken when a patient is administered radioactive material.

Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: Although infrequent, erythema has been reported in association with the use of Technetium Tc 99m Gluceptate Sodium.

DOSAGE AND ADMINISTRATION: The recommended dose for the average (70kg) adult patient is 10-20 millicuries for both renal and brain imaging. Technetium Tc 99m Gluceptate Sodium is intended for intravenous administration only.

Technetium Tc 99m Gluceptate Sodium should be used within six hours after aseptic reconstitution with sodium pertechnetate Tc 99m. For optimal results, this time should be minimized. The reaction vial contains no bacteriostat.

Optimal results for both renal and brain imaging are obtained one hour after administration. Studies have shown that although optimal target-to-background ratios for brain lesions are obtained at two hours post-injection, there is no improvement in diagnostic efficacy after one hour.

Radiopharmaceuticals should be used by persons with specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate governmental agencies authorized to license the use of radionuclides.

The components of the New England Nuclear GLUCOSCAN 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 addition of pertechnetate solution and the withdrawal of doses for patient administration.

HOW SUPPLIED: NEN's GLUCOSCAN Technetium Tc 99m Gluceptate Sodium Kit is supplied as a set of five or thirty vials, sterile and non-pyrogenic. Each vial contains in lyophilized form:

Gluceptate Sodium – 200mg
Maximum Tin – 0.07mg
Stannous Chloride (min.) – 0.06mg

Prior to lyophilization the pH is adjusted with hydrochloric acid and/or sodium hydroxide solution. Store at room temperature (15°-30°C). Included in each five vial kit is one package insert and six radiation labels. Included in each thirty vial kit is one package insert and thirty-six radiation labels.

The contents of the kit vials are not radioactive: however, after reconstitution with sodium pertechnetate Tc 99m the contents are radioactive and adequate shielding and handling precautions must be maintained.

This reagent kit is approved for use by persons licensed by the U.S. Nuclear Regulatory Commission pursuant to Section 35.14 and 35.100 Group III of 10 CFR or under equivalent licenses of Agreement States.

Catalog Number NRP-180 (5 vial kit) August 1978
Catalog Number NRP-180C (30 vial kit)

Gallium Citrate Ga67

INDICATIONS AND USAGES: Gallium Citrate Ga-67 may be useful in demonstrating the presence and extent of the following malignancies: Hodgkins disease, lymphomas and bronchogenic carcinoma. Positive Ga-67 uptake in the absence of prior symptoms warrants follow-up as an indication of a potential disease state.

Gallium Citrate Ga 67 may be useful as an aid in detecting some acute inflammatory lesions.

CONTRAINDICATIONS: None known.

WARNINGS: Gallium Citrate Ga 67 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 radiopharmaceutical drug products, especially those elective in nature of a woman of childbearing capability should be performed during the first few (approximately ten) days following the onset of menses.

PRECAUTIONS: A thorough knowledge of the normal distribution of intravenously administered Gallium Citrate Ga 67 is essential in order to accurately interpret pathologic studies.

The findings of an abnormal gallium concentration usually implies the existence of underlying pathology, but further diagnostic studies should be done to distinguish benign from malignant lesions. Gallium Citrate Ga 67 is intended for use as an adjunct in the diagnosis of certain neoplasms. Certain pathologic conditions may yield up to 40% false negative gallium studies. Therefore a negative study cannot be definitively interpreted as ruling out the presence of disease.

Lymphocytic lymphoma frequently does not accumulate Gallium Ga 67 sufficiently for unequivocal imaging; and the use of gallium with this histologic type of lymphoma is not recommended at this time.

Gallium Citrate Ga 67, as well as other radioactive drugs, must be handled with care and appropriate safety measures should be used to minimize external radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to patients consistent with proper patient management.

No long term animal studies have been performed to evaluate carcinogenic potential.

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. Gallium Citrate Ga 67 should be used in pregnant women only when clearly needed.

Gallium Citrate Ga 67 has been found to accumulate in breast milk and should not be used in nursing mothers.

Safety and effectiveness in children have not been established.

Gallium Ga 67 localization cannot differentiate between tumor and acute inflammation; and other diagnostic studies must be added to define the underlying pathology.

The expiration date of the drug is seven days after the date of calibration.

ADVERSE REACTIONS: Severe itching, erythema and rash were observed in one patient of 300 studied.

DOSAGE AND ADMINISTRATION: The recommended adult (70kg) dose of Gallium Citrate Ga 67 is 2-5mCi. Gallium Citrate Ga 67 is intended for intravenous administration only.

Approximately 10% of the administered dose is excreted in the feces during the first week after injection. Daily laxatives and/or enemas are recommended from the day of injection until the final images are obtained in order to cleanse the bowel of radioactive material and minimize the possibility of false positive studies.

Studies indicate the optimal tumor to background concentration of ratios are often obtained about 48 hours post-injection. However, considerable biological variability may occur in individuals, and acceptable images may be obtained as early as 6 hours and as late as 120 hours after injection.

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

Radiopharmaceuticals should be used by persons who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate government agencies authorized to license the use of radionuclides.

HOW SUPPLIED: Gallium Citrate Ga 67 is supplied sterile and non-pyrogenic for intravenous use. Each ml contains 2mCi of Gallium Ga 67 on the calibration date, as a complex formed from 9ng gallium chloride Ga 67, 2mg of sodium citrate, 6.8mg sodium chloride, and 0.9% benzyl alcohol w/v as preservative. The pH is adjusted to between 4.5-7.5 with hydrochloric acid and/or sodium hydroxide solution.

Vials are available from 3mCi to 18mCi in increments of 3mCi on calibration date.

The contents of the vial are radioactive and adequate shielding and handling precautions must be maintained.

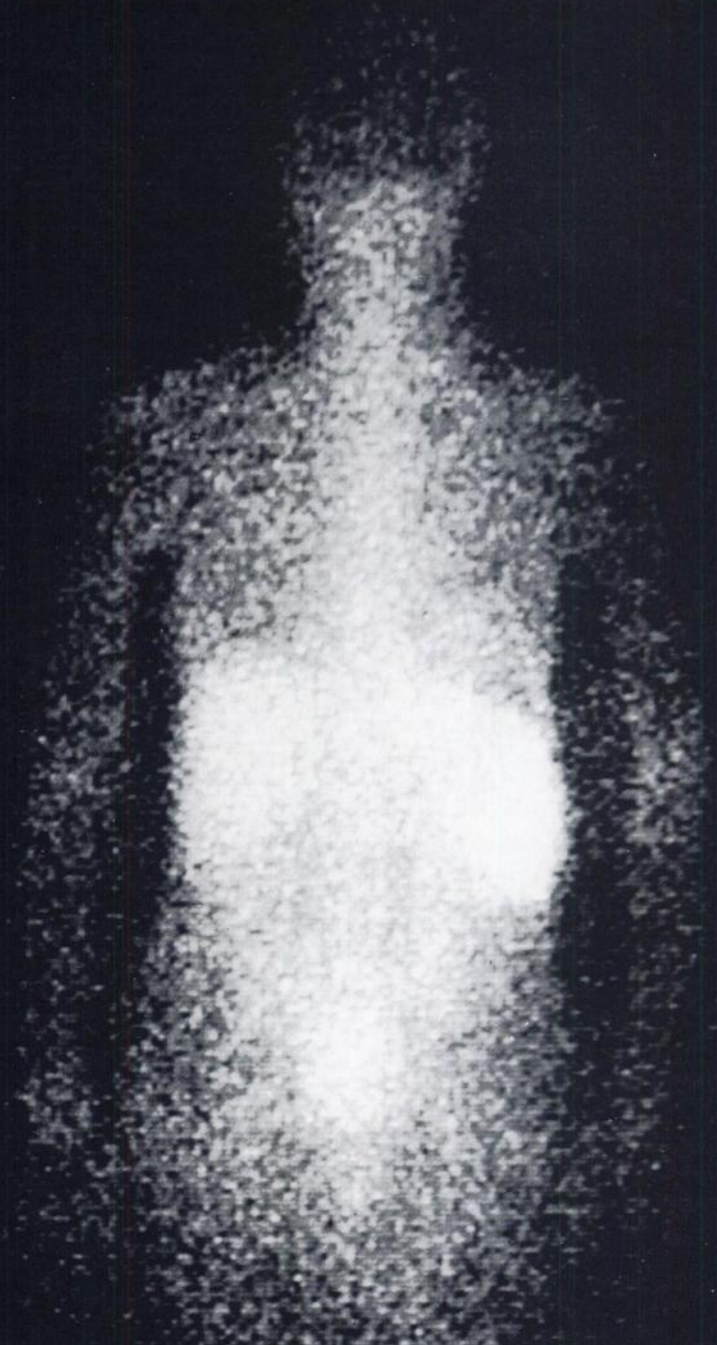
Catalog Number NRP-121 December 1979

NEN New England Nuclear®
601 Treble Cove Rd., North Billerica, MA 01862

Call Toll-Free: 800-225-1572 Telex: 94-0996
(In Mass. and International: 617-482-9595)

Canada: NEN Canada, 2453 46th Avenue, Lachine, Que. H8T 3C9 Tel: 514-636-4971
Europe: NEN Chemicals GmbH, D-6072 Dreieich, W. Germany, Postfach 401240. Tel: (06103) 85034 Order Entry: (06103) 81011

Tumor



Diagnosis: plasmacytoma

Imaging information: *Instrument:* Cleon 760 Whole Body Imager
Scan time: 48 hours postinjection *Speed:* 5 cm/min

Dose: 5 mCi Gallium Citrate Ga 67

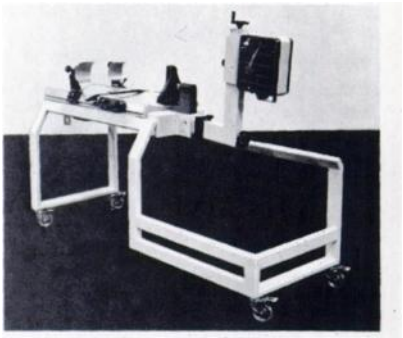
Gallium Citrate Ga67

NEN New England Nuclear®

Please see preceding page for brief prescribing information.

NEW... FOR NUCLEAR CARDIOLOGY

Cardiac Stress Table and Ergometer System

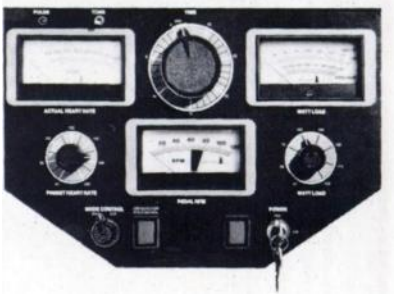


VERSATILE

- Permits all patient positions, from supine through upright.
- Adjustable seat, pedal unit, hand grips and shoulder braces.
- Table does "double duty" for standard imaging procedures.

PRACTICAL

- Full clearance for gamma camera base.
- Swing-away pedal unit for patient access.
- O.R.-type casters assure complete mobility.



COST EFFECTIVE

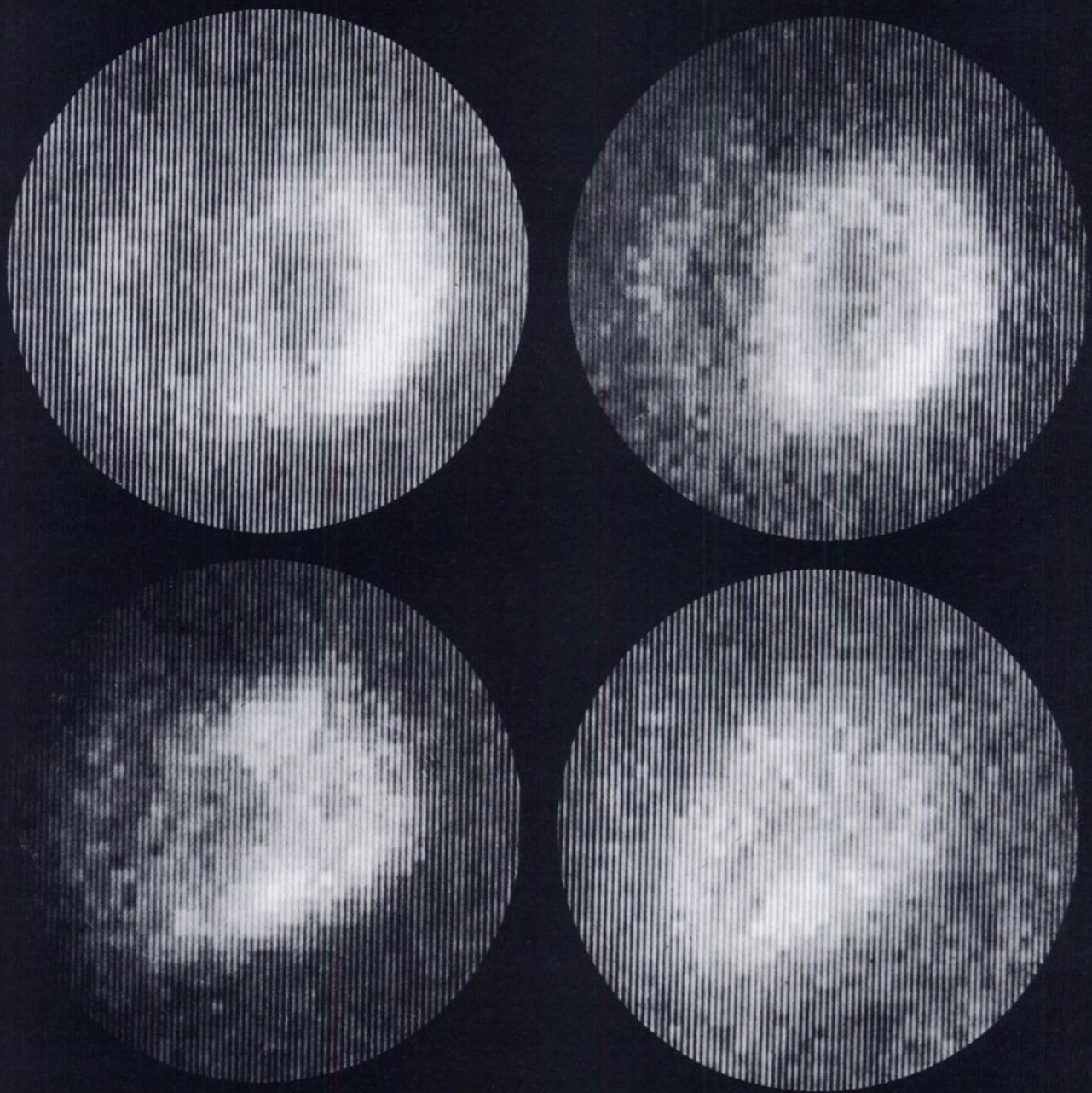
- High-quality Warren Collins pedal unit and control console can be used for standard stress testing.
- Exceptional performance, designed expressly to meet the requirements of nuclear cardiology.

For more information, request Bulletin 289-B

VICTOREEN

NUCLEAR ASSOCIATES
Division of VICTOREEN, INC.
100 Voice Road • Carle Place, N.Y. 11514 • (516) 741-6360

Heart



Diagnosis: reversible ischemia, apical, septal, anterior segments

Imaging information: *Instrument:* Ohio Nuclear Sigma 400 Gamma Camera, VIP 450 *Collimator:* General, all purpose
Dose: 1.5 mCi thallous chloride Tl 201 *Scan time:* exercise — 4 minutes postinjection, redistribution — 4 hours
Acquisition time: 10 minutes

Thallous Chloride Tl 201

NEN New England Nuclear®

Please see following page for brief prescribing information.

Thallous Chloride Tl 201

INDICATIONS AND USAGE: Thallous Chloride Tl 201 may be useful in myocardial perfusion imaging for the diagnosis and localization of myocardial infarction.

It may also be useful in conjunction with exercise stress testing as an adjunct in the diagnosis of ischemic heart disease (atherosclerotic coronary artery disease).

CONTRAINDICATIONS: None known.

WARNINGS: In studying patients in whom myocardial infarction or ischemia is known or suspected, care should be taken to assure continuous clinical monitoring and treatment in accordance with safe, accepted procedure. Exercise stress testing should be performed only under the supervision of a qualified physician and in a laboratory equipped with appropriate resuscitation and support apparatus.

Ideally, examinations using radiopharmaceutical drug products – especially those elective in nature – of women of childbearing capability should be performed during the first ten days following the onset of menses.

PRECAUTIONS: 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 thallium Tl 201 scans. Attention is directed to the fact that thallium is a potassium analog, and since the transport of potassium is affected by these factors, the possibility exists that the thallium may likewise be affected.

Thallous Chloride Tl 201, as all radioactive materials, must be handled with care and used with appropriate safety measures to minimize external radiation exposure to clinical personnel. Care should also be taken to minimize radiation exposure to patients in a manner consistent with proper patient management.

No long-term animal studies have been performed to evaluate carcinogenic potential.

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. Thallous Chloride Tl 201 should be used in pregnant women only when clearly needed.

It is not known whether this drug is excreted in human milk. As a general rule nursing should not be undertaken when a patient is administered radioactive material.

Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: Adverse reactions related to use of this agent have not been reported to date.

DOSAGE AND ADMINISTRATION: The recommended adult (70kg) dose of Thallous Chloride Tl 201 is 1-1.5mCi. Thallous Chloride Tl 201 is intended for intravenous administration only.

For patients undergoing resting thallium studies, imaging is optimally begun within 10-20 minutes after injection. Several investigators have reported improved myocardial-to-background ratios when patients are injected in the fasting state, in an upright posture, or after briefly ambulating.

Best results with thallium imaging performed in conjunction with exercise stress testing appear to be obtained if the thallium is administered when the patient reaches maximum stress and when the stress is continued for 30 seconds to one minute after injection. Imaging should begin within ten minutes post-injection since target-to-background ratio is optimum by that time. Several investigators have reported significant decreases in the target-to-background ratios of lesions attributable to transient ischemia by two hours after the completion of stress testing.

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

Radiopharmaceuticals should be used by persons with specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate government agencies authorized to license the use of radionuclides.

HOW SUPPLIED: Thallous Chloride Tl 201 for intravenous administration is supplied as a sterile, non-pyrogenic solution containing at calibration time, 1mCi/ml of Thallous Tl 201, 9mg/ml sodium chloride, and 9mg/ml of benzyl alcohol. The pH is adjusted to between 4.5-6.5 with hydrochloric acid and/or sodium hydroxide solution. Vials are available in the following quantities of radioactivity: 1.5, 3.0, 4.5, 6.0, and 9.0 millicuries of Thallous Tl 201.
The contents of the vial are radioactive. Adequate shielding and handling precautions must be maintained.

Catalog Number NRP-427 November 1977

Gallium Citrate Ga67

INDICATIONS AND USAGES: Gallium Citrate Ga-67 may be useful in demonstrating the presence and extent of the following malignancies: Hodgkins disease, lymphomas and bronchogenic carcinoma. Positive Ga-67 uptake in the absence of prior symptoms warrants follow-up as an indication of a potential disease state.

Gallium Citrate Ga 67 may be useful as an aid in detecting some acute inflammatory lesions.

CONTRAINDICATIONS: None known.

WARNINGS: Gallium Citrate Ga 67 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 radiopharmaceutical drug products, especially those elective in nature of a woman of childbearing capability should be performed during the first few (approximately ten) days following the onset of menses.

PRECAUTIONS: A thorough knowledge of the normal distribution of intravenously administered Gallium Citrate Ga 67 is essential in order to accurately interpret pathologic studies.

The findings of an abnormal gallium concentration usually implies the existence of underlying pathology, but further diagnostic studies should be done to distinguish benign from malignant lesions. Gallium Citrate Ga 67 is intended for use as an adjunct in the diagnosis of certain neoplasms. Certain pathologic conditions may yield up to 40% false negative gallium studies. Therefore a negative study cannot be definitively interpreted as ruling out the presence of disease.

Lymphocytic lymphoma frequently does not accumulate Gallium Ga 67 sufficiently for unequivocal imaging; and the use of gallium with this histologic type of lymphoma is not recommended at this time.

Gallium Citrate Ga 67, as well as other radioactive drugs, must be handled with care and appropriate safety measures should be used to minimize external radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to patients consistent with proper patient management.

No long term animal studies have been performed to evaluate carcinogenic potential.

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. Gallium Citrate Ga 67 should be used in pregnant women only when clearly needed.

Gallium Citrate Ga 67 has been found to accumulate in breast milk and should not be used in nursing mothers.

Safety and effectiveness in children have not been established.

Gallium Ga 67 localization cannot differentiate between tumor and acute inflammation; and other diagnostic studies must be added to define the underlying pathology.

The expiration date of the drug is seven days after the date of calibration.

ADVERSE REACTIONS: Severe itching, erythema and rash were observed in one patient of 300 studied.

DOSAGE AND ADMINISTRATION: The recommended adult (70kg) dose of Gallium Citrate Ga 67 is 2-5mCi. Gallium Citrate Ga 67 is intended for intravenous administration only.

Approximately 10% of the administered dose is excreted in the feces during the first week after injection. Daily laxatives and/or enemas are recommended from the day of injection until the final images are obtained in order to cleanse the bowel of radioactive material and minimize the possibility of false positive studies.

Studies indicate the optimal tumor to background concentration of ratios are often obtained about 48 hours post-injection. However, considerable biological variability may occur in individuals, and acceptable images may be obtained as early as 6 hours and as late as 120 hours after injection.

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

Radiopharmaceuticals should be used by persons who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate government agencies authorized to license the use of radionuclides.

HOW SUPPLIED: Gallium Citrate Ga 67 is supplied sterile and non-pyrogenic for intravenous use. Each ml contains 2mCi of Gallium Ga 67 on the calibration date, as a complex formed from 9ng gallium chloride Ga 67, 2mg of sodium citrate, 6.8mg sodium chloride, and 0.9% benzyl alcohol w/v as preservative. The pH is adjusted to between 4.5-7.5 with hydrochloric acid and/or sodium hydroxide solution.

Vials are available from 3mCi to 18mCi in increments of 3mCi on calibration date.

The contents of the vial are radioactive and adequate shielding and handling precautions must be maintained.

Catalog Number NRP-121 December 1979

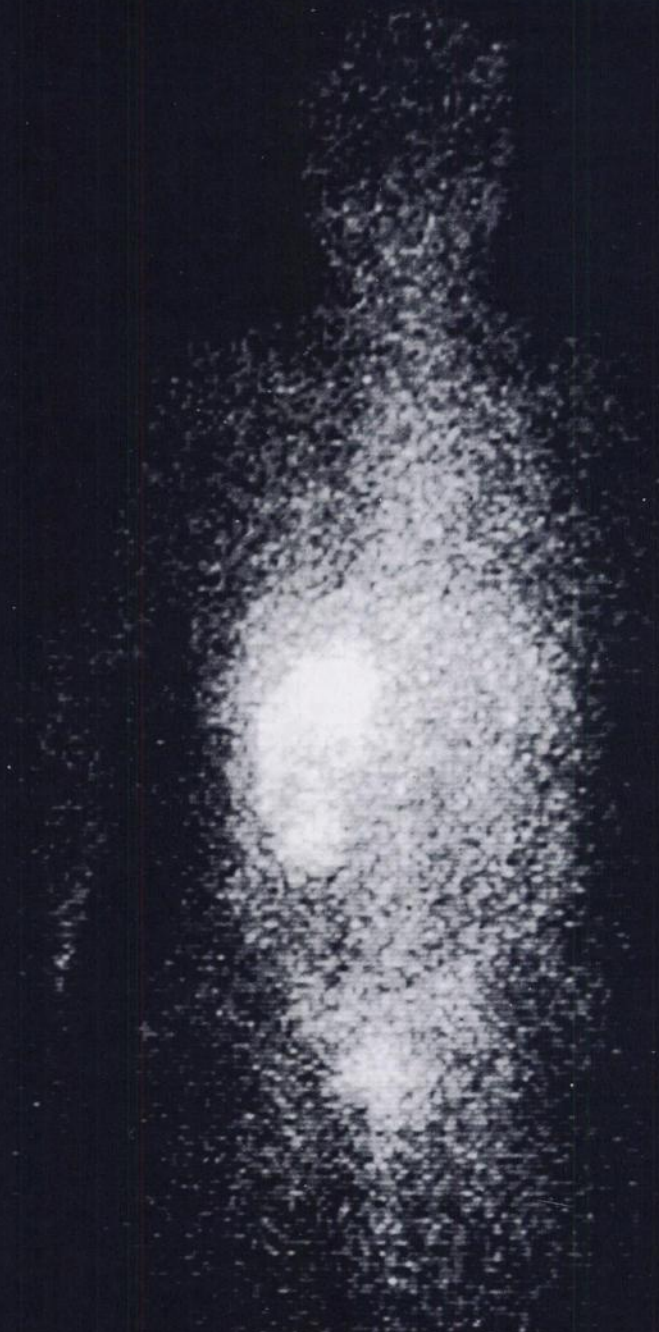
New England Nuclear®

601 Treble Cove Rd., North Billerica, MA 01862

Call Toll-Free 800-225-1572 Telex 94-0996
(In Mass. and International 617-482-9595)

Canada: NEN Canada, 2453 46th Avenue, Lachine, Que, H8T 3C9 Tel: 514-636-4971
Europe: NEN Chemicals GmbH, D-6072 Dreieich, W Germany, Postfach 401240 Tel (06103) 85034 Order Entry: (06103) 81011

Abscess



Diagnosis: intranephric abscess

Imaging information: *Instrument:* Cleon 760 Whole Body Imager *Dose:* 5 mCi Gallium Citrate Ga 67
Scan time: 48 hours postinjection *Speed:* 5 cm/min

Gallium Citrate Ga 67

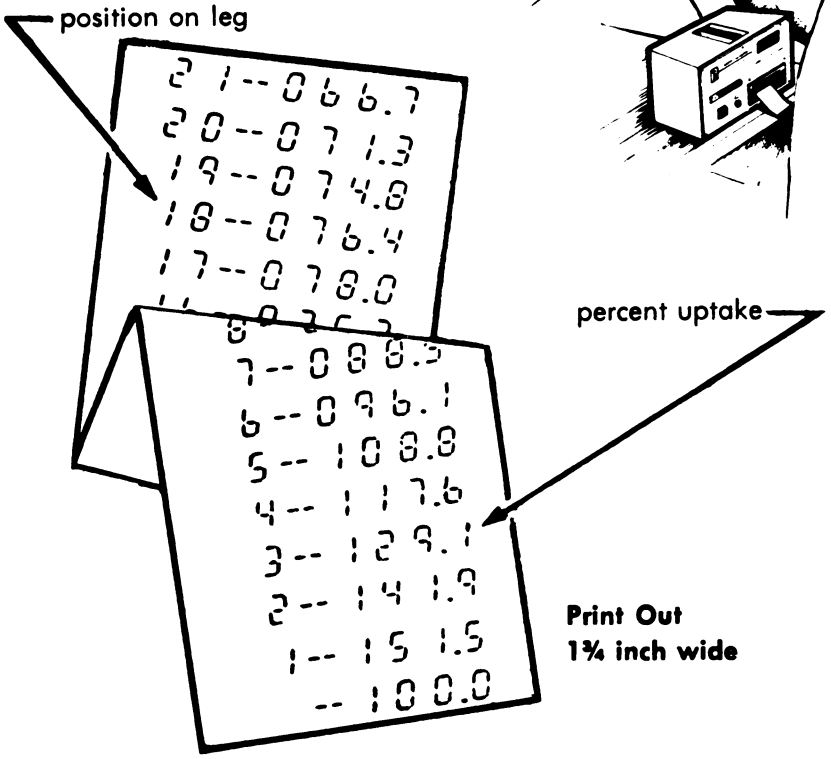
NEN New England Nuclear®

Please see preceding page for brief prescribing information.

thrombosis

detection of DVT using I-125 fibrinogen

CCC-4TP



Print Out
1¾ inch wide

- Direct **digital percent** readout
- Printout **saves time**
- Bedside operation
- Right angle probe minimizes patient disturbance
- Controls are on probe
- Operator **error protection**
- Versatile — settable for other isotopes

TECHNICAL ASSOCIATES

7051 ETON AVE. • CANOGA PARK, CA. 91303 (213) 883-7043

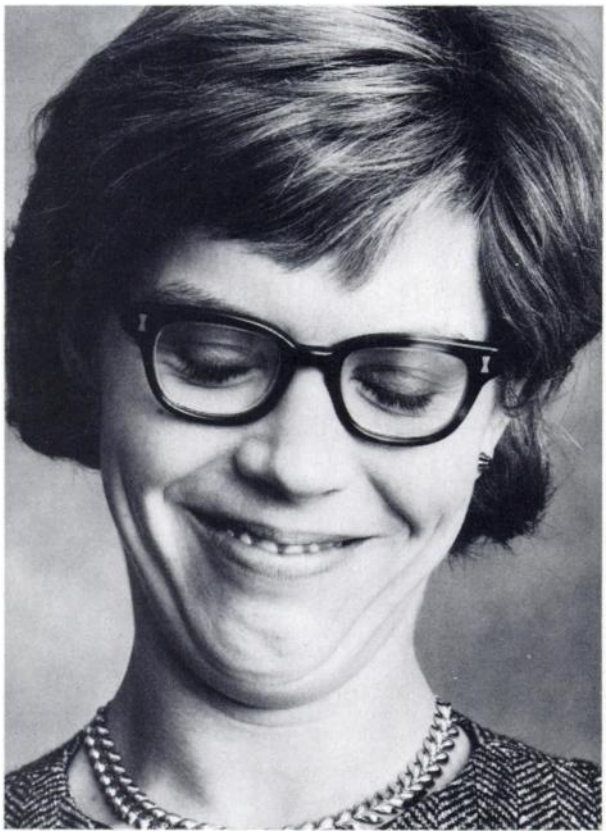
Generator

Technetium Tc 99m Generator

NEN New England Nuclear®

FOR GREATER SPEED AND ACCURACY, YOUR FILM BADGE IS COMPUTER CHECKED.

THEN, THE COMPUTER IS MADGE FOSSI CHECKED.



If you think computers are infallible, you should know Madge Fossi. Her task is to catch that rare error — to the benefit of everyone who wears a Nuclibadge II radiation dosimeter.

Madge marvels at the computer's speed and accuracy, but that never stops her from checking and rechecking its work before personnel radiation exposure reports are sent to hospitals and other facilities using Nuclibadge II Radiation Monitoring Service.

Madge and the Searle computer are part of the team that evaluates exposed film and TLD chips, and issues the reports so essential to the long-term protection of hospital and research personnel working in radiation-risk areas. The computer-generated report details radiation exposures by individual. The report is so complete it meets federal, state, and local requirements, and it is so reliable it meets Madge Fossi's own demanding criteria.

Where an exposure exceeds levels established by each client, Madge sees that it is reported immediately by phone. That's where personal attention really pays off.

Another way it pays is in fast response to your questions or request for changes. Our toll-free hotline is available for that purpose, and badges for new employees are on the way to you within 24 hours.

All aspects of the Searle personalized service are just as timely. Emergency reports and additional monitors are airmailed within 24 hours; exposure reports are returned within days of receipt of exposed packet and new packets are sent in plenty of time for distribution before the next monitoring period.

Our color coding system lets you know at a glance that a person is wearing the correct badge, and we have just the right Nuclibadge II monitoring badge for every situation—whole-body, wrist, ring, or wallet card.

Put Madge Fossi, the computer, and the rest of the Searle team to work for your hospital. Call toll-free today about a customized radiation monitoring program, and learn more about Searle's personal touch.

SEARLE

Searle Health Physics Services
Unit of Searle Medical Products
2000 Nuclear Drive
Des Plaines, IL 60018

call toll-free
800/323-6015
(In Illinois, call collect, 312/635-3387)

1007 DMO-1319

Continuing Medical Education

Programs Available:

Thallium-201 Myocardial Imaging
Diagnostic Visualization of the Ischemic Myocardium
Optimizing Thallium-201 Imaging

Gallium-67 Imaging in Clinical Medicine
Gallium Citrate Ga 67: Nuclear Department Reference
Diagnosing Postoperative Sepsis

Bone Imaging in Oncology
A Clinical Casebook: Bone Imaging in Orthopedic Medicine

Diagnosing Pulmonary Embolism
Ventilation/Perfusion Imaging

NEN New England Nuclear®

ohio·nuclear

Power. To push around.

Mobile Power You Can Control.

Take it anywhere—and interface it with any gamma camera.

Newest of our Spectrum One nuclear medicine computers and cameras, the MCS-560 makes analysis of cardiology and nuclear medicine procedures easy.

Easy To Use.

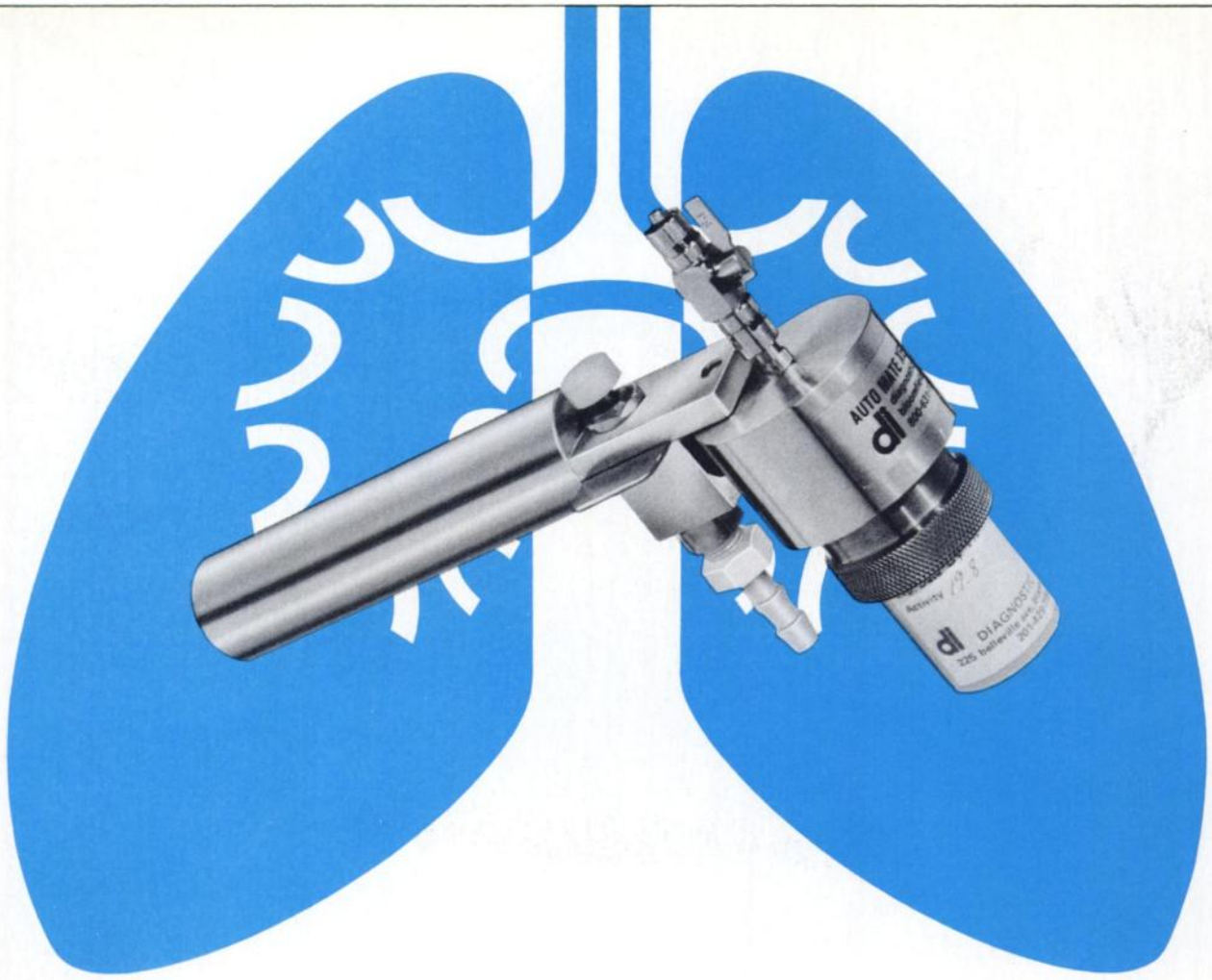
The MCS-560 is the most powerful mobile nuclear medicine computer anywhere. Sophisticated analysis is easy with: ☐ conversational programs ☐ pushbutton protocols ☐ unique MEDI-BASIC programming language ☐ built-in ECG Isolator/Detector ☐ unique tomographic reconstruction programs.

Backed by our own dedicated nuclear products service team, we're building our one-source reputation with a commitment to excellence.

TECHNICARE
CORPORATION

29100 Aurora Road
Solon, Ohio 44139
(216) 248-1800
A Johnson & Johnson Company

Formerly Ohio-Nuclear, Inc.



Diagnostic Isotopes *introduces*

AUTO-MATE XENON GAS DISPENSER

Better... because of what you don't have to do!

- Transfer Xenon from one container to another
- Pump a handle to operate
- Puncture vial after it is attached to system
- Interrupt study to administer 0_2
- Purchase expensive one-time use products

Yes, the Auto-Mate Xenon Gas Dispenser eliminates a lot of hassle now associated with Ventilation System studies. This new instrument from Diagnostic Isotopes offers the following advantages: simplifies loading; delivers Xenon by merely pressing a button; punctures vial automatically; delivers full dose in a one breath bolus, administers oxygen by simply reattaching dispenser to tubing and works with all delivery and trap systems. The Auto-Mate provides technician safety because the shipping container is the radiation shielding. Made of lightweight aluminum and brass for extreme durability.

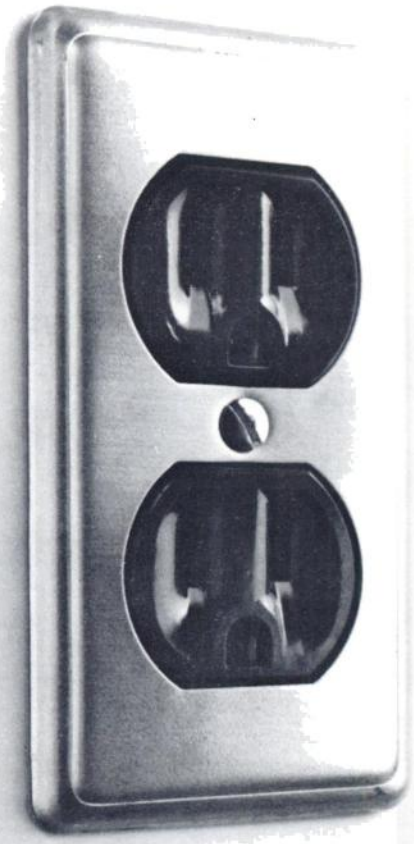
Inquire about our complete Xenon Program

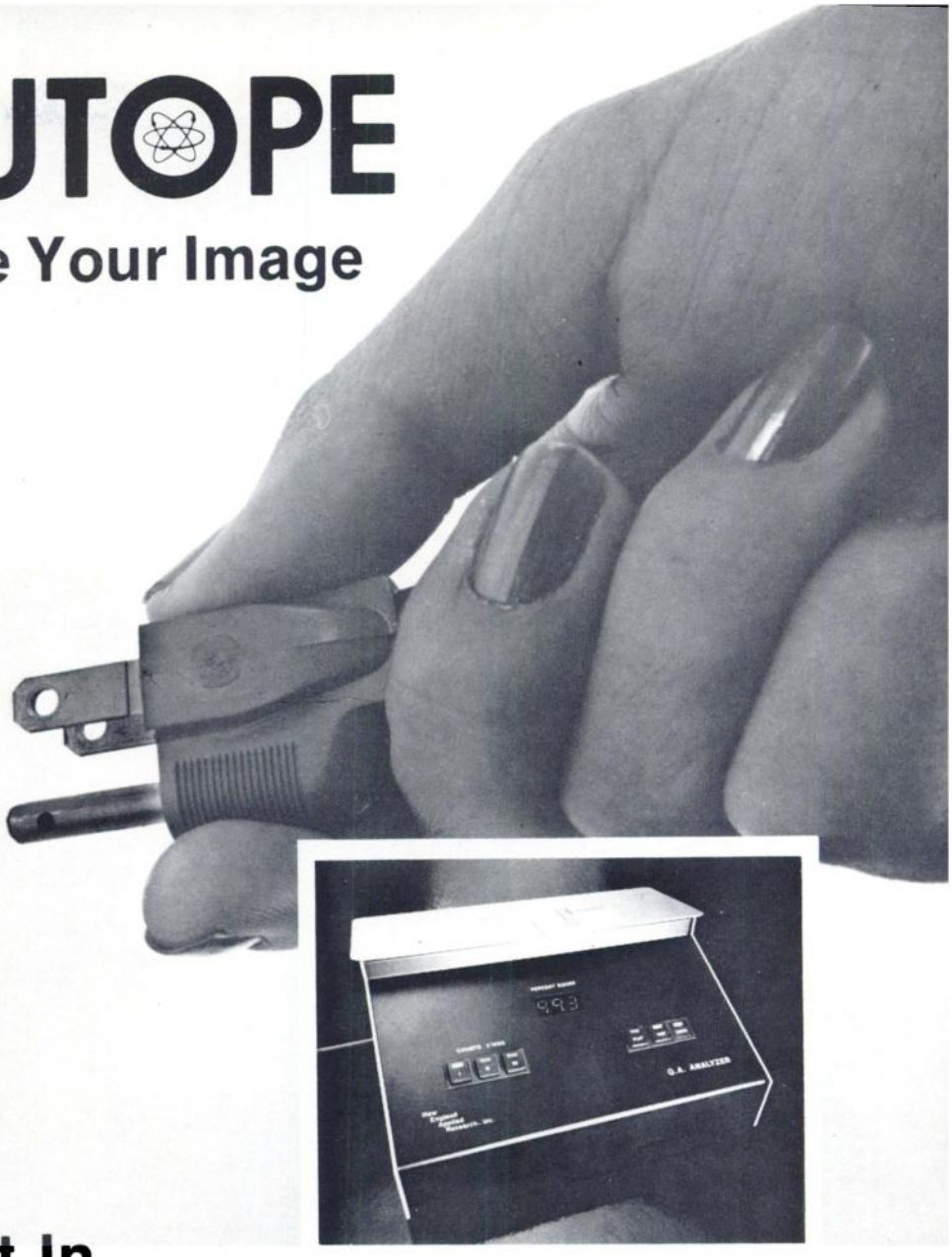
di diagnostic isotopes incorporated

225 Belleville Ave., Bloomfield, N.J. 07003
201-429-7590 • Telex 133393 • Call Toll Free: 800-631-1260

ACCUTOPE

Helps Improve Your Image





Just . . Plug It In

and avoid poor scintigrams, **excessive** patient exposure and time consuming repeats due to incomplete binding.

Simply, with **no** instructions needed. Push start and directly read percent bound with accuracy of better than ± 3%.

And rapidly in less than 30 seconds.

Inexpensively with optional payment out of operating expense budget.

New England
applied research, inc.

15 Tech Circle, Natick, Massachusetts 02760 (617) 655-6998

For Only $2,650

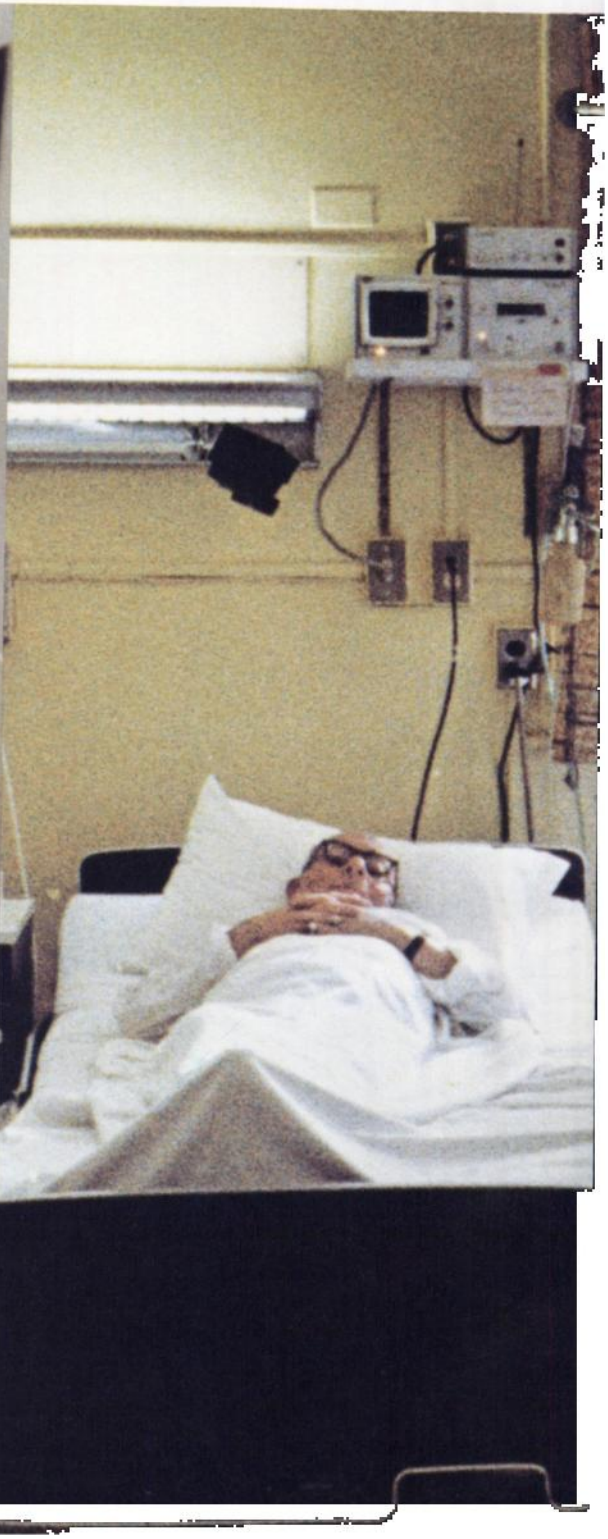
On 30 Day Free Trial Evaluation

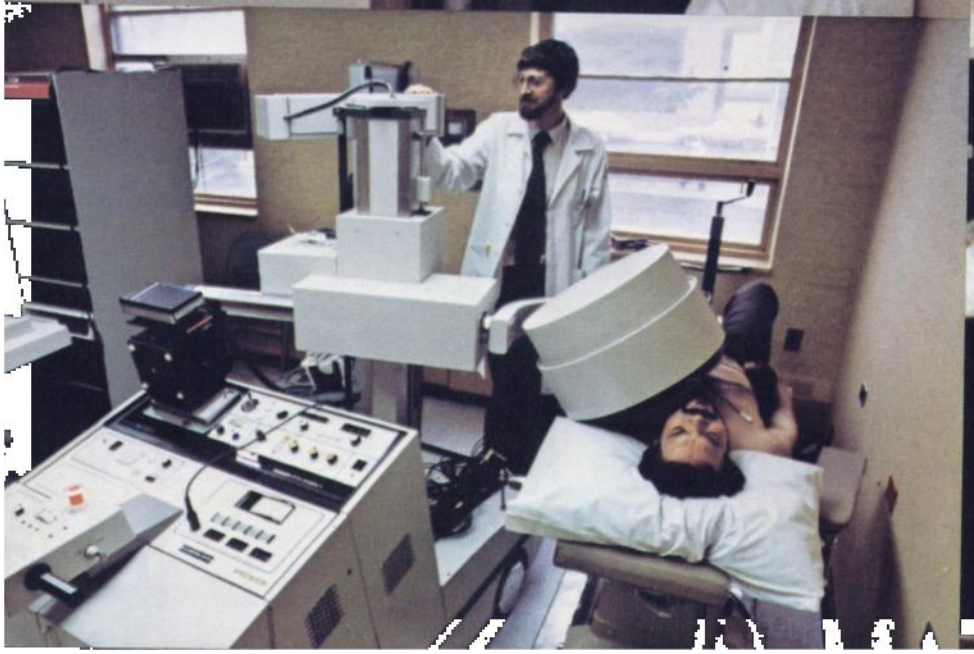
Gentlemen:

Enclosed **is** my purchase order # _____ for your Quality Assurance Analyzer for 30 day evaluation. Subsequently, unless returned by Parcel Post. Invoice:

- ☐ Immediately for $2,650, F.O.B. destination with One Year Warranty (Parts & Labor).
- ☐ Monthly for $750 for four months - $3,000, F.O.B. destination with One Year Warranty (Parts & Labor).

DYNA MO– ALL AROUND PERFORMANCE.





When we first introduced Dyna®Mo, many chose it for its excellent mobility. At 1.5 mph (2.4 km/hr), it brought a complete diagnostic capability to the CCU, or to the most remote parts of the hospital.

Today, DynaMo is succeeding because of its performance in any situation. DynaMo delivers incomparable resolution in the nuclear medicine department or out of it. Our integral Micro Z™ Processor gives it automatic image correction and up to 15% improvement in resolution. With its own lightweight collimators and its unique five-motion detector, it's easy to operate, even in crowded situations. And DynaMo interfaces with any nuclear medicine computer.

Whether you choose it as a prime unit, an all-around second camera, or as a complete department unto itself, you'll find DynaMo stands alone.

For more information, call your Picker representative or write Picker Corporation, 12 Clintonville Road, Northford, CT 06472, or Picker International, 595 Miner Road, Highland Hts., OH 44143.

THE IMAGE OF VALUE.

PICKER®
ONE OF THE CIT COMPANIES

ISOTRON

INVENTORY CONTROL COMPUTER

This small desk top microprocessor computer provides complete inventory control and NRC record keeping functions for the nuclear medicine department.

It is user programmable — you program it to fit your requirements even down to the half-life of the radionuclide so the Isotron never becomes obsolete in the rapidly changing field of nuclear medicine.

The Isotron can keep track of up to 20 different radiopharmaceuticals simultaneously by both radionuclide and chemical form! Updates the quantity of radioactivity every minute to reflect radioactivity decay.

The Isotron performs patient dose/volume calculations.

The Isotron subtracts the administered dose from the decayed activity and provides a running total of remaining activity.

The Isotron performs future time calculations. If it is 8:00 A.M. and you want to draw up a dose for 1:00 P.M. the calculation is simply and rapidly performed.

An optional hard copy data printer is available with the Isotron, known as the Isocord, which provides three copies of all pertinent data for your record keeping.

The Isotron may be used with any manufacturers dosecalibrator.

The Cost? Very reasonable. When combined with the Isocord and our Assayer 1 Dosecalibrator the total price is less than competitive systems with 50% of the capabilities.

RADX gave you the first calculating dosecalibrator, the first printing dosecalibrator, and now the first desk top inventory control computer, the ISOTRON.

For more information or to arrange a demonstration call our toll free number 800-231-1747 (Texas customers call 713-468-9628.)

RADX

P. O. Box 19164 Houston, TX 77024

TAC inc. INTRODUCES

instant kits for complete quality control of radiopharmaceuticals

QUICK - 3 to 5 minutes to complete

EFFICIENT - same technique for all products

ECONOMICAL - more tests for more products

EASY - all solvents, strips and vials color coded

*CHROMATOGRAPHY KIT A 202	For the radiochemical determination of Tc-99m labeled MAA, microspheres, sulfur colloid, polyphosphate, diphosphonate, pyrophosphate, DTPA, and glucoheptonate, phytate, methylene diphosphonate.
*CHROMATOGRAPHY KIT B 303	For the radiochemical determination of Tc-99m labeled DMSA and DHTA.
*CHROMATOGRAPHY KIT B 313	For the radiochemical determination of Tc-99m labeled H.S.A. (double chromatography system).
*ALUMINUM BREAKTHRU KIT C 404	For the determination of aluminum ion concentration in Tc-99m pertechnetate eluate.
*CHROMATOGRAPHY KIT D 505	For the radiochemical determination of I-131, I-125, and I-123 labeled sodium iodide, RISA, iodocholesterol, iodohippurate, and rose bengal.
*CHROMATOGRAPHY KIT E 606	For the radiochemical determination of In-111 DTPA and Y6-169 DTPA.

*Patent applied for.

TAC inc.

Technical Advancement Corporation
P. O. Box 545
Lisle, Illinois 60532
(312) 971-1300

Representative inquiries invited.

Please send me information on the above kits.

Name _____

Title _____

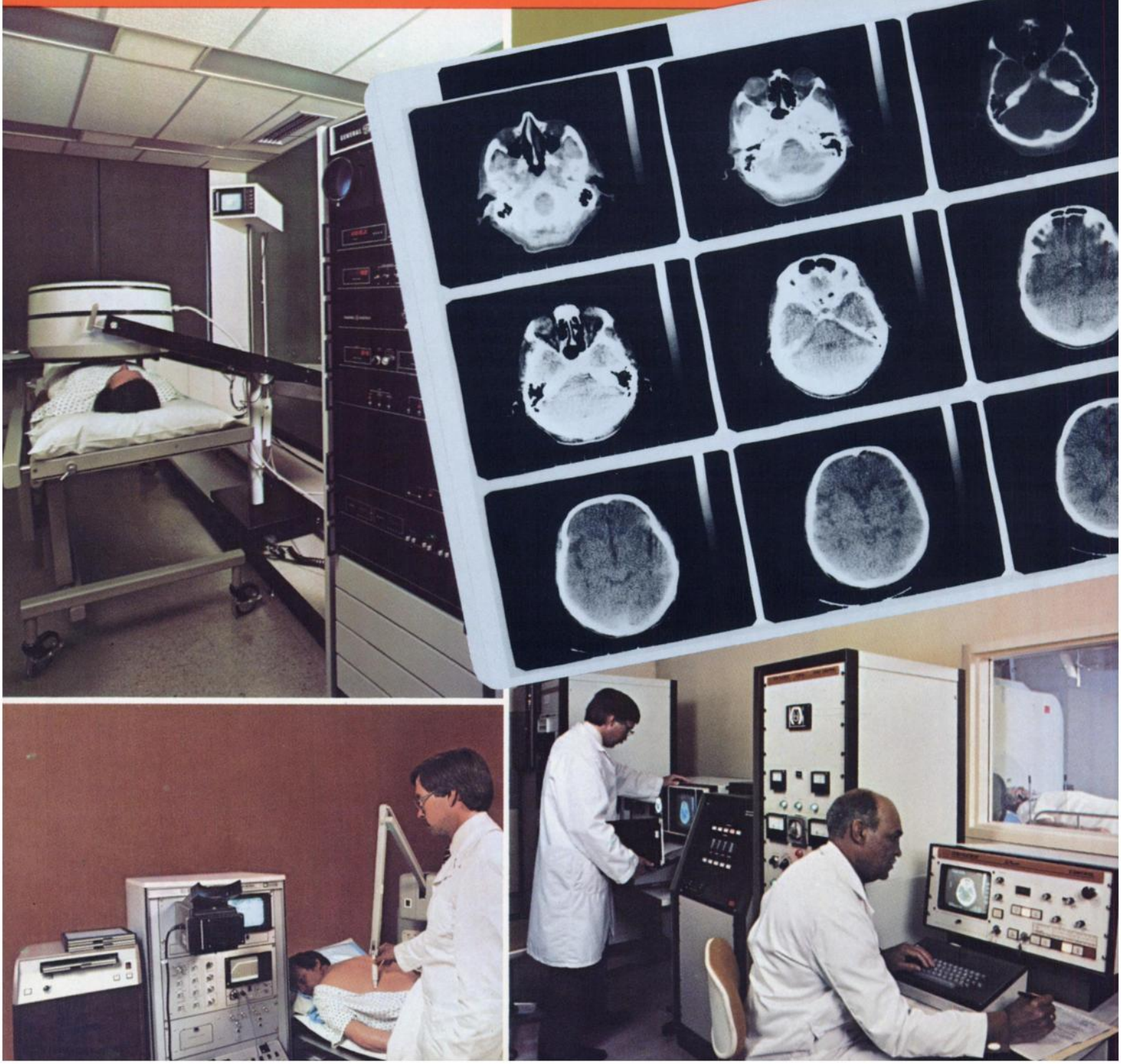
Institution _____

Address _____

City _____

State _____ Zip _____

SCOPIX® CR3 Universal CRT Imaging Film



The one film for all your computed tomography, ultra-sound and nuclear medicine imaging needs...

Up to now, if you wanted good CRT image recording from computed tomography, ultra-sound and nuclear medicine equipment, you may have used several different "special purpose" imaging films.

We started with a conviction that a more convenient universal emulsion film was desirable and possible. The result is Agfa-Gevaert's new SCOPIX CR3 Universal CRT Imaging Film . . . the *one* film that does it *all!*

It is a film matched to the spectral emission of white, blue and green phosphors used for CRT displays and video monitors.

Matched Response To All CRT Displays.

The broad spectral sensitivity of SCOPIX CR3 Film ensures accurate and detailed recording from greyscale CRT and video monitors which use white, blue or green phosphors in their display tubes. It is the "blindness" to green phosphors which causes other films to exhibit higher grain and less definition.

SCOPIX CR3 Film is a single-coated, orthochromatic, medium speed film of relatively high contrast, which gives outstanding recording of CT scan, ultra-sound and nuclear video images.

Sharper Image

Its higher speed allows CRT monitor intensity to be decreased, thus reducing the "halo" effect on the video screen and improving image definition.

SCOPIX CR3 Film is single-coated on GEVAR polyester base, with anti-halation layer. This combination enhances image detail and definition by preventing image parallax. It is suitable for all RP and manual film processing.

With SCOPIX CR3 film . . . you purchase *fewer* film types and *simplify* film inventory; get improved and consistent *quality* and *economy* because *one film does it all!*

For additional information, contact your nearest Agfa-Gevaert Rex Representative or call 914-682-5650.

Image Quality and Support Second to None.

Agfa-Gevaert Rex offers a complete line of superior, sensitometrically dependable X-ray films. All have the finest definition and image quality to help make precise diagnoses. And all offer appropriate speed for the desired technique. Whether it's general purpose radiology, or special procedures such as cinefluorography, angiography or mammography, Agfa-Gevaert has the film to meet your diagnostic needs.

SCOPIX CR3 Film
The *one* film that does it *all*!

Photos courtesy Mt. Sinai Hospital, N.Y.

AGFA-GEVAERT REX, INC.

A Subsidiary of the Agfa-Gevaert Group, the second largest photo products manufacturer in the world.
Headquarters: White Plains, NY 10604 / Tel. 914-682-5650 ■ In Canada contact: Photo Importing Agencies, Ltd. / Exclusive Distributor

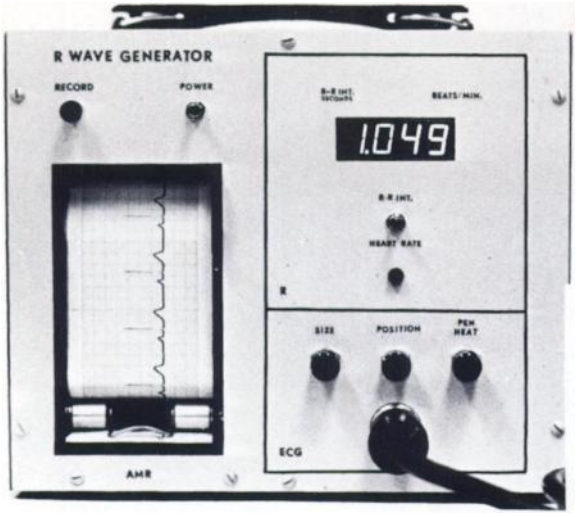
R WAVE GENERATOR

FOR NUCLEAR CARDIOLOGY

THE FINEST NUCLEAR CARDIOLOGY COMPUTER GATE AVAILABLE.
NO FALSE TRIGGERING. RELIABLE PERFORMANCE. INEXPENSIVE.

FEATURES

1). Provides square wave pulse to computers after double discrimination.
2). ECG strip chart recorder.
3). Four digit LED display.
4). Trigger pulse LED.
5). No upper limit on heart rate.



BENEFITS

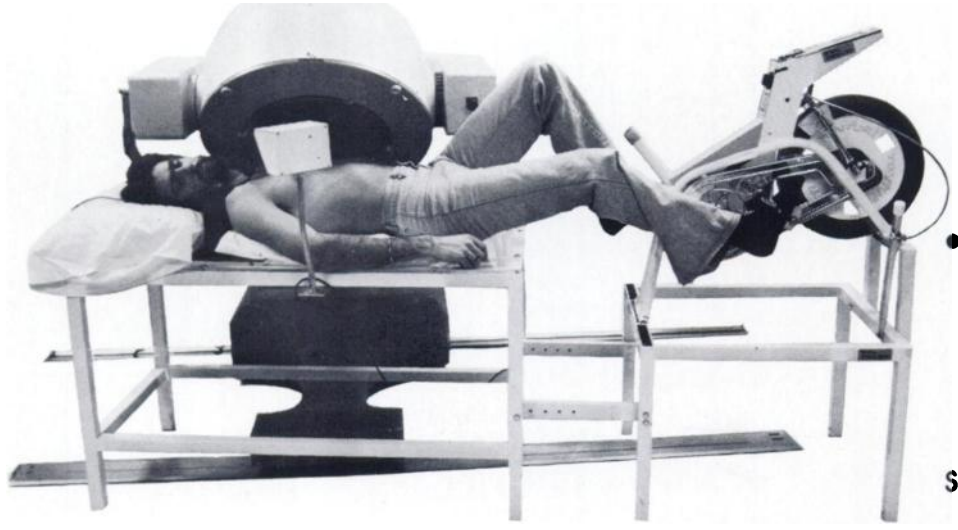
1). Computer is gated only on the R wave, high amplitude T waves are ignored by exclusive discrimination circuits.
2). Provides permanent record of patient ECG; insures proper lead placement.
3). Indicates R-R Interval or heart rate during stress studies
4). Monitors presence of output signal to computer
5). Unlimited stress testing capabilities.

The Instrument Is Available In Four Models.

Model No.	FEATURES
A1	ECG Isolation Amplifier, Heart rate/R-R Int. display, Trigger output, LED trigger pulse indicator and strip chart recorder.
A2	Plug-in unit with all the features of Model A1, but mechanically designed to fit into some mobile cameras.
B	ECG Isolation Amplifier, Heart rate/R-R Int. display, trigger output and LED trigger pulse indicator.
C	ECG Isolation Amplifier, Trigger output and LED trigger pulse indicator.

A M R CORPORATION
P.O. Box 3094 PPS Milford, Conn. 06460
Telephone: (203) 877-1610

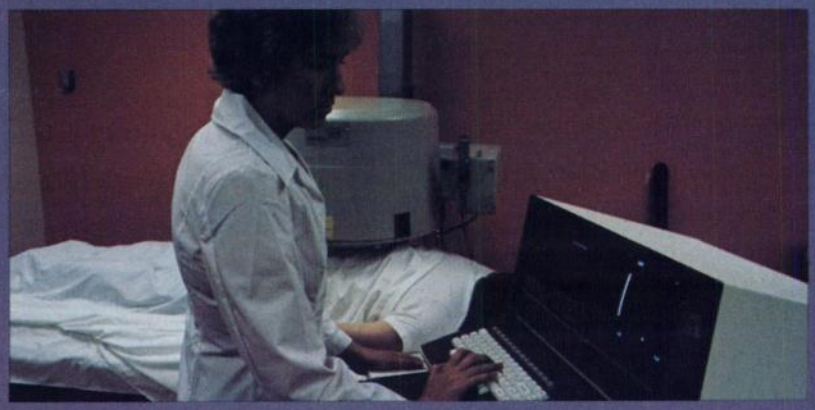
THE LOWEST-PRICED ERGOMETER SYSTEM ON THE MARKET!



- can be used with largest cameras
- smoother pedaling action
- fully adjustable for patient comfort

(patient studies with camera shown, available upon request)

O'NEILL ENTERPRISES 221 FELCH ST. ANN ARBOR MICHIGAN 48103 (313) 973-2335



A² Innovation In Image Processing

The new A²* Single Terminal Systems contribute significant benefits to image processing and display, and a few surprises to our competition.

1. Simplicity
You hardly need an instruction manual. Interactive menus guide you step by step — in English — through patient files, data acquisition, and image processing functions. And, it performs conveniently in your office, camera room, CCU, stress laboratory and conference room — either mobile or stationary.

2. Image Quality
Each A² System offers a 512 X 512 image display matrix with 256 gray shades. In direct comparison of images with competiton, new A² images are superior.

3. Price
Our prices are lower and our systems more deliverable. And, single terminal systems can be upgraded to accommodate multiple users and multiple cameras.

Technical innovations, software excellence, comprehensive user education, and strong customer service have made MDS the leader in image processing technology.

After nine years of continuous leadership, we've renewed our dedication to each of these vital activities.

Please write or call for more information on A² Image Processing Systems.

*A² is a trademark of MDS

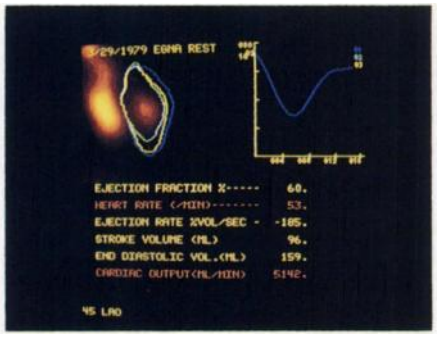
MDS products, hardware and software, are tools for diagnosis and research which do not come in contact with, and cannot cause direct injury to the patient. Refer to the operation manual and instructions accompanying the gamma camera and injectable imaging agent for further information on their use. To ensure proper clinical results, an MDS product must be used under the direction of, and using procedures verified by a qualified physician.

mds
Medical Data Systems

division of Medtronic, Inc.
2311 Green Road
Ann Arbor, Michigan 48105
313 769 9353
Telex 235794

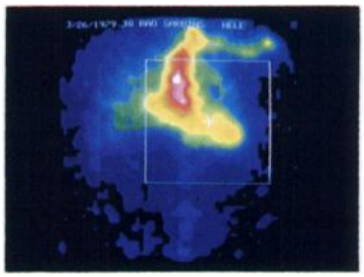
NUCLEAR CARDIOLOGY

It's another way of saying SIMIS™



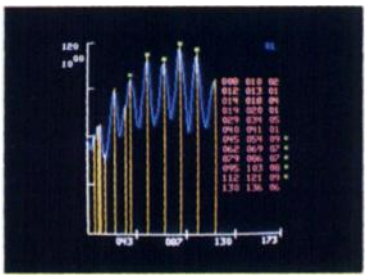
Summarized Cardiac Data.

First Pass Studies.



Composite of cycle with ROI for magnification.

Analysis of left or right ventricular performance, and shunt detection are available using clinically tested MACRO programs requiring a minimum of operator effort.

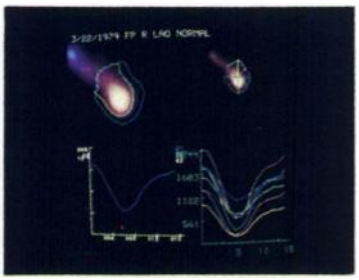


Counts per cycle.

Multiple Gated blood pool imaging

Cardiac cycle.

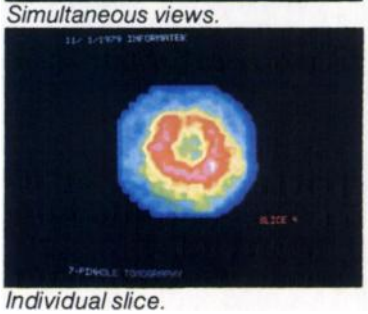
Ventricular volume, ejection fraction, cine angiography. Informatek makes it easy to do, and reproducible with user approved programs.



Wall tracings and volume curves.

Tomography

Simultaneous views.



Individual slice.

The multiple pinhole collimator option makes perfusion tomography possible. The Tomography MACRO program automates the extraction of separate longitudinal myocardial slices from a single study in which multiple views have been simultaneously acquired.

Whatever the camera, whatever the procedure,

SIMIS™ nuclear image processing computers still lead the field in proven versatility, ease of operation, and high resolution display.

informatek

Visit us at Booths 159 and 161 at the 29th Annual Scientific Session of the American College of Cardiology Houston, Texas, March 9–13.

BELGIUM • Mechelsesteenweg, 198 • ANTWERPEN, BELGIQUE • Tel: (031) 160364
BRAZIL • c/o Rhodia S.A. • Avenida Maria Coelho Aguiar, 215 • Bloco B-cx postal 1329 • SAO PAULO • Telex: 01124391
FRANCE • Avenue du Parana • Z.A. de Courtaboeuf • B.P. 81 • 91401 ORSAY FRANCE • Tel: (1)907.6418/Telex: 691628
GERMANY • Informatek Medical Gmbh • Gutleutstrasse 30 • 6000 Frankfurt/Main FDR • Tel: 61126911/Telex: 416085
IRAQ • R.T.C. • 2.1.528 - Al Qahirah • WAZIRYAH-BAGHDAD • IRAQ
JAPAN • 1-1 Nihombashi Odemmacho • 2-chrome, Chuo-Ku • TOKYO, 103 • Phone (03) 662-8151/Telex: J22803
UNITED KINGDOM • Houlton House • 161/166 Fleet Street • LONDON EC 4 A 2 DP
UNITED STATES • 302 Research Drive • Technology Park/Atlanta • NORCROSS, GEORGIA 30092-U.S.A. • Tel: 404-449-0130/Telex: 70-8426

The timeless system

Quality diagnostic images and "planned evolution" make today's MaxiCamera™II the nuclear system of choice. Modular electronics allow you to individualize your system while other options, like whole body capability and data processing meet expanding application needs.

Since emission computed tomography, ECT, is the next logical step in nuclear imaging, GE has developed the MaxiCamera 400T. This simple, economical detection system replaces the gimbal stand with a rotating gantry so the detector can acquire images from numerous angles around the patient.

MaxiCamera II/400T is one-of-a-kind—timeless because you can have an outstanding camera system for routine studies and future tomographic capability. It's "planned evolution" at work for you. Ask your GE representative.

GENERAL ELECTRIC

SOME THINGS JUST SHOULDN'T BE DONE WITHOUT THE RIGHT EQUIPMENT.

An equipment deficiency in the radiopharmacy won't lead to results this dramatic...or this immediate. But radiopharmacy work is another situation in which reliable equipment is no luxury.

WE'VE GOT WHAT YOU'RE MISSING!

What a dependable parachute means to a skydiver, GDD products mean to safety-conscious nuclear pharmacies, hospital radiopharmacies and universities in at least 27 states and the District of Columbia.

We've been around since 1974 and our customers tell us that ours is the finest protective equipment available...for convenience, as well as safety. Our customers also tell us how to keep making our products even better. And we do.

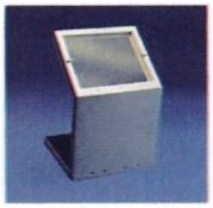
GDD products are engineered and built to the industry's most exacting standards, yet they're the least expensive...because we want to reduce every radiopharmacy worker's radiation exposure to zero. And, with your help, we'll keep getting closer.

Call on us whether you need equipment from our standard line of drawing and holding stations, "Mason shields," syringe containers, storage bins, waste disposals and carrying cases...or have a unique problem for our custom product development team to solve.

GDD GENERAL DESIGN DEVELOPMENT CORPORATION

A Division of SPECTRA MED INC.






Write or call for complete literature today. Of course, there's no obligation.

9920 Trumbull, SE, Box 5127, Albuquerque, NM 87185 (505) 293-4351


UNION CARBIDE
CINTICHEM®
Self photograph of Union Carbide Nuclear Products' 5-megawatt nuclear reactor in operation. The blue glow emitted from the reactor is known as Cerenkov radiation. The reactor is used in research and to produce radiochemicals such as Molybdenum 99 and Xenon 133 for the manufacture of radiopharmaceuticals.
FROM ATOM...


UNION CARBIDE
CINTICHEM®
TSC
TECHNETIUM Tc 99m
SULFUR COLLOID INJECTION
DTPA
HSA
MAA
MDP Kit
...TO IMAGE
UNION CARBIDE NUCLEAR PRODUCTS • P.O. BOX 324 • TUXEDO, NEW YORK 10987
FOR PRODUCT INFORMATION CALL TOLL FREE 800-431-1146. IN N.Y.S. CALL (914) 351-2131 EXT 227

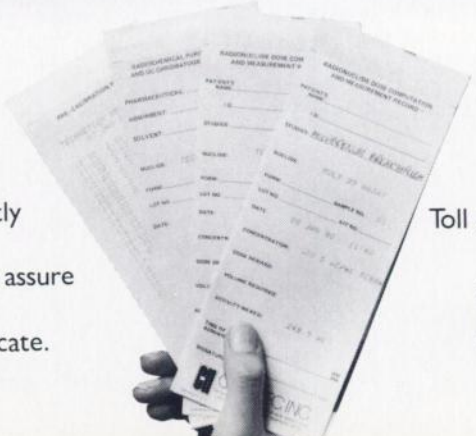
OUR CRC-30 RADIOISOTOPE CALIBRATOR. IT'S PART EINSTEIN, PART FREUD, AND PART GUTENBURG.

The CRC-30 calibrates and computes, analyzes radiochemical purity, and puts it all in print.

Computes radiopharmaceutical dose to assure that activity is exactly as prescribed.

Analyzes imaging preparations to assure radiochemical purity.

Prints permanent records in triplicate. Gives molybdenum assay printout.



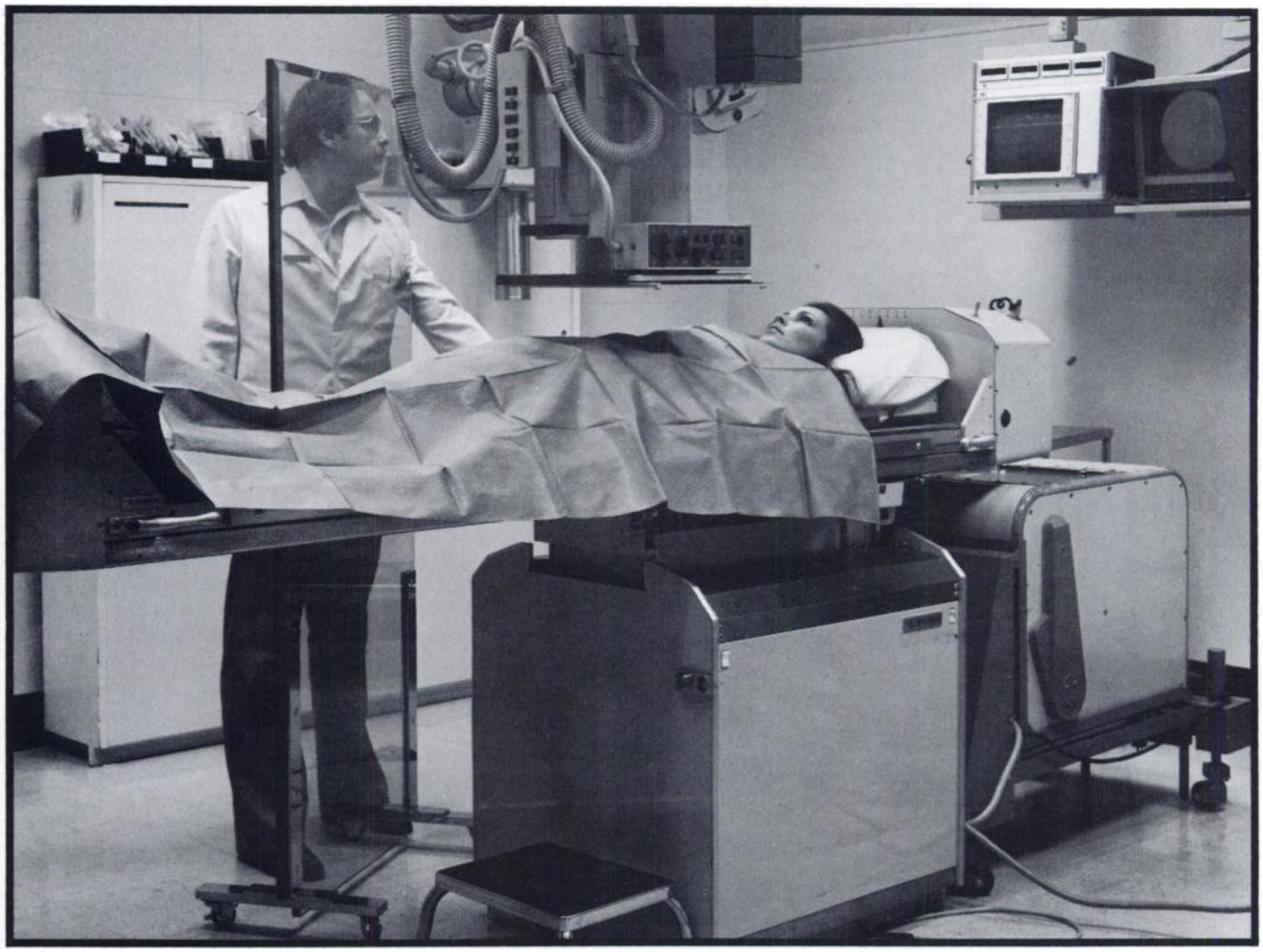
Simplifies compliance with regulatory and hospital accreditation standards.

Capintec, Inc., 136 Summit Avenue, Montvale, NJ 07645. (201) 391-3930. Toll Free (800) 631-2557. TELEX 642375 CAPINTEC MTLE.

CII CAPINTEC

THE MEASURE OF EXCELLENCE

"The Lead Glass Company Now Provides Lead Acrylic."



A portable, shatterproof acrylic shield is now available for much broader "uninhibited-sight" in Radiology and Nuclear Medicine applications. At a lead equivalency of .82mm, this new leaded acrylic provides two to three times the protection of the standard lead apron. At 30" wide and 67" tall and 0.7" thick, full body protection is possible while maintaining total visibility with the patient.

Nuclear Medicine personnel may also use the shield while standing next to the patient during scanning procedures.

Lockdown wheels are included to prevent movement. A strong attractive stainless steel base permits "Easy-Handling" for convenient travel on all types of flooring.

Net weight is 110 lbs.

Nuclear Pacific, Inc.

6701 Sixth Ave. South
Seattle, WA 98108 • Phone (206) 763-2170

1. Shielding eyeglasses **2.** Syringe shields **3.** Vial shields **4.** Radiation dose shields

THE VERSATILE R.E.S. SYSTEM

WITH THE FOLLOWING ADVANTAGES:

- **AVAILABLE FOR ROUTINE USE WITH UP TO 400 MILLICURIES PER VIAL.**
- **20 cc REACTION VIAL.**
- **ONE 5-MINUTE BOIL.**
- **EASY TO USE SYRINGE SYSTEM.**
- **ONE YEAR SHELF LIFE.**
- **CONVENIENT WORK STATION.**
- **EFFICIENT PACKAGE DESIGN REDUCES SHELF SPACE REQUIREMENTS.**

SOLUTION FOR IMAGING NEEDS

- Needs boiling only once for 5 minutes.
- Buffer is injected into the reaction vial immediately after removal from the boiling water bath. No waiting is required.
- Dose vial can be cooled at room temperature, or, for rapid preparation, can be rapidly cooled in a cold environment for sooner use.
- **CINTICHEM® TECHNETIUM 99m TSC** can provide a versatile solution for your imaging needs when **specifically requested** on your prescription if prepared doses are obtained from a radiopharmacy.
- Compared to competitive "convenience packaging", a **CintiChem®** Standing Order allows you to optimize your kit purchases and delivery schedule to meet your individual dosage needs; reduces your shelf space requirements; and continuously assures you of product with the longest expiration date available.

. . . and, of course, all UNION CARBIDE **CINTICHEM® RADIOPHARMACEUTICALS** are manufactured under the exacting procedures and quality control methods developed over 19 years of involvement in Nuclear Medicine.

FOR ORDERING OR ADDITIONAL INFORMATION

CALL TOLL FREE **800-431-1146**

IN N.Y.S. CALL 800-942-1986

indications and usage

Technetium Tc 99m Sulfur Colloid Injection is used as an agent for imaging areas of functioning reticuloendothelial cells in the liver, spleen, and bone marrow.

contraindications

None known.

warnings

The contents of the two syringes, one syringe containing the sodium thiosulfate solution and the second syringe containing the appropriate buffer solution, are intended ***only*** for use in the preparation of the Technetium Tc 99m Sulfur Colloid Injection and ***are not to be directly administered to the patient.***

The contents of the kit are not radioactive. However, after the Sodium Pertechnetate Tc 99m is added, adequate shielding of the final preparation must be maintained.

This radiopharmaceutical preparation should not be administered to children or to patients who are pregnant or during lactation unless the expected benefits to be gained outweigh the potential hazards.

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.

precautions

The components of the kit are sterile and pyrogen-free. It is essential that the user follows the directions carefully and adheres to strict aseptic procedures during preparation of the colloid.

The stability of the colloidal preparation may be decreased in the presence of polyvalent cations, thus resulting in the agglomeration of the individual colloidal particles. These larger particles are likely to be trapped by the pulmonary capillary bed following intravenous injection.

It is recommended that Sodium Pertechnetate Tc 99m solutions containing more than 10 micrograms/ml of aluminum ion not be used for formulation of the Technetium Tc 99m Sulfur Colloid Injection. The Sodium Pertechnetate Tc 99m solution must also be free of any traces of oxidizing agents such as peroxides and hypochlorites.

Technetium Tc 99m Sulfur Colloid Injection is physically unstable and as such the particles will settle with time. Failure to agitate the vial adequately before use may result in non-uniform distribution of radioactivity.

It is also recommended that because of the increasing probability of agglomeration with aging, a batch of Technetium Tc 99m Sulfur Colloid Injection not be used after **six** hours from the time of formulation.

The preparation contains no bacteriostatic preservative.

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. Technetium Tc 99m Sulfur Colloid Injection should be used in pregnant women only when clearly needed.

It is not known whether this drug is excreted in human milk. As a general rule, nursing should not be undertaken while a patient is on a drug since many drugs are excreted in human milk.

Safety and effectiveness in children have not been established.

Technetium Tc 99m Sulfur Colloid Injection, as well as other radioactive drugs, must be handled with care and appropriate safety measures should be used to minimize external radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to patients, consistent with proper patient management.

adverse reactions

Hypersensitivity reactions, including anaphylaxis, have been reported in patients receiving sulfur colloid preparations.

One death and several cases of lung and soft tissue uptake other than RES have been reported in the association with the use of Technetium Tc 99m Sulfur Colloid Injection.

how supplied

The TECHNETIUM 99m SULFUR COLLOID KIT is supplied as a sterile pyrogen-free kit consisting of: five reaction vials, each containing 0.5 ml 1.0 N hydrochloric acid in water; five sterile syringes (labeled "A"), each containing 1.9 mg sodium thiosulfate anhydrous in 1.1 ml aqueous solution; five sterile syringes (labeled "B"), each containing 5.3 mg gelatin in 2.1 ml aqueous buffer solution containing 177 mg sodium acetate anhydrous

storage

Store finished drug at room temperature.

FOR FULL PREPARATION AND PRESCRIBING INFORMATION, SEE PACKAGE INSERT.

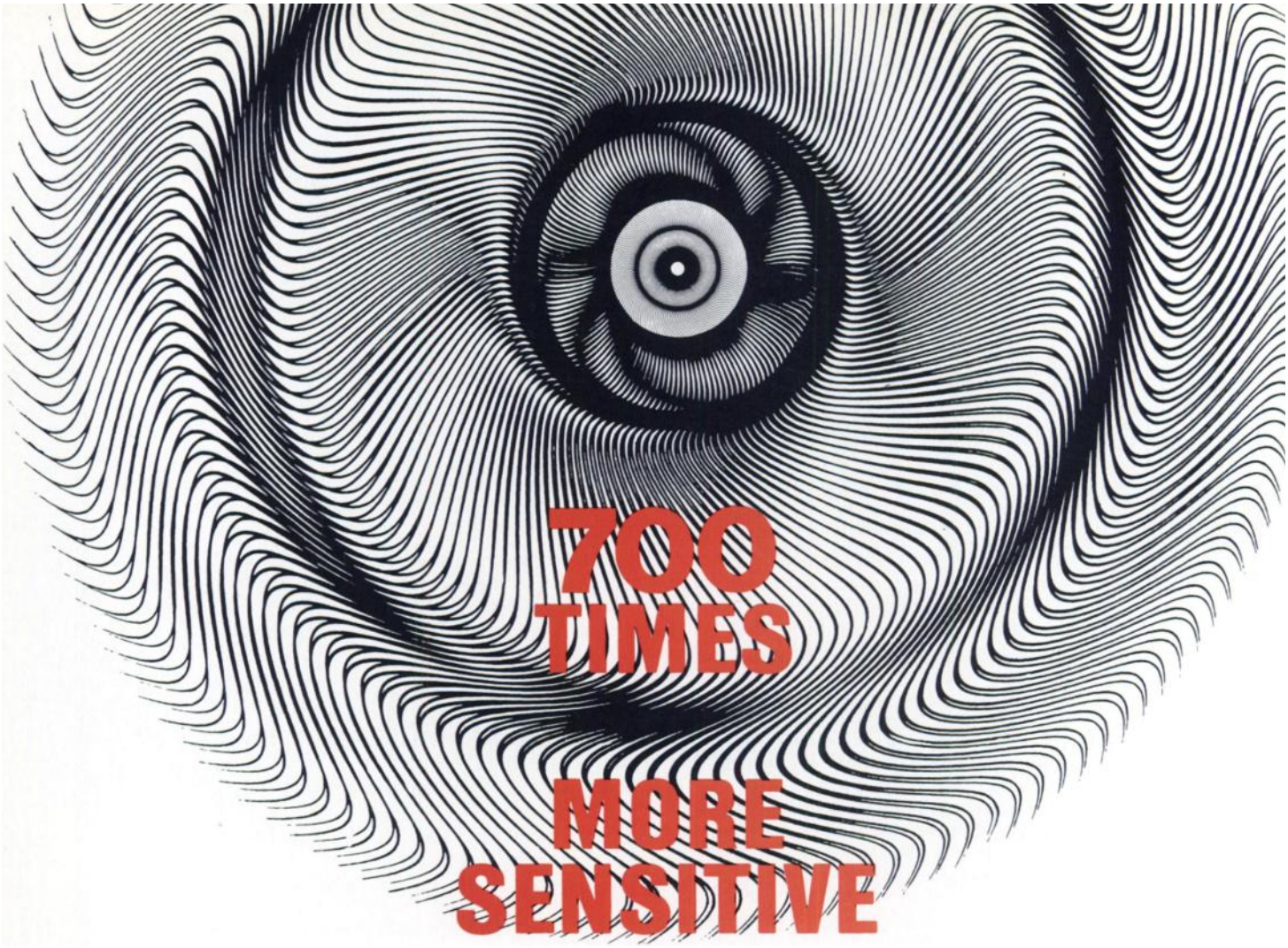
CintiChem®

TECHNETIUM 99m

TSC Kit For The Preparation Of Technetium Tc 99m Sulfur Colloid Injection

UNION CARBIDE **FROM ATOM TO IMAGE**

Union Carbide Corporation • Medical Products Division • Nuclear Products • P.O. Box 324 • Tuxedo, New York 10987



^{125}I METHOTREXATE RADIOIMMUNOASSAY KIT

Our ^{125}I Methotrexate Radioimmunoassay Kit provides a rapid, simple method with an unexcelled level of sensitivity and specificity.

Here is a comparison chart that speaks for itself.

Select the proven DBI ^{125}I MTX-RIA kit to monitor the circulating methotrexate levels in serum, plasma, cerebral spinal fluid or urine.

Also available:

- ^{125}I Doxorubicin-RIA Kit
- ^{125}I Digoxin-Stat-RIA Kit
- ^{125}I Folate Kit
- ^{125}I T_4-One Step-RIA Kit
- ^{125}I T_3-Uptake Kit

Call or write for our low priced introductory kit.

	DBI RADIOIMMUNOASSAY	IMMUNOENZYME ASSAY
STAT INCUBATION:	15 minutes at 37°C	1 minute
SENSITIVITY:	0.0004 μM (700 times more sensitive)	0.3 μM
EXOGENOUS INTERFERENCE:	None	Lypemic Icterus Hemolysis
STANDARDS SUPPLIED:	7	6
PRICE:	*57½ cents per tube	$1.86 per tube

*In units of 200

Diagnostic Biochemistry Inc.
10457-H Roselle Street, San Diego, CA 92121
Tel. (714) 452-0950

SPECIAL OFFER (see box below)

Announcing...
BOOKS FROM SNM

Just Published!

NUCLEAR MEDICINE REVIEW SYLLABUS Peter T. Kirchner, M.D., Editor

Designed to help physicians bring themselves up to date in all areas of clinical practice in nuclear medicine, this brand new, 619 page book provides a thorough update on methodological advances that have occurred in nuclear medicine since the early 1970's.

The *Nuclear Medicine Review Syllabus* has chapters titled: Radiopharmacology; Instrumentation; Radiation Effects and Radiation Protection; Cardiovascular; Central Nervous System; Endocrinology; Gastroenterology; Genito-Urinary System; Hematology-Oncology; Pulmonary; Radioassay; and Skeletal System.

The clear prose of each of the book's 12 chapters describes advances and outlines current practice, with a detailed bibliography at the end of each chapter serving as a guide to additional information. A 32-page index makes the *Nuclear Medicine Review Syllabus* 'wealth of information instantly accessible. Individuals seeking a vehicle for final review prior to taking a certification (or recertification) examination will find the *Nuclear Medicine Review Syllabus* particularly valuable.

Soft cover, 619 pages, $30.00 plus $2.50 postage and handling.

RADIOPHARMACEUTICALS II: Proceedings of the Second International Symposium on Radiopharmaceuticals.

This 867 page, copiously illustrated, large format volume has chapters titled: Quality Control; Organic Radiopharmaceuticals; Inorganic Radiopharmaceuticals; Functional Imaging; Radioimmunoassay; Oncology; Hematology; Pharmacokinetics; Renal; Cardiopulmonary System; RES, Biliary; Skeletal; Thyroid; Pancreas, Prostate, and Adrenals; and Radionuclide Production. For each of these chapters, *Radiophrarmaceuticals II* has an introductory paper summarizing the state of the science in the field. The introductory papers are supplemented by papers describing current research. Also included in the book are papers from a panel discussion entitled "International Regulatory Affairs Relating to Pharmaceuticals," and excerpts from the Keynote Address given by former AEC Chairman and now Governor of the State of Washington, Dixy Lee Ray.

Soft cover, 867 pages,
$40.00 plus $2.50 for postage and handling.

RADIOPHARMACEUTICALS, Gopal Subramanian, Ph.D. et al, Editors.
Hardcover, 555 pages,
$30.00 plus $2.50 postage and handling.

THE HERITAGE OF NUCLEAR MEDICINE
Soft cover, 185 pages,
$14.50 plus $2.50 postage and handling.

NUCLEAR MEDICINE SCIENCE SYLLABUS
Loose-leaf plus binder, 169 pages,
$30.00 plus $2.50 postage and handling.

NUCLEAR CARDIOLOGY: Selected Computer Aspects
Soft cover, 213 pages,
$12.50 plus $2.50 postage and handling.

SPECIAL OFFER! Purchasers of *Radiopharmaceuticals II* may order *Radiopharmaceuticals* for only $10.00 more. A $20.00 savings! (Total cost: $50.00 plus $5.00 postage and handling.) Just check off "Radiopharmaceuticals Special Offer" on the coupon below.

MAIL TO: Book Order Dept. Society of Nuclear Medicine, 475 Park Avenue South, New York, NY 10016.

_____Nuclear Medicine Review Syllabus ($30.00)
_____Radiopharmaceuticals II ($40.00)
_____Radiopharmaceuticals ($30.00)
_____Radiopharmaceuticals SPECIAL OFFER (2 books—$50.00)
_____The Heritage of Nuclear Medicine ($14.50)
_____Nuclear Medicine Science Syllabus ($30.00)
_____Nuclear Cardiology: Selected Computer Aspects ($12.50)
_____POSTAGE AND HANDLING ($2.50 per book)
_____TOTAL ENCLOSED.

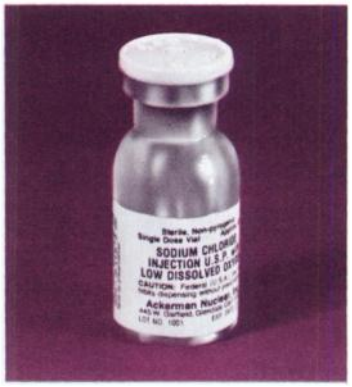
SEND TO:
NAME_____
ADDRESS_____
_____
CITY_____STATE_____ZIP_____

Check or purchase order must accompany all orders. Please make checks payable to Society of Nuclear Medicine, Inc.
U.S. funds only, please.

THE OBVIOUS SOLUTION

Low* Dissolved Oxygen Non-preservative normal saline U.S.P.

Designed with Nuclear Medicine in mind, Low Dissolved Oxygen, non-preservative, normal saline for routine use is now available from Ackerman Nuclear, Inc.



- ELUTION:
  Use for eluting Technetium-99m generators.
- DILUTION:
  Use for diluting high specific concentrations of Technetium-99m.

SODIUM CHLORIDE INJECTION U.S.P.
with LOW DISSOLVED OXYGEN
pH 4.5 to 7.0

DESCRIPTION:
SODIUM CHLORIDE INJECTION U.S.P. with LOW DISSOLVED OXYGEN is a sterile isotonic solution of sodium chloride in water for injection. It contains no antimicrobial agent. It contains 0.9% sodium chloride and is packaged in single dose vials. The osmolarity is 300 mOsm/1, the dissolved oxygen content is less than 5 ppm.

INDICATIONS:
SODIUM CHLORIDE INJECTION U.S.P. with LOW DISSOLVED OXYGEN is indicated for eluting, preparing and/or diluting pharmaceuticals that specify oxidants may cause adverse effects on the final product. SODIUM CHLORIDE INJECTION U.S.P. with LOW DISSOLVED OXYGEN is also used as a fluid and electrolyte replenisher or as an irrigating solution.

WARNING:
Excessive amounts of sodium chloride by any route may cause hypopotassemia and acidosis. Excessive amounts by the parental route may precipitate congestive heart failure and acute pulmonary edema, especially in patients with cardiovasular disease, and in patients receiving corticosteroids or corticotropin drugs that may give rise to sodium retention. No antimicrobial agent has been added.

PRECAUTIONS:
Unused amounts should be discarded immediately following withdrawal of any portion of the contents.

HOW SUPPLIED:

Catalog No.	Product	Packaging
S-25	SODIUM CHLORIDE INJECTION U.S.P. with LOW DISSOLVED OXYGEN	25/10 ml vials

Each 10 ml single dose vial contains approximately 6 ml. Each ml contains 9 mg sodium chloride providing 0.154 mEq each of sodium and chloride ions. Total osmolarity 300 mOsm/1; pH between 4.5 and 7.0. Dissolved oxygen content less than 5 ppm. Contains no preservatives.

ACKERMAN NUCLEAR, INC.
445 W. Garfield Avenue
Glendale, Calif. 91204

1/78

Decrease the amount of oxygen you add daily and reduce the effect of one more variable from your radiopharmacy. Use Low Dissolved Oxygen saline when preparing kits containing any stannous tin products.

*less than 5 ppm

For additional information call or write to:

ACKERMAN NUCLEAR, INC.
Pharmaceuticals for Nuclear Medicine
445 W. Garfield Ave.
Glendale, CA 91204, USA
(213) 240-8555

Check your image against these

Our sources have achieved a reputation in nuclear medicine for outstanding quality, safety, reliability and convenience in use.

Sealed 'flood' sources

Long lived nuclide sources simulating ^{99m}Tc, ^{201}Tl, ^{113m}In and ^{131}I are produced in four diameters ranging from 330 mm to 600 mm for checking the uniformity and resolution of conventional and wide field-of-view gamma cameras, and for transmission imaging. The sources are made of active plastic in an anodized aluminium casing with a maximum variation in activity of ±1% over the entire active area. Each source is supplied in a shielded storage case.

Anatomical marker sources

Pen point sources have a 1 mm diameter bead of ^{57}Co (100 µCi) sealed in the tip of a pen shaped holder with a brass shield for the active end.

Flexible sources contain ^{57}Co (100 µCi) which is dispersed in an inner core of active plastic, sealed in an inactive PVC tube closed by aluminium caps.

Spot marker sources are available containing ^{57}Co or ^{133}Ba (10 or 100 µCi). Features include a welded plastic capsule, point source geometry with a 1 mm visible active bead, and colour coding for quick identification of nuclide and activity.

γ-counter checking sources

Both rod and tube sources containing various nuclides for checking energy linearity and consistency of γ-counters are available. For example ^{129}I to simulate ^{125}I, plus a selection of nuclides covering the energy range 30–1800 keV.

Dose calibrator checking sources

^{137}Cs and ^{226}Ra sources for routine checking of isotope assay calibrators.

The Radiochemical Centre Amersham

Further information is available on request.

The Radiochemical Centre Limited, Amersham, England. Telephone 024-04-4444

In the USA and Canada: Amersham Corporation, Illinois 60005. Telephone 312/593-6300 and 800/323-6995 (TOLL FREE)

In W. Germany: Amersham Buchler & Co., KG Braunschweig. Telephone 05307-4691

NEW SNM AUDIOVISUALS
*Featuring...*NUCLEAR CARDIOLOGY

Each audiovisual kit come complete with expert narration and carefully selected supporting visual materials. Consisting of 35 mm color slides and standard audio cassette, each kit forms a complete self-teaching package. Suitable for individual or group instruction, these units offer active learner participation to reinforce the most important concepts. Each kit has been prepared by an authority in the field, making expert instruction available to you in your home, office or hospital.

SNM Audiovisuals cost $55.00 each for members of the Society of Nuclear Medicine, $75.00 each for nonmembers. **There is a 10% discount if all six nuclear cardiology units are ordered at once.** A complete list of SNM Audiovisuals is available on request.

- ■SI-18 **Basic Concepts in Cardiac Anatomy and Physiology**
  by Glen W. Hamilton, M.D.
- ■SI-19 **The Measurement of Ejection Fraction**
  by William Ashburn, M.D.
- ■SI-20 **Intracardiac Shunts and Cardiac Output**
  by William Ashburn, M.D.
- ■SI-21 **Perfusion Studies of the Ischemic Heart**
  by Glen W. Hamilton, M.D.
- ■SI-22 **Detection of Acute Myocardial Infarction**
  by B. Leonard Holman, M.D.
- ■SI-23 **Instrumentation for Nuclear Cardiology**
  by Trevor D. Cradduck, Ph.D.

Also in Nuclear Cardiology...

Nuclear Cardiology: Selected Computer Aspects. This volume contains the proceedings of a symposium sponsored by the Computer Council of the Society of Nuclear Medicine (Atlanta, 1978). Topics covered include: gated equilibrium and first pass techniques; thallium-201 image processing and display; and shunt detection, modeling, and special techniques. Soft cover, 213 pages. **$12.50, plus $2.50 postage and handling.**

Special: An Audiovisual For Patients

■SI-24 **Your Nuclear Medicine Examination**

COSTS FOR SI-24:
(Slides and Tape)
$95.00 for members and nonmembers
(¾ Inch Videocassette)
$95.00 for members
$110.00 for nonmembers

MAIL TO: Book Order Dept, Society of Nuclear Medicine, 475 Park Avenue South, New York, NY 10016.

Please send the following Audiovisual units. (Check units desired.)

____SI-18 ____SI-20 ____SI-22
____SI-19 ____SI-21 ____SI-23

$55.00 each for members; $75.00 each for nonmembers.

COSTS FOR SI-24:
(Slides and Tape)
$95.00 for members and nonmembers
(¾ Inch Videocassette)
$95.00 for members
$110.00 for nonmembers

Total_____Audiovisual units @_____each.

____Nuclear Cardiology: Selected Computer Aspects. $12.50, plus $2.50 postage and handling..

Total $_____

Deduct 10% if ordering all six units $_____

Total enclosed $_____

SEND TO:

NAME _____

ADDRESS _____

_____

_____ ZIP_____

□ Please send the complete list of SNM Audiovisuals.

□ I plan to use the Audiovisual units on a machine that **automatically** advances the slides. Send one side only audio tapes.

Check or purchase order must accompany all orders. Make checks payable to the Society of Nuclear Medicine, Inc.
U.S. funds only, please.

The Mallinckrodt Ultra-TechneKow® FM (Technetium Tc 99m) Generator.

Designed with people in mind.

The **Ultra-TechneKow FM** Generator was designed to bring you the best balance between safety, ease of operation and dependable yield efficiency. Over 15 years of experience and evolutionary progress is reflected in this state-of-the-art generator system.

Easier to lift and move.

Significant weight reductions have been made by changing the internal column shield design. Weight is down 44% on small units and 24% on large units. A large handle is on top for easier lifting and better maneuverability.

Improved shielding.

The auxiliary shield provides additional protection from radiation on all sides and the top. Radiation profile information is available from your Mallinckrodt representative.

Dependable yield efficiency.

While fluctuations in yield efficiency can be expected, the **Ultra-TechneKow FM** Generator is noted for producing con-

Backed by the Mallinckrodt distribution and service team.

In a recent independent survey of 400 nuclear medicine departments, Mallinckrodt ranked first in delivery and service.* Because of this record of being on time and on hand when you need special assistance, we believe you can count on Mallinckrodt having the best and most complete technetium delivery "system" in the world.

*Data on file, Mallinckrodt, Inc.

People: the most important part of our system.

Ultra-TechneKow® FM (Technetium Tc 99m) Generator

Mallinckrodt®

The Mallinckrodt Ultra-TechneKow® FM (Technetium Tc 99m) Generator. Designed with people in mind.

Ultra-TechneKow® FM
(Technetium Tc-99m Generator)
For the Production of Sodium Pertechnetate Tc 99m

DESCRIPTION

The **Ultra-TechneKow** FM Generator is prepared with fission-produced molybdenum-99. This generator provides a closed system for the production of sterile metastable technetium-99m, which is produced by the decay of molybdenum-99. Sterile, pyrogen-free isotonic solutions of Sodium Pertechnetate Tc 99m can be obtained conveniently by periodic aseptic elution of the generators. These solutions should be crystal clear.

The generator consists of a sealed glass chamber containing specially processed alumina. This treated alumina has a high absorption capacity for molybdenum-99 and a low affinity for technetium-99m. As a result, elution of the generator yields a solution of technetium-99m containing negligible amounts of molybdenum-99.

ACTIONS

The pertechnetate ion distributes in the body similarly to the iodide ion but is not organified when trapped in the thyroid gland. Pertechnetate tends to accumulate in intracranial lesions with excessive neovascularity or an altered blood-brain barrier. It also concentrates in thyroid gland, salivary glands, stomach and choroid plexus. After intravascular administration it remains in the circulatory system for sufficient time to permit blood pool, organ perfusions, and major vessel studies. It gradually equilibrates with the extracellular space. A fraction is promptly excreted via the kidneys.

INDICATIONS

Sodium pertechnetate Tc-99m is used for brain imaging, thyroid imaging, salivary gland imaging, placenta localization and blood pool imaging.

CONTRAINDICATIONS

None.

WARNINGS

This radiopharmaceutical should not be administered to patients who are pregnant or during lactation unless the information to be gained outweighs the potential hazards.

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.

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

PRECAUTIONS

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

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

ADVERSE REACTIONS

None.

DOSAGE AND ADMINISTRATION

Sodium pertechnetate Tc-99m is usually administered by intravascular injection but can be given orally. The dosage employed varies with each diagnostic procedure.

The suggested dose range employed for various diagnostic indications in the average patient (70 kg) is:

brain imaging:	10 to 20 mCi
thyroid gland imaging:	1 to 10 mCi
salivary gland imaging:	1 to 5 mCi
placenta localization:	1 to 3 mCi
blood pool imaging:	10 to 20 mCi

NOTE: Up to 1 gram of reagent grade potassium perchlorate in a suitable base or capsule may be given orally prior to administration of sodium pertechnetate Tc-99m injection for brain imaging, placenta localization and blood pool imaging.

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

HOW SUPPLIED

The **Ultra-TechneKow FM** (Technetium Tc 99m) Generators contain the following amount of molybdenum-99 at the time of calibration stated on the label.

Catalog Number	
100	0.25 curies
101	0.50 curies
106	0.75 curies
102	1.0 curies
103	1.5 curies
104	2.0 curies
105	2.5 curies
107	3.0 curies

Each generator is supplied with the following components for the elution of the generator.

- 6—Sterile, graduated, evacuated collecting vials
- 6—Sterile Luer-Lock needles with plastic covers
- 6—Pressure-sensitive "Caution—Radioactive Material" collecting vial labels
- 6—Pressure-sensitive radioassay data labels for lead dispensing shield

EVACUATED COLLECTING VIALS. Collecting vials are available on request in 5, 10, 20 and 30 milliliter sizes.

Mallinckrodt, Inc.
P.O. Box 5840
St. Louis, MO 63134

Mallinckrodt® NUCLEAR
RADIOPHARMACEUTICALS

Back to Basics!

The Assayer 1 by Radx

The never ending struggle for product popularity often leads a manufacturer to add gadgets. It's called "one-upmanship." We sometimes lose sight of what YOU, the user, wants.

By customer demand, Radx has gone "Back to Basics" and developed the Assayer 1, a simple dosecalibrator, a reliable dose-calibrator, an economical dosecalibrator.

The return to basics does not require a return to the 1960's technology. The Assayer 1 is microprocessor controlled, totally solid state, with a method of isotope selection way ahead of its time (an optical scanner) which is so precise, reproducible, and reliable that it will soon be copied.

It is not a gadget, it calibrates doses accurately, with precision and unprecedented reliability. It's the Assayer 1—$2950.

Call today for the last dosecalibrator you'll ever own.

RADX

P.O. Box 19164 • Houston, Texas 77024 • (713) 468-9628

PLACEMENT

POSITIONS OPEN

A TWO YEAR TRAINING PROGRAM in nuclear medicine leading to certification by the American Board of Nuclear Medicine or one year training program leading to certification in nuclear radiology by the American Board of Radiology is offered in an AMA approved integrated program offered by Vanderbilt University Hospital and the Veteran's Administration Hospital in Nashville, Tennessee. Five full-time board certified nuclear medicine physicians and eight full-time nuclear medicine Ph.D.'s participate in the didactic as well as clinical experience in the program. Equipment includes three large field scintillation cameras, three small field scintillation cameras, the PhoCon tomographic scanner, a solid state scanning tomographic camera, a proportional wire chamber, a fluorescent scanner, a portable camera and five computer systems. The clinical experience includes a complete spectrum of all imaging procedures for adults as well as the pediatric population. Particular emphasis is placed on nuclear cardiology, renal evaluation, pulmonary function studies and tumor evaluation. The program includes rotations through CT and ultrasound and has heavy emphasis on correlation between these two modalities and nuclear medicine procedures. A complete experience in a large radioimmunoassay laboratory and radiopharmacy is included. Requests for further information should be directed to F. David Rollo, M.D., Ph.D., Director, Division of Nuclear Medicine, Department of Radiology and Radiological Sciences, Vanderbilt University Hospital, Nashville, Tennessee 37232.

MANAGER'S POSITION AVAILABLE IN Department of Nuclear Medicine for individual who is a C.N.M.T. with proven background in management expertise. Department consists of a physician and seven (7) Nuclear Medicine Technologists. Salary negotiable. Excellent fringe benefits and Department Head Status. Our 370 bed Community General Hospital is situated in scenic Northcentral PA. Send resume to: Jack D. Cain, Director of Personnel, The Williamsport Hospital, 777 Rural Avenue, Williamsport, PA 17701, (717) 322-7861, Ext. 3826. Equal Opportunity Employer.

ASSISTANT CHIEF, NUCLEAR MEDICINE Service. The Minneapolis Veterans Administration Medical Center seeks candidate for the position of Assistant Chief, Nuclear Medicine Service effective July 1,, 1980. Requirements include certification by the ABNM, a strong patient orientation and expertise in all phases of clinical nuclear medicine, including imaging, radioassay and internal radionulcide therapy. In addition, the Assistant Chief, Nuclear Medicine Service will have specific responsibilities in research and education. Applications from all qualified candidates are welcome. Inquiries, including a curriculum vitae and an autobiographical letter, should be sent to: Rex B. Shafer, M.D., Chief, Nuclear Medicine Service (115), Veterans Administration Medical Center, 54th Street & 48th Avenue South, Minneapolis, MN. 55417. An Equal Opportunity Employer.

PATHOLOGY-NUCLEAR MEDICINE Physician being sought to join practice in a 400 Bed community hospital. Send Resume to William M. Bridger, M.D. Baptist Medical Center, 2105 East South Boulevard, Montgomery, Alabama 36116.

CONFIDENTIAL SERVICE NATIONwide. We are a search firm dealing nationwide in the Health Care Industry. All Fees Paid By Employer. Forward resume with salary requirements and location preferences to BMI, Health Care Division, P.O. Box 6457, Columbia, S.C. 29260, (803) 787-8710.

DIRECTOR RADIOLOGY/NUCLEAR medicine/ultrasound. Family living in beautiful mountains of western Pa. Recreational lakes nearby. Wide range of summer and winter sports. 255-bed hospital (160 acute, 95 SNF). F.C. Powell, Administrator/CEO, Bradford Hospital, 116 Interstate Parkway, Bradford, Pa., 16701. (814) 368-4143.

EARL K. LONG MEMORIAL HOSPITAL needs qualified Radioisotope Technologists who are registered or eligible for registry. A 250 bed teaching State Hospital with benefits of State employment. Straight day shift with some call time; I & II levels available. Contact: Frank West, Radiology, 5825 Airline Hwy., Baton Rouge, LA. 70805. (504) 356-3361, ext. 216. An EEO Employer.

RADIOPHARMACIST. THE SCHOOL OF Pharmacy at the University of Maryland is seeking an experienced radiopharmacist to supervise its central nuclear pharmacy program. The position will involve administration of its central nuclear pharmacy, teaching at the undergraduate and graduate levels, and research in radiopharmaceutical development. Salary and academic rank will be commensurate with experience. Please reply with a curriculum vitae and three letters of recommendation to Larry A. Spitznagle, Ph.D., Department of Medicinal Chemistry and Pharmacognosy, University of Maryland, School of Pharmacy, 636 W. Lombard Street, Baltimore, MD 21201. An affirmative action equal opportunity employer.

A NUCLEAR MEDICINE PHYSICIAN IS being sought for a challenging and rewarding position in an active department in a 411 bed community hospital affiliated with the University of Southern California. Computer experience is desired. Please address inquiries and curriculum vitaes to: Leonard A. Swanson, M.D., Department of Nuclear Medicine, Hospital of the Good Samaritan, 616 South Witmer Street, Los Angeles, California 90017.

ACADEMIC POSITION AT THE ASSOciate or Assistant Professor level available in the Nuclear Radiology Division of the Department of Radiology at the University of Texas Medical School at Houston. Certification in Radiology and Nuclear Medicine, or in Radiology with Special Competence in Nuclear Radiology is required. Applicant should have a sincere interest and a performance record in relevant clinical or basic nuclear research. Please send curriculum vitae to Robert W. McConnell, M.D., Director, Division of Nuclear Radiology, Department of Radiology, The University of Texas Medical School at Houston, 6431 Fannin Street, Houston, Texas 77030.

NUCLEAR MEDICINE TECHNOLOGIST Graduate of an AMA approved School of Nuclear Medicine Technology. Registered, or eligible to write, NMTCB, ARRT(N) or ASCP(N) examination. Full time position in modern 565 bed teaching hospital, State of ART instrumentation. Excellent salary, fringe benefits. Send resume to: Noly Martinez, M.D., Director, Nuclear Medicine Section, Mercy Hospital & Medical Center, Chicago, Illinois 60616.

NUCLEAR MEDICINE TECHNOLOGIST needed for a first shift position in a progressive 300 bed hospital. Includes rotations through Cardiovascular nuclear medicine, In-vitro and In-vivo; all areas are fully computerized. Must be registered or registry eligible. Competitive salary and benefits. Send resume to: Personnel Department, Deaconess Hospital, 620 N. 19th Street, Milwaukee, WI. 53233. No financial assistance available for interviewing or relocation costs. An Equal Opportunity Employer.

NUCLEAR MEDICINE TECHNOLOGIST. Seeking an independent individual who could manage a mobile unit for a Shared Service Center, 3 hospitals. $14-$20,000. Call or write: Medical Careers, 601 Brookdale Towers, 2810-57th Avenue North, Minneapolis, MN 55430. (612) 542-1119.

FLORIDA MEDICAL CENTER, A 400-bed acute care facility has positions available in its progressive nuclear medicine department. Equipment includes SEARLE LFOV, LFM, PHO CON, PG-4 CAMERA and a TRANS AXII SCANNER. Cardiac and computer experience recommended but not essential. Excellent salary and benefits. Inquire to Director of Personnel, Florida Medical Center Hospital, 5000 West Oakland Park Boulevard, Fort Lauderdale, Florida 33313. (305) 735-6000.

NUCLEAR MEDICINE TECHNOLOGIST Position available at VA Medical Center, Little Rock, Arkansas. Affiliated with University of Arkansas College of Medicine. Position requires experience in radioimmunoassay work, imaging, dynamic studies and ultrasound. Bachelor's degree in chemistry, physics, mathematics, health or biological science, including courses in Nuclear Medicine Science. Starting salary $11,243 to $17,035 per year, and excellent Federal Civil Service Benefits. Call Arnold Olson (501) 372-8361, ext. 1-236 for further information. VA Medical Center, Little Rock, AR. 72206. Equal Opportunity Employer.

NUCLEAR MEDICINE RESIDENT POsition available beginning July 1, 1980 for a 2-year program at Georgetown University Hospital. This is a dynamic program which affords the resident primary responsibility for active clinical and research training in all aspects of nuclear medicine. The program is approved by the AMA and satisfies the requirements of the American Board of Nuclear Medicine. Requests for further information (include CV) should be directed to: John C. Harbert, M.D., Director, Division of Nuclear Medicine, Georgetown University Hospital, Washington, D.C. 20007.

SR. NUCLEAR MEDICINE TECHNOLOgist—Must be registered or registry eligible. Must have experience in Radioimmunoassay and Nuclear Cardiology. Send resume to: Melvin H. Freundlich, M.D., Dept. of Nuclear Medicine, College of Medicine and Dentistry of New Jersey-College Hospital, 100 Bergen St., Newark, NJ 07103. Equal Opportunity/Affirmative Action Employer.

NUCLEAR MEDICINE, FRESNO, CALifornia. The University of California (San Francisco) Medical Education Program seeks a Nuclear Medicine Physician for a rapidly expanding service at its affiliated Veterans Administration Medical Center in Fresno, California. Certification (or eligibility) by ABNM is necessary. Strong existing programs in Cardiology and Pulmonary Disease make a background in Internal Medicine highly desirable. The position combines active clinical teaching and patient care in an academic setting with opportunity for private practice. Inquiries should be addressed to Malcolm Jones, M.D., Chief of Radiology, Veterans Administration Medical Center, 2615 E. Clinton Avenue, Fresno, CA 93703. The University of California is an Equal Opportunity Employer.

FLORIDA REGION COMPANY IS LOOKing for Registered Radiopharmacist for the Southeastern United States. Competive salary for position is offered to the self initiating candidate. If you are interested please send resume to Pharmacon Nuclear, Inc., 8119 N.W. 33rd St., Miami, Fla. 33122.

A POSITION IS AVAILABLE IN A SOUTHern California radiology group for an individual board certified or eligible in nuclear medicine and radiology. Individual should have primary interest in nuclear medicine. Practice is combined hospital/office. Please send letter of interest and C-V to: Dr. Ken Gorske, 270 Orange Acres Drive, Anaheim, CA 92807.

NUCLEAR CARDIOLOGIST. FULL TIME academic position in UCLA affiliated hospital. Board eligible or board certified. Experience in research and teaching desirable. Well equipped, busy department, with multiple cameras, computers and stress testing equipment. Excellent salary and fringe benefits. Send replies and C.V. to Marvin B. Cohen, M.D., Chief, Nuclear Medicine Service, VA Medical Center, 16111 Plummer Street, Sepulveda, CA 91343. An equal opportunity employer.

NUCLEAR MEDICINE PHYSICIAN TO join ABNM certified physician at 700+ bed community hospital on Florida West Coast. Over 6000 imaging procedures per year. Nuclear Cardiology with Ohio Nuclear LFOV, Searle Pho Gamma IV, GE Maxicamera II, and DEC GAMMA 11. Contact Ben I. Friedman, M.D., Morton F. Plant Hospital, Box 210, Clearwater, Florida 33517. (813) 441-5248 or evenings (813) 461-3857.

NUCLEAR MEDICINE TECHNOLOGIST
Registered or registry eligible for a modern well equipped lab including 5 cameras and a computer. 350 bed teaching hospital. Excellent experience and opportunity for continued learning. Excellent fringe benefits. An equal opportunity affirmative action employer. Please send resume to Box 301, Society of Nuclear Medicine, 475 Park Ave. South, New York, NY 10016.

PEDIATRIC NUCLEAR MEDICINE PHYSICIAN—Full time junior staff staff position available at Children's Hospital Medical Center, Harvard Medical School. Clinical and teaching responsibilities. Research interest desirable. Board certification or eligibility in Nuclear Medicine or Nuclear Radiology required. Respond with curriculum vitae to S. Treves, M.D., Department of Radiology, Children's Hospital Medical Center, 300 Longwood Avenue, Boston, MA 02115 An Equal Opportunity/Affirmative Action Employer.

NUCLEAR MEDICINE TECH. Position available at La Junta Medical Center for a registered, or registry eligible, Nuclear Medicine Tech. We will consider a Radiology Tech with some experience or interest in Nuclear Medicine. This person can also receive on-the-job training in ultra sound to become registry eligible in this field. Good opportunity for someone ready to make a step in career development and advancement. If interested, or for more information please contact: Dorothy Chapman, Personnel Relations Coordinator, La Junta Medical Center, La Junta, Colorado 81050. (303) 384-5412 ext. 118.

NUCLEAR MEDICINE TECHNOLOGIST. Position available now at 420 bed teaching hospital medical center located in Northern New England College Community. Must be ARRT registered or registry eligible. Send resume to Mrs. Colley, Personnel Dept., Mary Hitchcock Memorial Hospital, Dartmouth-Hitchcock Medical Center, Hanover, NH 03755. An Equal Opportunity Employer.

NUCLEAR MEDICAL TECHNOLOGIST. Immediate, excellent opportunity for an experienced registered or registry eligible Technologist. Will work in large department of a 700 bed General Hospital with forward looking ideas. The Department has 2 full-time Nuclear Physicians, a Physicist, 2 New GE Maxi-IIs, 2 Standard Cameras and computer. Associated with research facilities in Radioassay and Rheumatology. Position should provide an interesting opportunity with a busy but not boring atmosphere for a dedicated Technologist. Excellent employee benefits and opportunities. Submit credentials to Mr. Warren Garfield, Director of Personnel, Presbyterian Hospital of Dallas, 8200 Walnut Hill Lane, Dallas, Texas, 75231.

NUCLEAR MEDICINE RESIDENCY
Two years, program Jackson Memorial Hospital Training in all aspects of Imaging including Nuclear Cardiology, Echocardiography, Radioassay, Computer and Basic Sciences; elective in CT and Ultrasound. Information to be directed to Aldo N. Serafini, M.D., Director, Division of Nuclear Medicine, University of Miami School of Medicine, P.O. Box 016960, Miami, Florida 33101.

NUCLEAR MEDICINE TECHNOLOGIST
Immediate opening for technologist in fully accredited 400-bed community and university-affiliated hospital, situated in scenic northcentral Pennsylvania. Proficiency required in radioimmunoassay work, imaging dynamic studies and computer applications. Department is equipped with cameras, rectilinear scanners, automated well counters, pipetter and a computer. Good salary and full benefits. Contact Ruth R. Hargrave, Assoc. Director of Perssonel, The Williamsport Hospital, 77 Rural Avenue, Williamsport, PA (717) 322-7861. Equal Opportunity Employer.

NUCLEAR MEDICINE TECHNOLOGIST
2 years minimum experience; to coordinate internship training at 11 hospitals affiliated with the Rochester Institute of Technology. Full or part-time. Call (716) 475-2978 or write Nuclear Medicine Technology Program, Rochester Institute of Technology, Rochester, NY 14623. Rochester Institute of Technology Equal Opportunity Employer.

NUCLEAR MEDICINE TECHNOLOGIST
Registered or registry eligible technologist for full time position in modern 410 bed acute care hospital. St. Mary's is located in a city of 100,000 midway between St. Louis and Chicago. Interested persons should contact the Personnel Office, St. Mary's Hospital, 1800 E. Lake Shore Drive, Decatur, IL. (217) 429-2966.

NUCLEAR MEDICINE TECHNOLOGIST
Full time position available for a registered or registry eligible nuclear medicine technologist. Full range of in-vivo procedures, 3 gamma cameras with computer. Good salary and employee benefits. Apply to Personnel Department: Akron General Medical Center, 400 Wabash Ave., Akron, Ohio 44307. (216) 384-7632.

NUCLEAR MEDICINE TECHNOLOGIST. Full time position for registered or registry eligible Nuclear Medicine Technologist to join Nuclear Medicine Department of progressive 260 bed community hospital located in scenic North Central Pennsylvania. Send resume to: Personnel Department, Divine Providence Hospital, Williamsport, Pennsylvania 17701.

POSITIONS WANTED

NUCLEAR PHYSICIAN SEEKING POSITION as Dept. or Section Head East or West Coast Academic or Clinical. Presently Dept. head. Ph.D., M.D., ABNM certified, over 60 publications, strong hematology background, considerable administrative experience. Please write Box 203, Society of Nuclear Medicine, 475 Park Ave. So., NY, NY 10016.

GRADUATING IN MAY. REGISTRY eligible. Available July 1. Contact: Phil Peters, 4801 Spencer #8, Las Vegas, NV 89109.

"INTERNIST-CERTIFIED IN INTERNAL Medicine Nuclear Medicine Endocrinology. University appointment-Associate Professor, 43. Twelve years experience in large group practice. Wish to relocate-Western USA. CV on request. Reply box #300, Society of Nuclear Medicine, 475 Park Avenue South, New York, NY 10016.

SENIOR IMAGING TECHNOLOGIST for expanded 5 camera, 2 computer department, active in nuclear cardiology. Responsible for supervision of imaging and computer processing. Also involved with training program and clinical research. Salary commensurate with experience. Warm climate. Reply P.O. Box 302, Society of Nuclear Medicine, 475 Park Avenue South, New York, NY 10016.

CHIEF TECHNOLOGIST, ARRT, BS, mathematics; M. Ed., physics. Unique academic, clinical, teaching background. Seeks challenging position. Reply Box 303, Society of Nuclear Medicine, 475 Park Ave., So., New York, NY 10016.

FOR SALE

BRATTLE PHYSIOLOGICAL SYNCHRONizer Model 202. New Condition. Contact Hans Tschersich, M.D., 1162 Willamette Street, Eugene, Oregon 97401. Phone (503) 687-6026.

ADAC CAM II COMPUTER. New Condition. Contact Richard Thomason, CNMT, 4966 Glenway Avenue, Cincinnati, Ohio 45238. (513) 251-6100.

SEARLE GAMMA CAMERA HP WITH 6 collimators, P scope, polaroid camera. Excellent condition. Best offer over $10,000. Contact K. Smith (609) 589-7859.

SEARLE HP CAMERA, RIVERSIDE (Hewlett Packard) fm tape recorder data store, Riverside cardiac gate, Riverside region of interest generator. Best Offer. (415) 664-7400.

DIRECTOR-DIVISION OF NUCLEAR MEDICINE
UNIVERSITY OF UTAH

Seeking a director for the division of nuclear medicine, Department of Radiology, University of Utah Medical Center. Board certification in nuclear medicine required. Salary and rank are negotiable, dependable upon experience and qualifications. We are an Equal Opportunity Employer. Interested parties may contact or send current resume's to:

Dr. David G. Bragg
Professor & Chairman
Department of Radiology
University of Utah Medical Center
Salt Lake City, Utah 84132

NUCLEAR MEDICINE TECHNOLOGIST

Like to travel? Interested in teaching people to use nuclear medicine computers? Do you have one year experience in nuclear cardiology? Write:

Training Department
Informatek States, Inc.
302 Research Drive
Norcross, GA 30092 EOE/M/F.

RESIDENCY IN NUCLEAR MEDICINE

Two-year approved program offering broad clinical experience including tertiary care and community hospitals, oncology and pediatrics; ultrasound and CT; strong basic science teaching; radiation safety; central radiopharmacy and RIA; opportunity for research; an integrated program at State University of New York at Buffalo School of Medicine; available July 1, 1980. Contact: M.A. Bender, M.D., Program Director, Dept. of Nuclear Medicine, 666 Elm St., Buffalo, NY 14263 or M. Blau, Ph.D., Chairman, Dept. of Nuclear Medicine, 3495 Bailey Ave., Buffalo, NY 14215.

Physicians - The Food and Drug Administration (an Equal Opportunity Employer) has Civil Service or Commissioned Corps (U.S. Public Health Service) openings for evaluation of new drug clinical testing and potential effects of drugs. The vacancies are for physicians qualified in nuclear medicine or with clinical pharmacology training/experience or research experience in development of new drugs.

The positions have no patient-care duties, are located in Rockville, Maryland, and require medical judgments, effective writing and speaking, and ability to organize work to meet deadlines. Grades GS-14 and GS-15 (salary range $42,812 to $50,112 per year, depending upon experience and qualifications). Comprehensive fringe benefits available.

Requirements: Medical degree (M.D. or Doctor of Osteopathy) and board eligibility in nuclear medicine or equivalent experience in clinical pharmacology or drug research. Civil Service regulations govern acceptability of degree source. U.S. citizenship required.

Send Resume or Curriculum Vitae to: **George H. Calvert, Food and Drug Administration, Division of Personnel Management, 5600 Fishers Lane, Rockville, Maryland 20857.**

NUCLEAR MEDICINE TECHNOLOGIST

Are you looking for an exciting managerial experience? If so, Galesburg Cottage Hospital has an immediate opening for a Chief Nuclear Medicine Technologist in our modern and progressive 265 bed hospital. We are seeking a registered Nuclear Medicine Technologist who is capable of taking an active role in our nuclear cardiovascular program and be responsible for the supervision of our two registered nuclear technologists. You would be working with the newest and latest equipment. Excellent vacation plan, hospital paid group health insurance, non-contributing pension plan, paid sick days, long tern disability program, nine paid holidays plus much more that goes with this management position. Salary is negotiable based on previous experience.

Please contact: Harvey Lightbody, V.P. Personnel, Galesburg Cottage Hospital, 695 N. Kellogg St., Galesburg, Illinois 61401, Phone (309) 343-8131, Ext. 368. An equal opportunity employer.

INTERNATIONAL CONFERENCE ON GALLIUM AND RELATED ELEMENTS

SEPTEMBER 12-14, 1980
BANFF SPRINGS HOTEL,
Banff, Alberta, Canada

This meeting is jointly organized by the Cross Cancer Institute in Alberta, Veterans Administration Hospital, Seattle, Washington, the Faculty of Pharmacy and the Division of Continuing Medical Education, University of Alberta, Edmonton, Alberta.

The Faculty will consist of Dr. R.L. Hayes, Dr. P. Hoffer, Dr. G.S. Johnston, Dr. R. Sephton, Dr. M. Welch and Dr. J. Rasey.

Abstracts are invited and abstract forms and further details may be obtained from:

Department of Nuclear Medicine
Cross Cancer Institute
11560 University Avenue
Edmonton, Alberta, Canada.
T6G 1Z2

Application is being made for A.M.A. Category I Continuing Medical Education Credit.

NUCLEAR MEDICINE TECHNOLOGIST

Registrered or registry eligible for a modern well equipped lab including 5 cameras and a computer. 350 bed teaching hospital. Excellent experience and opportunity for continued learning. Excellent fringe benefits. An equal opportunity affirmative action employer. Please send resume to Box 301, Society of Nuclear Medicine, 475 Park Ave. South, New York, NY 10016.

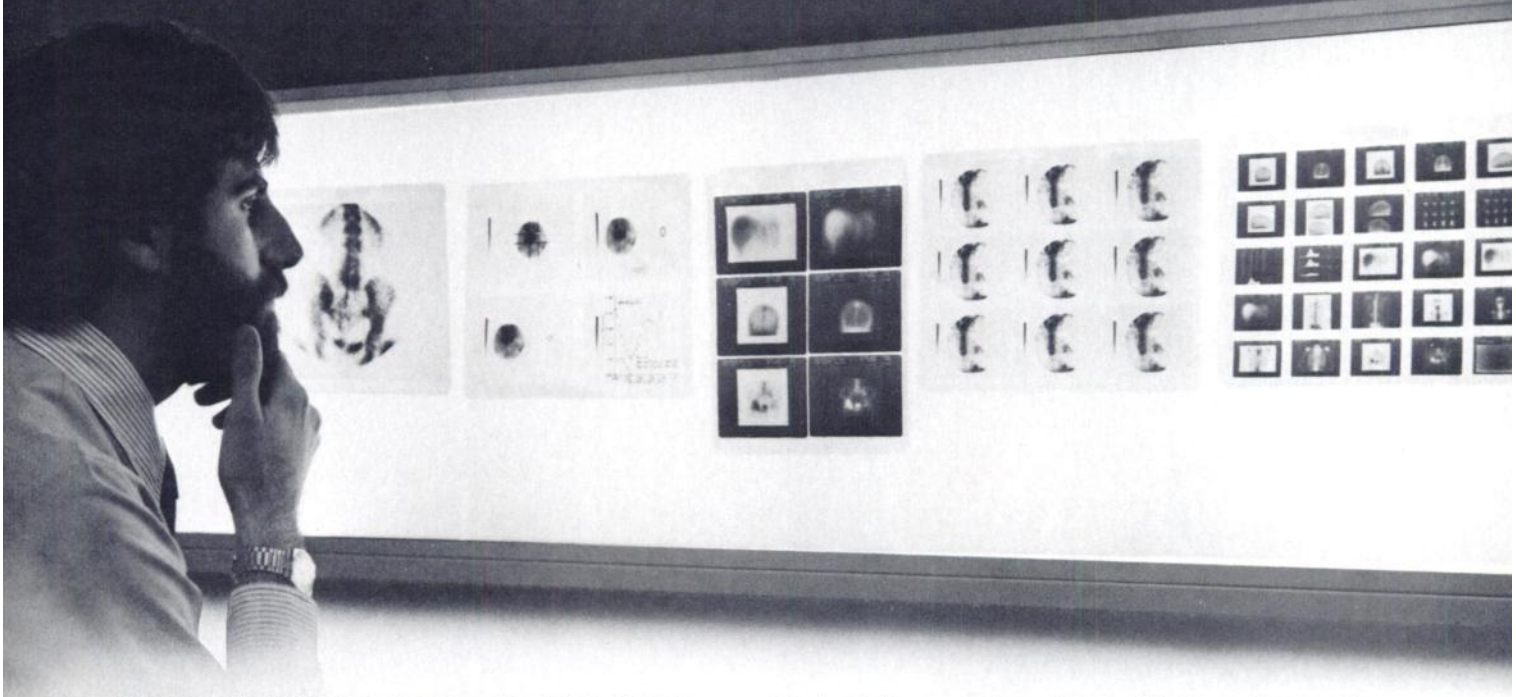
NUCLEAR MEDICINE TECHNICIAN

Immediate position available in active 700 bed teaching hospital. Registry and two years experience preferred. In vivo, in vitro and computer rotations available. Contact:

Shan Marlette, M.S.
Nuclear Medicine Service (115)
V.A. Medical Center
54th Street & 48th Avenue S.
Minneapolis, MN 55417
(612) 725-6767, Ext. 6642

Matrix video cameras do everything but develop the film...

and that's next.



Everything medical imaging cameras should do, that is. Effortlessly. Automatically. Excellently, in over 1,000 new installations a year. Matrix video cameras embody the latest in video, optical and microprocessor technology. They handle the relatively diverse demands of ultrasound and nuclear computers as well as the special, high line rate requirements of CT or fluoroscopy reproduction. They give you quality images, from which you can diagnose confidently.

The video cameras that do everything are *the only ones which automatically adjust exposure time*. Other camera systems make you do it manually. We think you have enough to do. Matrix cameras have a photometer which measures a calibration pattern. ***Before each exposure***, it reads light levels, compares them with optimum values and adjusts accordingly. Automatically. All in a quarter of a second. You can be confident the scans you do at the end of the day will have the same gray scale content as the ones you do at the beginning of the day.

The "do-everything" cameras have the widest selection of image size formats to meet the needs of your lab or service. With the Multi-Imager 7 as many as 8 different ones. With the Video Imager, as few as one. Flexibility from a single large image to 25 slide size images. Film sizes of 8″x10″ and 11″x14″. All from one camera!

Most of all, you get excellent, effortless diagnostic images, automatically. Nothing less than you'd expect from the camera that does everything but develop the film...AND THAT'S NEXT, FROM MATRIX.

 # MATRIX INSTRUMENTS

230 Pegasus Ave., Northvale, N.J. 07647
(201) 767-1750 Toll Free: (800) 526-0274
Telex: 135131
Worldwide sales and service.
Contact international department.

JNM

Please send more information and sample studies.

- ☐ Ultrasound
- ☐ CT
- ☐ Nuclear Medicine Gamma Camera
- ☐ Nuclear Medicine Computer
- ☐ Fluoroscopy

Name_____ Title_____

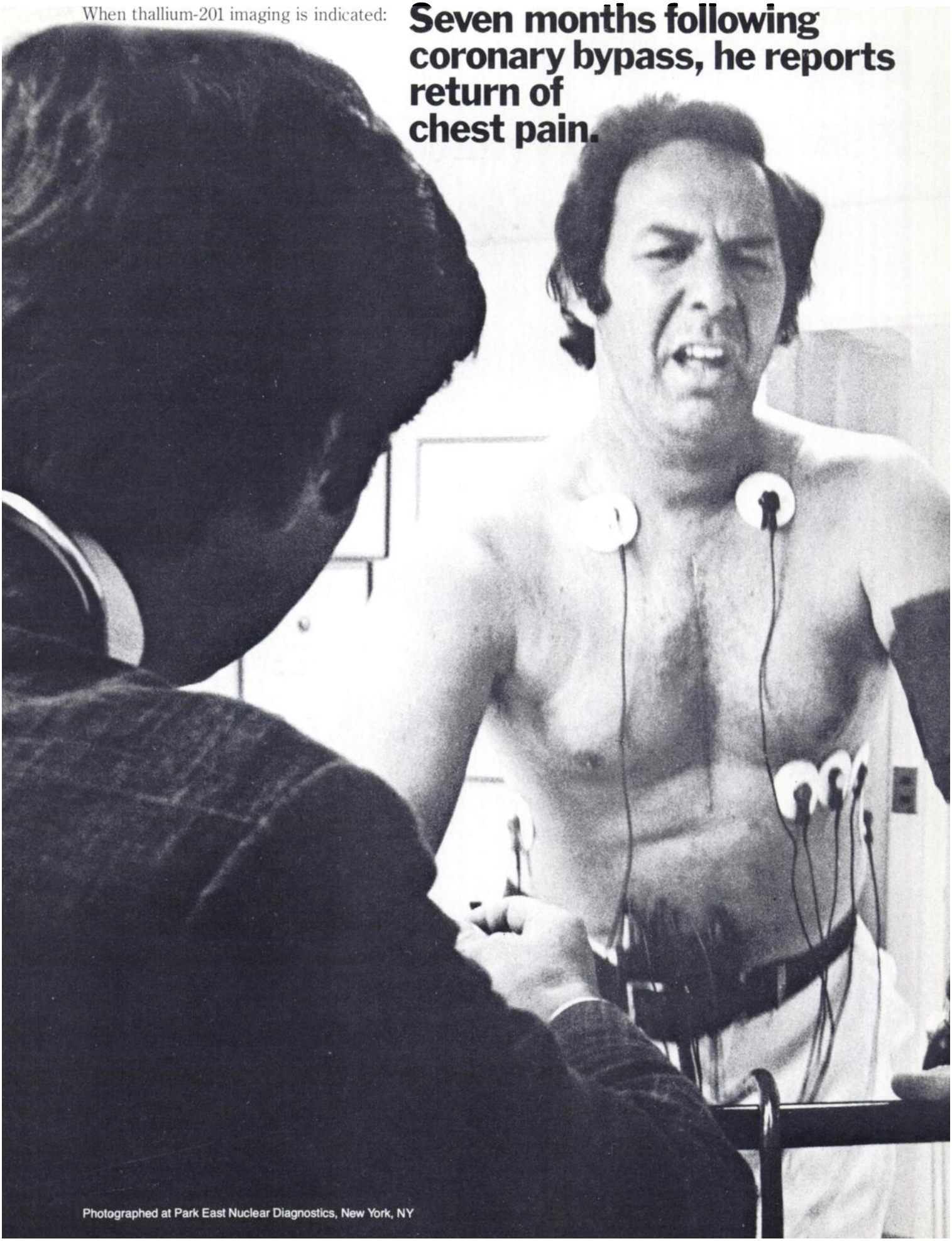
Hospital_____ Dept._____

Address _____

City_____ State_____ Zip_____

When thallium-201 imaging is indicated:

Seven months following coronary bypass, he reports return of chest pain.



Photographed at Park East Nuclear Diagnostics, New York, NY

As the population of successful coronary bypass patients continues to grow, physicians will encounter an increasing number who report a return of chest pain after varying postoperative periods.

Complaints of chest pain in post-bypass patients deserve thorough, progressive workup... usually including exercise electrocardiography. Without exercise ECG evidence of myocardial ischemia, the clinician must decide on symptoms alone whether or not to suggest repeat coronary angiography. In such a setting, myocardial perfusion imaging with thallium-201 may rule out—or confirm—the possibility of electrically silent graft occlusion or extension of disease.

Localizes in perfused myocardium

Thallium-201 is a radioactive isotope that, following intravenous injection, distributes within myocardial cells in proportion to regional perfusion. Nuclear medicine imaging performed following injection will display relative regional perfusion and myocardial cell viability.

When used in conjunction with stress electrocardiography, thallium-201 has proven successful in demonstrating regional ischemia that may escape detection by ECG. A region that appears "cold" following exercise and injection, but "fills in" on repeat imaging a few hours later, suggests stress ischemia secondary to fixed stenosis that restricts perfusion during exercise. A region that remains persistently "cold" generally indicates irreversible myocardial scarring.

Reveals graft patency/occlusion

Many institutions routinely perform preoperative and postoperative stress thallium studies to obtain functional evidence of graft-mediated reperfusion of formerly ischemic regions. This sequence of studies can serve as a valuable baseline in the event that the patient returns with a complaint of chest pain:

- If a repeat thallium study discloses ischemia in the regions formerly perfused by the grafts, occlusion may be suspected.
- If the repeat study suggests new areas of ischemia, progression of atherosclerotic disease may have occurred.
- If the repeat study is essentially unchanged from the postoperative findings, nonischemic etiology should be explored.

Useful with/without baseline

Even if baseline stress-thallium studies are not available, this procedure can still provide valuable diagnostic guidance—particularly if it is negative, or displays clear evidence of ischemia in the grafted regions.

Information, teaching program available

New England Nuclear offers an extensive range of journal reprints on the use of thallium-201 imaging, and provides teaching rounds material and reference monographs at no charge, as a service to the profession. For more information on thallium-201, use the coupon below, or call **800-225-1572, ext 2234** toll free.

Thallous Chloride Tl 201

See following page for full prescribing information.

Teaching Program Administrator

NE-0312

NEN® **New England Nuclear**
Medical Diagnostics Division

549 Albany St.
Boston, MA 02118

Please send me:
- ☐ Journal reprints on the clinical use of thallium-201 imaging
- ☐ Home-study monograph on thallium-201 imaging
- ☐ Scheduling information on thallium-201 teaching slide program

Name .....

Title/Specialty .....

Institution .....

Address .....

City ..... State ..... Zip .....

Thallous Chloride Tl 201

For Diagnostic Use

November 1977

Indications and Usage: Thallous Chloride Tl 201 may be useful in myocardial perfusion imaging for the diagnosis and localization of myocardial infarction. It may also be useful in conjunction with exercise stress testing as an adjunct in the diagnosis of ischemic heart disease (atherosclerotic coronary artery disease).

Contraindications: None known.

Warnings: In studying patients in whom myocardial infarction or ischemia is known or suspected, care should be taken to assure continuous clinical monitoring and treatment in accordance with safe, accepted procedure. Exercise stress testing should be performed only under the supervision of a qualified physician and in a laboratory equipped with appropriate resuscitation and support apparatus.

Ideally, examinations using radiopharmaceutical drug products–especially those elective in nature–of women of childbearing capability should be performed during the first ten days following the onset of menses.

Precautions: 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 thallium Tl 201 scans. Attention is directed to the fact that thallium is a potassium analog, and since the transport of potassium is affected by these factors, the possibility exists that the thallium may likewise be affected.

Thallous Chloride Tl 201, as all radioactive materials, must be handled with care and used with appropriate safety measures to minimize external radiation exposure to clinical personnel. Care should also be taken to minimize radiation exposure to patients in a manner consistent with proper patient management.

No long-term animal studies have been performed to evaluate carcinogenic potential.

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. Thallous Chloride Tl 201 should be used in pregnant women only when clearly needed.

It is not known whether this drug is excreted in human milk. As a general rule nursing should not be undertaken when a patient is administered radioactive material.

Safety and effectiveness in children have not been established.

Adverse Reactions: Adverse reactions related to use of this agent have not been reported to date.

Dosage and Administration: The recommended adult (70kg) dose of Thallous Chloride Tl 201 is 1-1.5mCi. Thallous Chloride Tl 201 is intended for intravenous administration only.

For patients undergoing resting thallium studies, imaging is optimally begun within 10-20 minutes after injection. Several investigators have reported improved myocardial-to-background ratios when patients are injected in the fasting state, in an upright posture, or after briefly ambulating.

Best results with thallium imaging performed in conjunction with exercise stress testing appear to be obtained if the thallium is administered when the patient reaches maximum stress and when the stress is continued for 30 seconds to one minute after injection. Imaging should begin within ten minutes post-injection since target-to-background ratio is optimum by that time. Several investigators have reported significant decreases in the target-to-background ratios of lesions attributable to transient ischemia by two hours after the completion of stress testing.

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

Radiopharmaceuticals should be used by persons with specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate government agencies authorized to license the use of radionuclides.

How Supplied: Thallous Chloride Tl 201 for intravenous administration is supplied as a sterile, non-pyrogenic solution containing at calibration time, 1mCi/ml of Thallous Tl 201, 9mg/ml sodium chloride, and 9mg/ml of benzyl alcohol. The pH is adjusted to between 4.5-6.5 with hydrochloric acid and/or sodium hydroxide solution. Vials are available in the following quantities of radioactivity: 1.5, 3.0, 4.5, 6.0, and 9.0 millicuries of Thallous Tl 201.

The contents of the vial are radioactive. Adequate shielding and handling precautions must be maintained.

Catalog Number NRP-427

PHYSICIAN DIRECTOR
DIVISION OF NUCLEAR MEDICINE
CHILDREN'S HOSPITAL

The Department of Diagnostic Radiology, Children's Hospital is seeking a Physician Director of the Division of Nuclear Medicine for the Department of Diagnostic Radiology.

The Director of Nuclear Medicine will be located in a new 200 bed Children's Hospital. The Department will also provide Nuclear Medicine services for a 90 bed tertiary care obstetrical unit (Grace Hosptial) and a 1100 bed acute care adult hospital (Shaughnessy Hospital) located in the same hospital complex.

The Director will be fully responsible for all the service, teaching and research in Nuclear Medicine and for the administration of the division.

Applicants with post graduate education in Pediatric Nuclear Medicine preferred but not essential.

The successful applicant should be available January 1st, 1981.

Please send curriculum vitae and references to:

Donald E. Newman, M.D.
Director of Diagnostic Radiology
Children's Hospital
250 West 59th Avenue
Vancouver, B.C. V5X 1X2

CHIEF TECHNICIAN
NUCLEAR MEDICINE

Children's Hospital, Vancouver, B.C., requires a technical supervisor for the Division of Nuclear Medicine, Department of Diagnostic Radiology. This new division will provide services for a new 200 bed Children's hospital, a new 90 bed tertiary care obstetrical hospital and a 600 bed acute care adult hospital.

The Chief Technician in Nuclear Medicine will be involved in overseeing the installation of all equipment; developing departmental policies; hiring of all non-physician staff for the new division.

The successful applicant must be available October 1, 1980.

Duties will include: Supervision and coordination of the work activities of all non-physician staff; responsibility for successful operation of all technical equipment and processes; developing divisional budget, purchasing major equipment and planning future development with the physician Director of Nuclear Medicine.

Qualifications and experience:
- Registered Technician in Nuclear Medicine
- Minimum of 5 years total experience as a Nuclear Medicine Technician
- Experience in pediatric nuclear medicine preferred
- Previous supervisory experience essential
- Training in hospital administration preferred.

Please send curriculum vitae including references to:

Mrs. C Hesse
Personnel Officer
CHILDREN'S HOSPITAL
250 West 59th Ave.
Vancouver, B.C. V5X 1X2

NUCLEAR MEDICINE TECHNOLOGIST

Two full-time openings for Registered or Registry Eligible Nuclear Medicine Technologist. One position is for Nuclear Cardiology to work with Baird Atomic System and one position is in the Nuclear Medicine Department to do large variety of studies. Baptist Medical Center is a 565 bed modern hospital located in the pleasant suburbs of Okla. City. Excellent salary and employee benefits await qualified applicants.

For information call (collect) Gene Stanford at (405) 949-3202 or send resume to:

Employment Office
BAPTIST MEDICAL CENTER
Baptist Medical Center
3300 NW Expressway
Oklahoma City, Okla. 73112

POSITION ANNOUNCEMENT

Chairperson, Department of Radiologic Technology position availabe July 1, 1980 for a 12 month appointment negotiated annually. Position includes administration and supervision of the activities and personnel in a multidisciplinary department of Radiologic Technology offering degree options in Radiography, Radiation Therapy, Nuclear Medicine Technology and Medical Diagnostic Ultrasound. Person is expected to participate in teaching, research and service activities in the Department, College, University and Community. Minimum qualification are master's degree in a health related field; certification/credentialing as an ARRT, ASCP, ARDMS or NMTCB; teaching, administrative and leadership experience in an institution of higher learning; and evidence of continuing education and professional participation. Doctoral degree, evidence of research activity, and multiple disciplinary certification are preferred. Salary and rank are negotiable depending on qualifications and experience. Send application, resume and references by May 25, to Terry Curtis, Chairperson, Search Committee, P.O. Box 26901, College of Health, Oklahoma City, Oklahoma 73190. The University of Oklahoma is an Affirmative Action Employer.

NEW YORK UNIVERSITY
POST-GRADUATE MEDICAL SCHOOL

offers

A FIVE DAY REVIEW COURSE IN
RADIATION PHYSICS AND BIOLOGY

MONDAY TO FRIDAY AUGUST 25 TO 29, 1980

DONALD J. PIZZARELLO, Ph.D.
Professor of Radiology
Department of Radiology
Program Director

COURSE DESCRIPTION

This course, designed especially for residents in Radiology and Nuclear Medicine, consists of intensive preparation and review for the written board examination in Radiology and Nuclear Medicine and is of value for those preparing for the oral examination as well.

The course will include a concentrated presentation of the physics of diagnostic and nuclear radiology and of radiation biology. While the course is not designed for those taking the board examination in radiation therapy, much of the material presented will be relevant to that subject. Moreover, if sufficiant numbers of students express the wish to have a review of some aspects of the physics or radiation biology of radiation therapy, separate sessions may be arranged to accommodate those persons only.

Part of two afternoons, designated as discussion sessions, will be left open. The course faculty will be available during these periods to discuss any question, problems or areas of difficulty presented by students.

LOW COST HOUSING

Low-cost housing is available in the student dormitory rooms on the main NYU campus in the heart of historic Greenwich Village, Fifth Avenue at Eighth Street, Manhattan. Check box below for further information.

FEE: $335 ACCREDITATION: 35 AMA Category I Credit Hours

Preregistration Form **Course #604: RADIATION PHYSICS AND BIOLOGY** Please Type or Print

NAME:_____ **TELEPHONE #:**_____

ADDRESS:_____

CITY:_____ **STATE:**_____ **ZIP**_____

Return with check payable to NYU Post-Graduate Medical School to:

Registration Department
NYU Post-Graduate Medical School
Room 4-20-0, LHB 550 First Avenue
New York, N.Y. 10016
Telephone #: (212) 679-8745 (24 hr service)

- ☐ Send Course Brochure
- ☐ Send Hotel Information
- ☐ Send Low Cost Housing Information

JNM 3/80

Medi-Ray *announces . . .*

SURVEY METER

CALIBRATION and REPAIR SERVICE

The Medi-Ray Survey Meter Calibration and Repair Service is designed to provide reliable, competent calibration and repair for the areas of Nuclear Medicine, Radiology, Research and Industry. Our service incorporates the latest techniques and facilities, as well as a staff of highly qualified personnel functioning in the latest and most modern of environments. The result is the highest quality service at a reasonable cost to the customer.

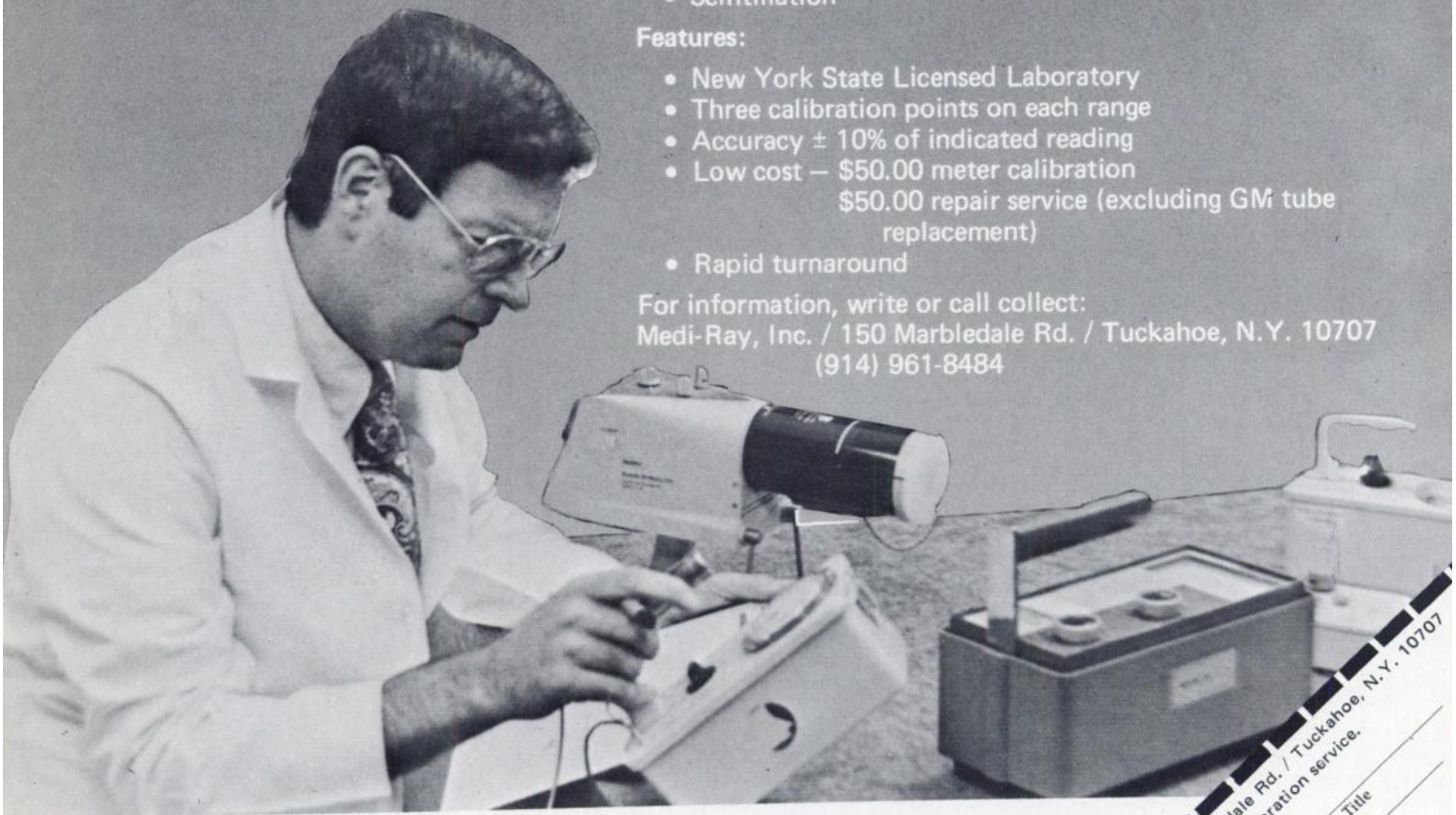
Types of Meters:

- Ionization Chamber
- Geiger – Mueller
- Scintillation

Features:

- New York State Licensed Laboratory
- Three calibration points on each range
- Accuracy ± 10% of indicated reading
- Low cost – $50.00 meter calibration
  $50.00 repair service (excluding GM tube replacement)
- Rapid turnaround

For information, write or call collect:
Medi-Ray, Inc. / 150 Marbledale Rd. / Tuckahoe, N.Y. 10707
(914) 961-8484



Medi-Ray, Inc.

Medi-Ray, Inc. / 150 Marbledale Rd. / Tuckahoe, N.Y. 10707
Please send information on calibration service.

Name _____ Title _____
Hospital _____ Dept. _____
Address _____ City _____
State _____ Zip _____
Phone _____

JNM CLASSIFIED PLACEMENT SERVICE SECTION

This section in the *Journal of Nuclear Medicine* contains "Positions Open", "Positions Wanted", and "For Sale" listing. Nondisplay "Positions Wanted" ads by members of the Society are billed at 60¢ per word for each insertion with no minimum rate. Nondisplay "Positions Wanted" ads by nonmembers and all nondisplay "Positions Open" and "For Sale" ads by members and nonmembers are charged at 85¢ per word. Display advertisements are accepted at $125 for ⅛ page, $185 for ¼ page, $295 for ½ page, and $510 for a full page. Closing date for each issue is the 1st of the month preceding publication. Agency commissions and cash discounts are allowed on display ads only. Box numbers are available for those who wish them.

All classified ads must be prepaid or accompanied by a purchase order. Send orders to:

Journal of Nuclear Medicine
475 Park Ave. South
New York, NY 10016

Dependable Performers

Minitec®
(Technetium Tc 99m)
Generator

Small in size and light in weight, but big in performance. That's Minitec. Designed for minimum amount of exposure to operator, its unique construction (no exposed tubing) and thick shielding (1⅝" lead) provide high shielding-to-activity ratio. Small-volume, high-concentration eluates give maximum flexibility for varying applications. Wide range of potencies and calibration dates fit the ^{99m}Tc needs of every lab.

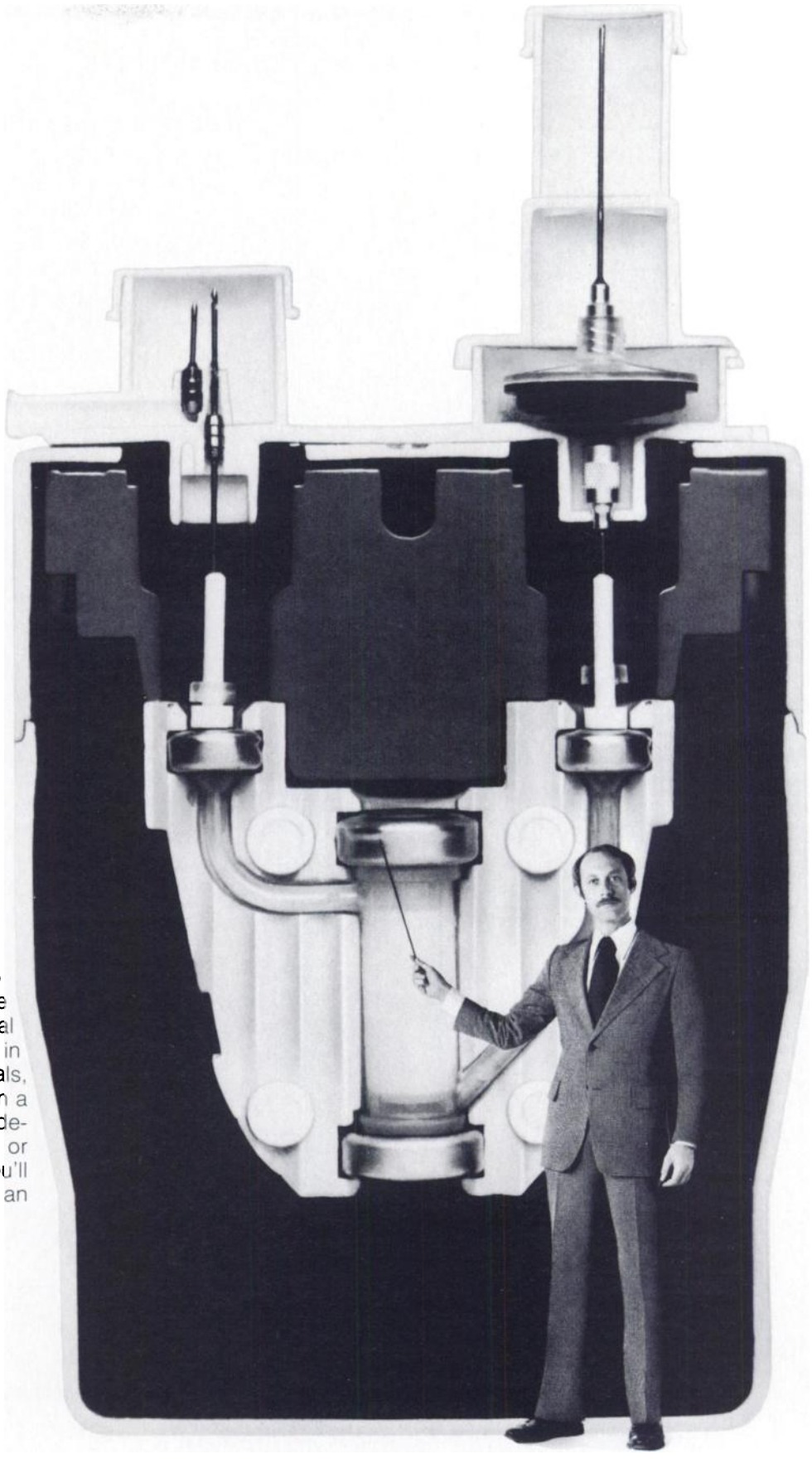
Minitec (Technetium Tc 99m) Generator — the largest-selling generator in the U.S.

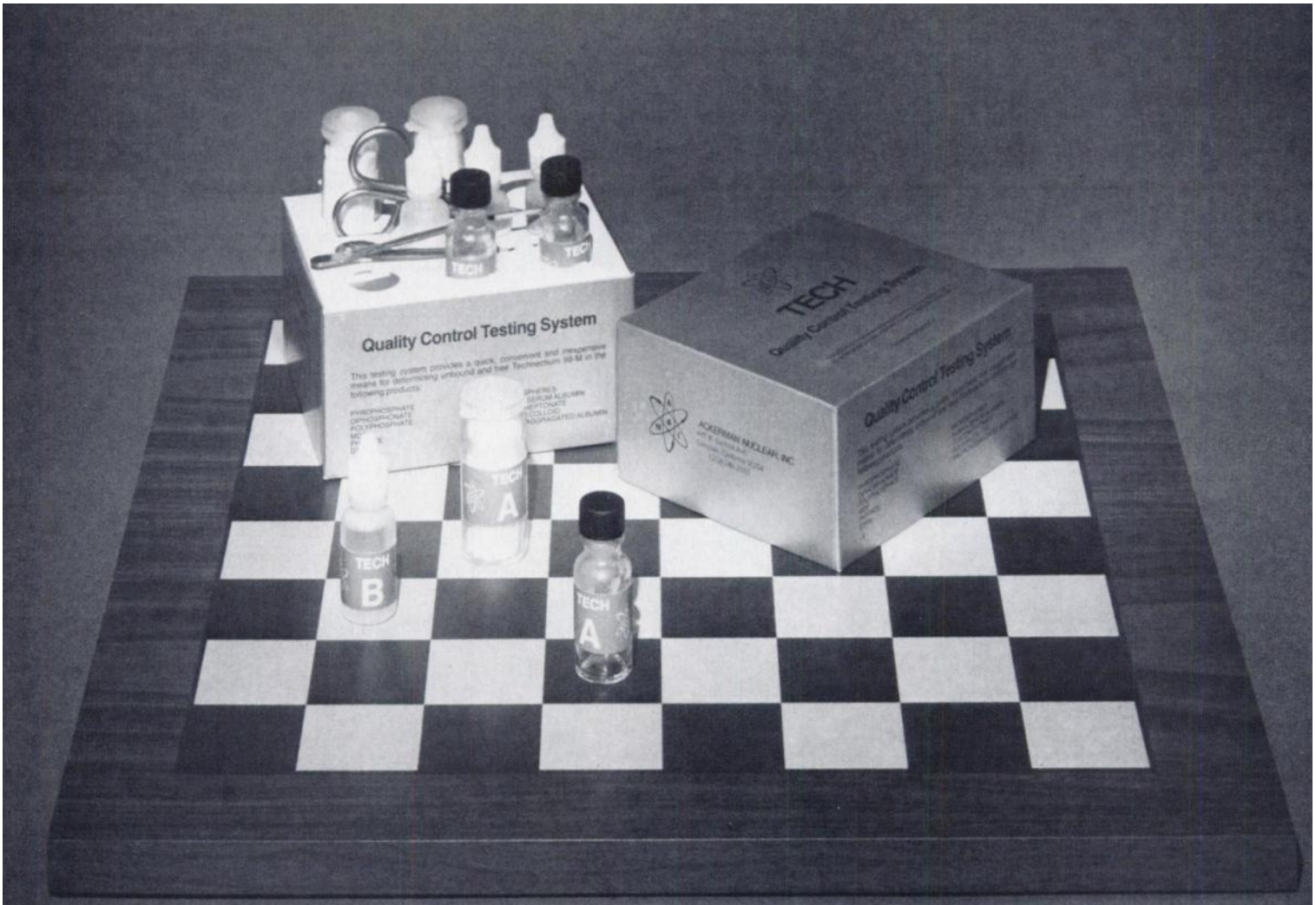
Squibb Technical Associates

When you buy Minitec and Squibb radiopharmaceuticals, you get the back-up service of a Squibb Technical Associate. He's had extensive training in nuclear medicine, radiopharmaceuticals, RIA and instrumentation. Call him when a new tech needs instruction, a problem develops, you're planning to expand, or there's need for special information. You'll get the prompt, personal attention of an experienced specialist.

Medotopes®

SQUIBB®





Tech It !

Because quality is important to your image ...Check your Products with a Tech Kit ! It's the only move to make.

Tech is a quality control testing system which provides a quick, convenient and inexpensive means for determining unbound and free Technetium 99m in the following products:

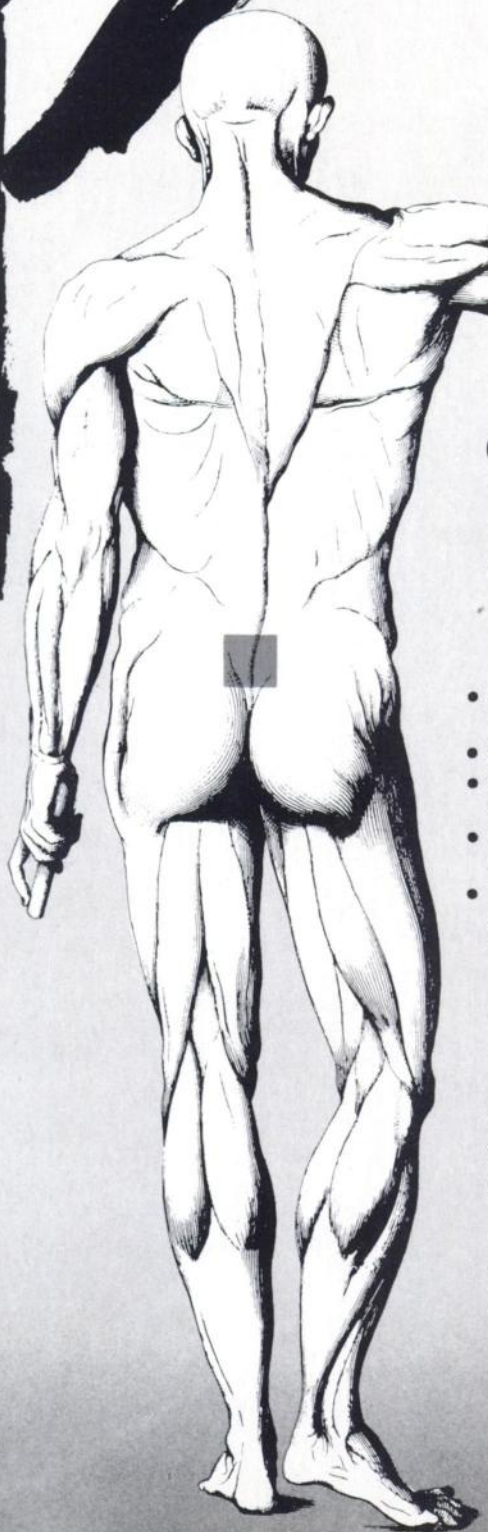
PYROPHOSPHATE	PHYTATE	GLUCOHEPTONATE
DIPHOSPHONATE	DTPA	SULFUR COLLOID
POLYPHOSPHATE	MICROSPHERES	MACROAGGREGATED ALBUMIN
MDP	HUMAN SERUM ALBUMIN	

For more detailed information, contact:

ACKERMAN NUCLEAR, INC.
Pharmaceuticals for Nuclear Medicine
445 W. Garfield Ave.
Glendale, CA 91204, USA
(213) 240-8555

PRECISION ACCURACY PERFORMANCE

PAP



Introducing New GammaDab® [^{125}I] PAP RIA Kit

- Affinity purified PAP in human serum-based standards
- Superior maximum binding
- Greatest sensitivity in clinically significant range
- Ready-to-use reagents—no reconstitution
- Convenience—choice of same-day or overnight procedures, 60 or 125-tube kits

For the quantitative determination of Prostatic Acid Phosphatase levels in serum.

Innovating for Life

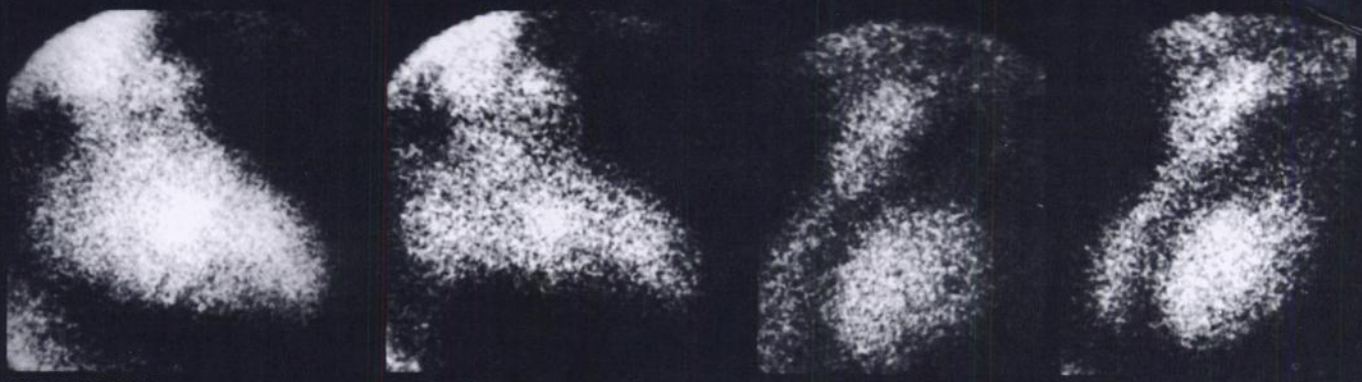
CLINICAL ASSAYS
DIVISION OF TRAVENOL LABORATORIES, INC.

620 Memorial Drive, Cambridge, MA 02139
(617) 492-2526 TLX: 921461 CLASS CAM
Toll free outside Mass: (800) 225-1241

For other worldwide locations, please contact your local Clinical Assays/Travenol representative or the International Sales Department, Clinical Assays, Cambridge, MA 02139 U.S.A.

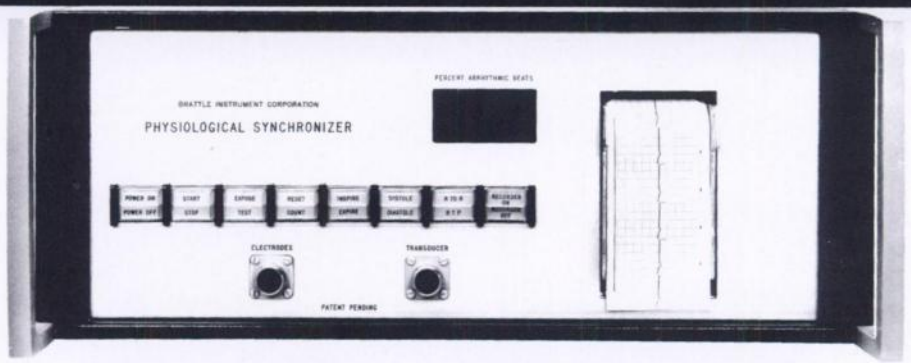
Complete directions are provided with each product. These directions should be read and understood before use. Particular attention should be paid to all warnings and precautions. Additional performance data are available. Should you have any questions, contact your Clinical Assays/Travenol representative.

Help your cardiologist study heart kinetics non-invasively with Brattle-gated scintiphotos.



RAO, DIASTOLE | RAO, SYSTOLE | LAO, DIASTOLE | LAO, SYSTOLE

The RAO view shows akinesis of the lower antero-lateral wall and apex; and contraction of the inferior wall and high up the antero-lateral wall. The LAO view shows good contraction posteriorly and akinesis of the septal aspect of the chamber. Patient was injected IV with 20mCi of ^{99m}Tc-labelled Human Serum Albumin. The agent was prepared using the New England Nuclear Electrolysis Kit for labelling HSA. Write or call for a portfolio of Brattle-gated lung, liver and heart studies.



No knobs, no meters, no errors
The spartan panel above tells the second-best part of our story. If you want to photograph peak systole, press the SYSTOLE button. If, say, you want systole only at full expiration, press the EXPIRATION button as well. If only breathing is relevant, don't press the heart button.

The Brattle is connected to the patient and to your gamma (or x-ray or ultrasonic) camera. Whenever the patient is in the selected phase, both the scope and the scaler on your gamma camera are gated ON, and film is exposed. Otherwise, they are OFF.

Brattles lock onto patients—and stay locked on
It doesn't matter if the patient's heart rate and breathing depth change while he's under the collimator because we stay right with him. Brattles contain an ECG to track heart, a plethysmograph to track respiration, and a tiny computer to deduce systole and diastole times from the heart signal. And because it's all built in, your operator need not be a physiologist.

We don't cover our tracks—we print them
The panel lights flash whenever the patient reaches the selected phases; and pushing the RECORDER-ON button gets you an ECG tracing marked with breathing and camera-on times. You can verify function before, during and after exposure.

A single pair of axillary electrodes captures both heart and breath
It's easy. And we supply disposable, pre-filled electrodes.

Some Brattles have been in clinical use for over three years—in community and major hospitals
More than half of our instruments are in community hospitals and the list is growing rapidly. Upon request, we'll supply names of happy users in your area.

What's the next step? Get in touch
Ask your NEN man about Brattles and HSA Kits. He can show you a portfolio of clinical pictures and arrange to have one of our people give you a demo. Or write or call us direct. We'll send you brochures on this and other models, and will give you your own set of clinical pictures and a bibliography on gated scintigraphy. If you wish, we'll even make you a Brattle owner. (This is the best part of our story.)

Brattle Instrument Corporation

243 Vassar Street • Cambridge, Massachusetts 02139 • 617-661-0300