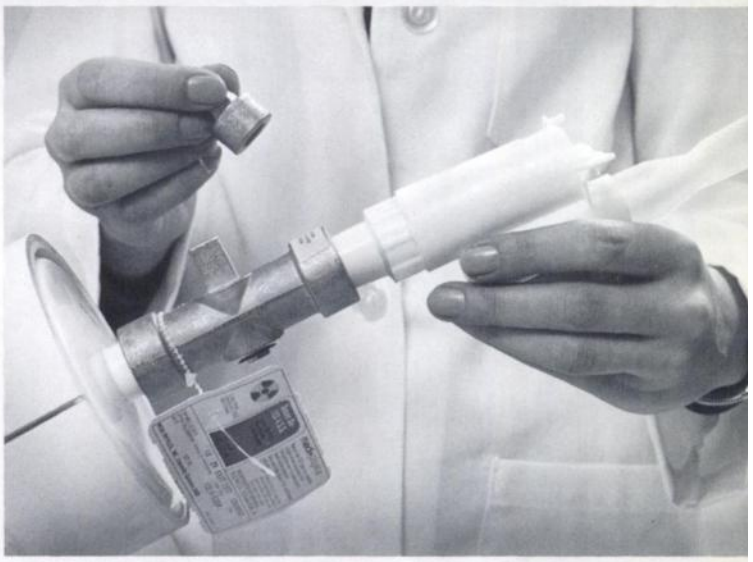
CONSIDERING XENON?



A versatile, disposable system

Xenon 133-V.S.S. includes everything you need for a xenon Xe 133 ventilation study. The completely disposable system includes the xenon Xe 133 contained in a valve-shield, a CO_2 absorber and bag for rebreathing and collection of expired xenon Xe 133, and a mouthpiece.

One system can be used for single-breath, rebreathing and wash-out studies.

The valve-shield can deliver either a concentrated or a dispersed dose.

Safe, convenient assembly

Xenon 133-V.S.S. can be assembled in less than a minute. Radiation exposure is minimized because there is no need to dilute the xenon gas or transfer it to a delivery system. After assembly, the ventilation study may begin immediately.

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

Xenon Xe 133-V.S.S. (Ventilation Study System)
Xenon Xe 133 Diagnostic

DESCRIPTION: The Xenon Xe 133-Ventilation Study System (V.S.S.) consists of a sealed plastic tube containing 10 millicuries ±20% of Xenon 133 gas at calibration time and date with less than 1% carrier Xenon in air.

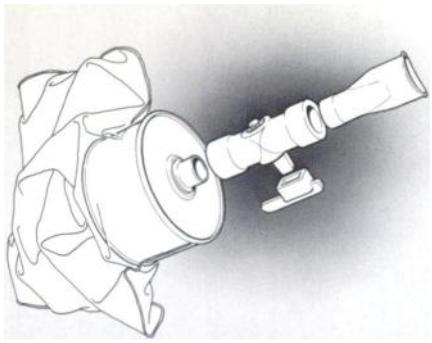
INDICATIONS AND USAGE: Study of pulmonary ventilation.

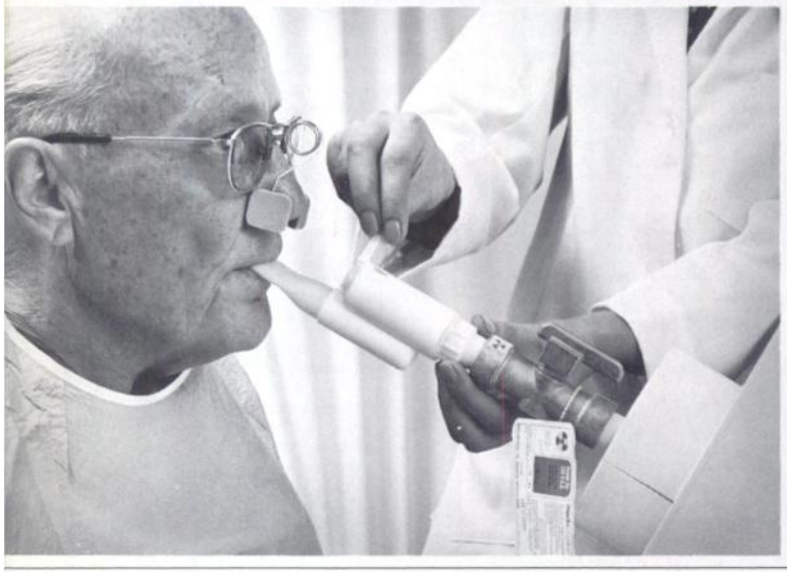
CONTRAINDICATIONS: None known.

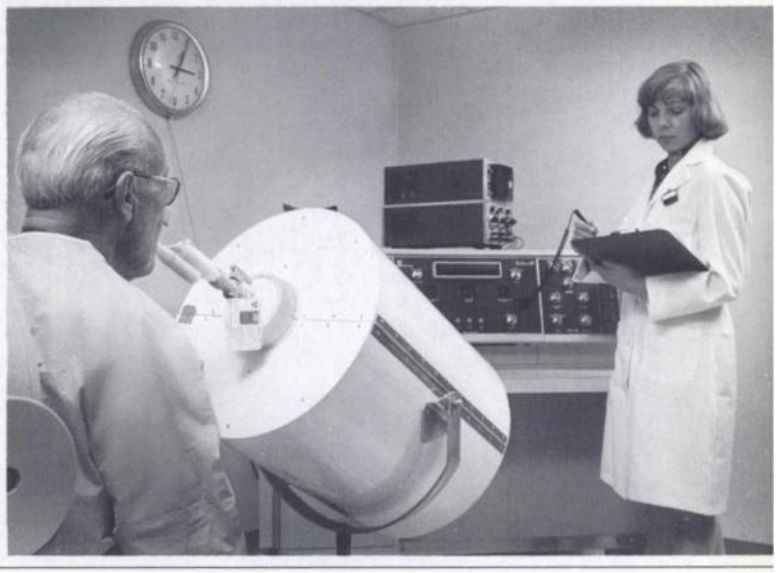
WARNINGS: Xenon Xe 133 should not be administered to children or to patients who are pregnant, or to nursing mothers unless the benefits to be gained outweigh the potential hazards. Ideally, examinations using radiopharmaceuticals, especially those elective in nature, of a woman of childbearing capability should be performed during the first few (approximately 10) days following the onset of menses.

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. Xenon Xe 133 should be used in pregnant women only when clearly needed.

CONSIDER MPI's XENON 133-V.S.S. (VENTILATION STUDY SYSTEM) Xenon Xe 133 diagnostic







True, single-unit dose

The MPI Xenon 133-V.S.S. contains enough xenon Xe 133 for one ventilation study. You only use what you need and are not "locked into" an expensive delivery system that requires daily use to justify costs. Another advantage of single-unit dosage is that the risk of cross infection via reusable apparatus is significantly reduced.

Reduced radiation exposure

The xenon Xe 133 is supplied in a sealed plastic container. The valve-shield is designed to prevent radiation leaks during transport and use. Additionally, a shield to reduce radiation exposure to patient and attending personnel and a valve assembly to minimize the escape of exhaled xenon during washout studies are available as accessory components.

PRECAUTIONS: Xenon Xe 133 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 and to the patients consistent with proper patient management.

Exhaled Xenon Xe 133 gas should be controlled in a manner that is in compliance with the appropriate regulations of the government agency authorized to license the use of radionuclides.

Xenon Xe 133 gas delivery systems, i.e., respirators or spirometers, and associated tubing assemblies must be leak-proof to avoid loss of radioactivity into the laboratory environs not specifically protected by exhaust systems.

Xenon Xe 133 adheres to some plastics and rubber and should not be allowed to stand in tubing or respirator containers for such unrecognized loss of radioactivity from the dose for administration may render the study non-diagnostic.

ADVERSE REACTIONS: Adverse reactions specifically attributable to Xenon Xe 133 have not been reported.

DOSAGE AND ADMINISTRATION: The recommended activity range for pulmonary ventilation studies in the average patient (70 kg) is 2 to 20 millicuries (0.03 to 0.3 millicuries/kg).

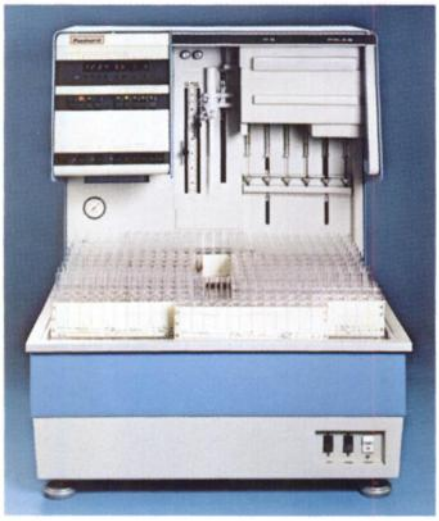
HOW SUPPLIED: Each Ventilation Study System (V.S.S.) contains Xenon 133 in a sealed plastic tube containing 10 millicuries ±20% at calibration time and date stated on the label.

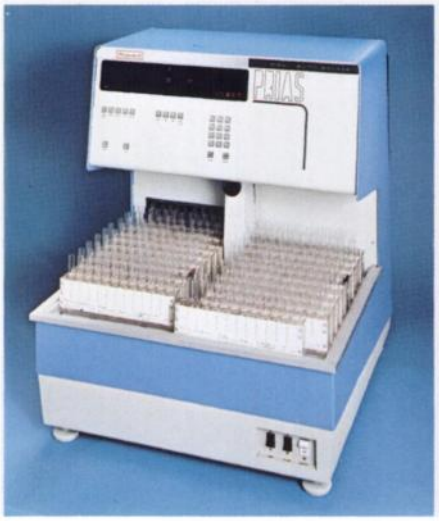
The sealed plastic tube is enclosed in a metal valve-shield which is sealed with a plastic shrink band to prevent accidental loss of Xenon 133 during shipping. A key is provided to remove the end plugs of the valve-shield and to turn the valve fitting which breaks the sealed plastic tube. The V.S.S. also includes a disposable mouthpiece and a breathing-collection bag with an attached CO_2 absorber canister.

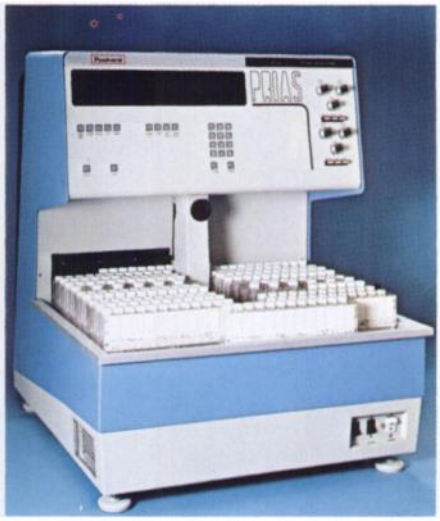
medi+physics™

Packard

PRIAS™







The New Standard Of Excellence In Radioassay

Packard proudly introduces PRIAS: a new generation of instruments designed to meet the present and future requirements of the clinical, hospital and research laboratory in radioassay sample preparation and counting.

While particularly well-suited for radioimmunoassay routines, the PRIAS instruments offer equally advantageous capabilities in other types of clinical and research procedures involving sample preparation, gamma counting or beta counting.

PRIAS consists of three independent benchtop instruments which can be used with a swinghead centrifuge to form a complete, integrated radioassay system:

- The PRIAS Sample Preparation Unit which provides automated pipetting, diluting and aspiration of samples in preparation for radionuclide counting;
- The PRIAS Automatic Gamma Counter which offers exceptional simplicity and ease of operation; and
- The PRIAS Miniature Vial Liquid Scintillation Counter which offers high performance combined with low cost per sample.

Add simple entry of programmed assays. Stored routines for excellent versatility. Unique Packard sample changer and sample transporter "cassettes" for minimum sample handling. Exclusive Pos-IDent™ patient sample identification that provides traceability of relevant data. Integrated data reduction. And many other features that *you* would have designed in—all at a price within the reach of even the most modestly equipped laboratories.

That's excellence. That's Packard PRIAS.

We invite you to inspect PRIAS and appreciate the benefits. Each PRIAS instrument is described in detail in its own color brochure, available on request.

Packard

PACKARD INSTRUMENT COMPANY, INC.
2200 WARRENVILLE RD • DOWNERS GROVE, ILL 60515
PACKARD INSTRUMENT INTERNATIONAL S.A.
RENGGERSTRASSE 3 • CH-8038 ZURICH, SWITZERLAND
SUBSIDIARIES OF AMBAC INDUSTRIES, INC.

Please send complete information on PRIAS™

- ☐ Bulletin No. 1227 (PRIAS Sample Preparation Unit)
- ☐ Bulletin No. 1228 (PRIAS Gamma Counter)
- ☐ Bulletin No. 1229 (PRIAS Liquid Scintillation Counter)
- ☐ Send brochures on all 3 instruments

Name_____

Title_____

Institution_____

Phone_____

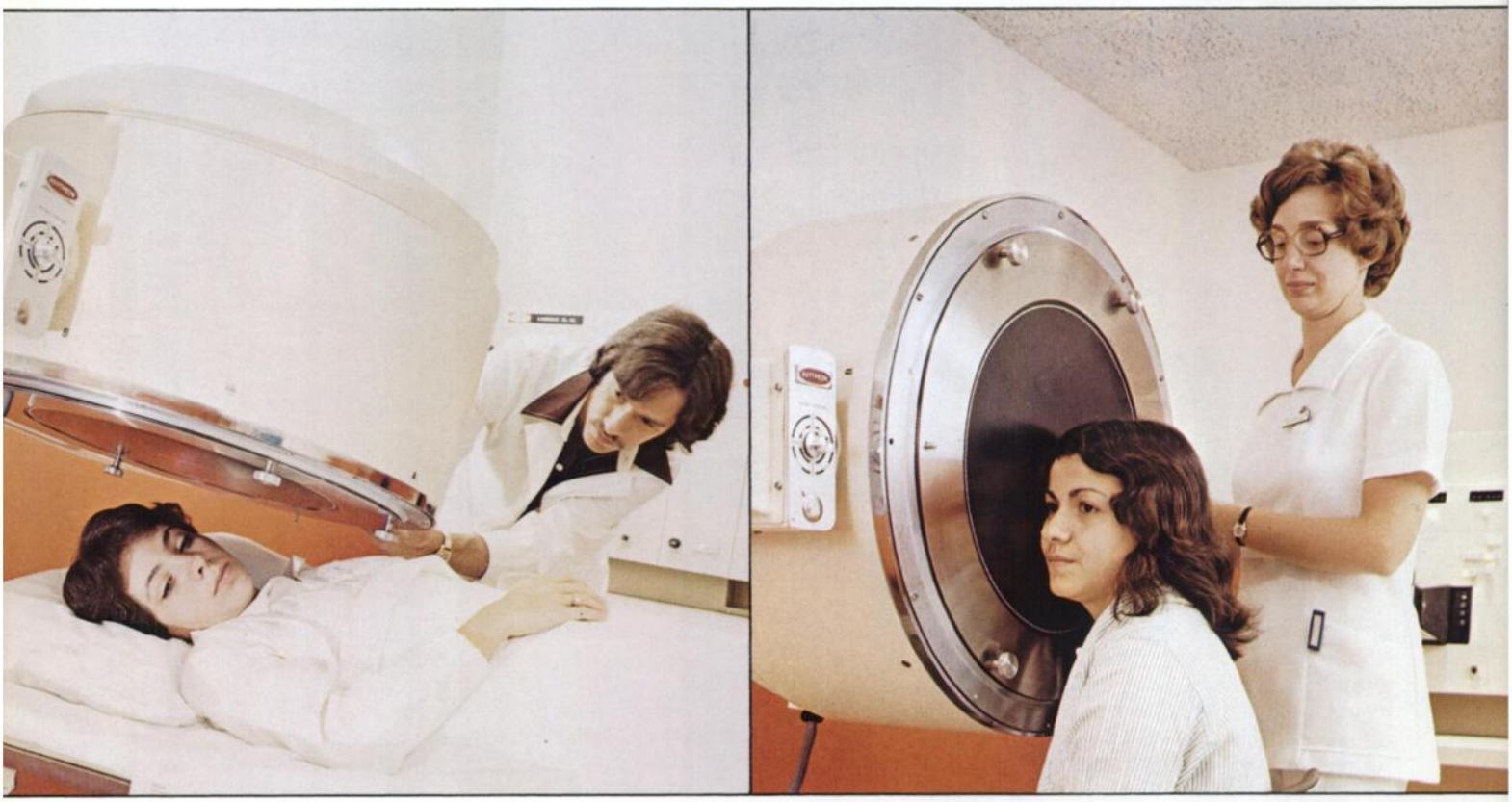
Address_____

City_____

State_____ Zip_____ 6/76

There's never been anything quite like Packard PRIAS. Discover the difference PRIAS instruments can make in your laboratory's radioassay capabilities.

Abington Memorial chose a camera for maximum image quality and convenience.



The choice: The Raytheon XL-91

The 520-bed Abington Memorial Hospital in Abington, PA, outside Philadelphia, has added a new Raytheon XL-91 gamma camera to its new wing. And right from start-up the XL-91 has been producing images of superior resolution, with much greater patient accessibility and operator convenience than other equipment.

The reasons for the XL-91's success at Abington are clear. At 16½ inches the XL-91 provides the widest undistorted field of view of any gamma camera. The XL-91's exclusive Autocomp circuitry achieves ±2% uniformity and — with as many as four memories — permits users to calibrate to four different isotopes or collimators.

Patient comfort, operator convenience, superior high resolution images. No wonder Abington Memorial had the XL-91 working a full patient schedule just days after delivery. And outstanding customer acceptance of the XL-91 — such as at Abington Memorial — is the reason Raytheon has had to expand its sales and service coverage greatly. From coast to coast, wherever you are, Raytheon is now near you.

If you'd like more information on the XL-91, write or phone Raytheon Company, Medical Electronics, 70 Ryan Street, Stamford, CT 06907. Telephone: 800-243-9058. We will put you in touch with your nearest Raytheon sales engineer.

RAYTHEON

The Raytheon XL-91...the 91-tube image maker.

A distinguished family.

NEN New England Nuclear
Radiopharmaceutical Division
Atomlight Place, North Billerica, Mass. 01862
Telephone 617-667-9531
Los Angeles: 213-321-3311

CANADA: NEN Canada Ltd., 2453 46th Avenue, Lachine, Que. H7T 3C9. Telephone: 514-636-4971. Telex: 05-821808
EUROPE: NEN Chemicals GmbH, D-6072 Dreieich, W. Germany. Daimlerstrasse 23. Postfach 401240. Telephone: (06103) 85034. Telex: 4-17993 NEN D

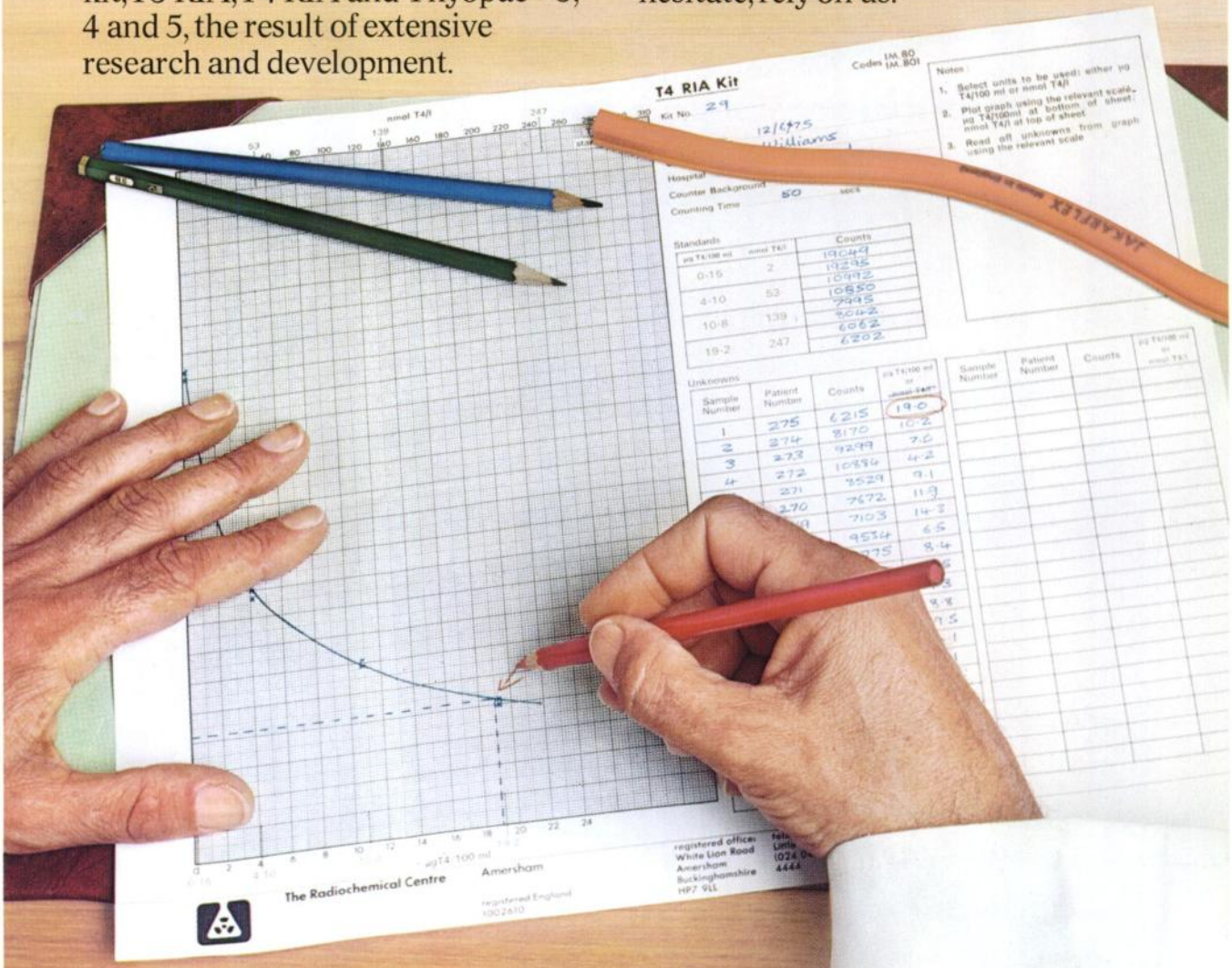
If you get an odd result when using one of our thyroid testing kits, there's something wrong with the patient.

Because when you use one of our kits you can depend on the accuracy and reproducibility of the test.

You can depend, too, upon the simplicity and reliability of every kit, T3 RIA, T4 RIA and Thyopac*-3, 4 and 5, the result of extensive research and development.

When it comes to performance you can rely on the highest standards of Production and Quality Control.

So whatever your needs in thyroid function testing, don't hesitate, rely on us.



Thyroid function kits

*Trademark

The Radiochemical Centre
Amersham

Full information is available on request.
The Radiochemical Centre Limited, Amersham, England. Telephone: 024-04-4444
In the Americas: Amersham Searle Corp. Illinois 60005. Telephone: 312-593-6300
In W. Germany: Amersham Buchler GmbH & Co KG, Braunschweig. Telephone: 05307-4693-97

0824

The ice is out at Mallinckrodt.

THE QUALITIES YOU LIKED IN OUR FROZEN PRODUCT ARE ALL HERE IN ITS LYOPHILIZED SUCCESSOR.

Mallinckrodt research has now developed a formula that combines the quality features of our frozen **TechneScan MAA** product with the convenience of lyophilization. Our goal was to match—as closely as possible—particle-size range and consistency specifications that had been established with the frozen process. In our search we were determined not to compromise current product performance or specifications of our frozen product for the sake of convenience.

The introduction of Mallinckrodt's **TechneScan MAA**—Lyophilized—represents the successful conclusion of our search for a specially designed freeze dry process.

No need to freeze. Simply refrigerate for these same quality features.

Safety . . .

TechneScan MAA is very well tolerated. Effective lung excretion half-life is approximately 3.8 hours—virtually complete biological excretion occurs in about 24 to 48 hours. Although the possibility exists, there is, to date, no evidence of antibody formation.

Increased Shelf Life . . .

The expiration date of each **TechneScan MAA** lyophilized kit is now one year after date of manufacture. This extended shelf life permits the convenience of larger inventories plus the cost savings of buying in quantity.

Reliable Consistency . . .

Reconstitution does not affect either particle quality or size distribution. The particle size does not change after the addition of pertechnetate solution. There is no tendency for the particles to hydrate and increase in size after labeling. WE ENCOURAGE MICROSCOPIC EVALUATION AND COMPARISON!

Controlled Particle-Size Range . . .

Specifications require that not less than 90% of the particles be 10 to 90 microns in size, with not more than 10% below 10 microns, and none greater than 150 microns. Our investigations indicate that, typically, 90% of the **TechneScan MAA** particles are in the 10-40 microns range. This controlled particle size range, plus the fact that there is no tendency to agglomerate, results in good images of lung perfusion.

High Tagging Efficiency . . .

The tagging efficiency experienced with the **TechneScan MAA** kit is remarkably consistent, always at or near 100% conversion of pertechnetate to labeled MAA, with no loss of the label for up to 24 hours.

Easy Preparation . . .

Preparation of **TechneScan MAA** Tc 99m is easy.
(1) Allow five minutes to reach room temperature.
(2) Add Tc-99m.
(3) Agitate gently.
(4) Wait fifteen minutes for high tagging efficiency.

That's all!

Economy . . .

The **TechneScan MAA** Kit doesn't need expensive accessory equipment. Up to 15 adult patients can be scintigraphed from the preparation of a single vial of **TechneScan MAA**. This helps reduce the procedure cost per patient.

For those who were acquainted with the frozen product, we give our assurance of continued satisfaction; for those who were unable to use frozen **TechneScan MAA** because of storage considerations, we invite your evaluation of our lyophilized formula. For further information contact your Mallinckrodt representative.

LYOPHILIZED TechneScan® MAA (AGGREGATED ALBUMIN (HUMAN)) LUNG SCAN KIT

Consult package insert for complete prescribing information, a summary of which follows the next page.

Mallinckrodt® NUCLEAR

RADIOPHARMACEUTICALS

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


Mallinckrodt
NUCLEAR
Mallinckrodt
NUCLEAR
TechneScan® MAA KIT
AGGREGATED
ALBUMIN (HUMAN) KIT
(Lyophilized)
Catalog No. 093
Store at 2°C – 8°C

The ice is out at Mallinckrodt.

THE QUALITIES YOU LIKED IN OUR FROZEN PRODUCT ARE ALL HERE IN ITS LYOPHILIZED SUCCESSOR.

TechneScan® MAA LYOPHILIZED (AGGREGATED ALBUMIN (HUMAN))

Multi-Dose Kit for the Preparation of Technetated (Tc 99m) Aggregated Albumin (Human)

Diagnostic—For Intravenous Use

DESCRIPTION

The **TechneScan MAA** 10-milliliter vial contains a sterile, pyrogen-free, lyophilized mixture of 2.0 milligrams of aggregated albumin (Human), 120 micrograms of stannous chloride dihydrate, 80 milligrams of lactose, 24 milligrams of succinic acid and 1.4 milligrams of sodium acetate. **TechneScan MAA** is prepared from albumin that was nonreactive when tested for hepatitis B antigen (HB_SAg) by radioimmunoassay. Each vial contains approximately $8 \pm 2 \times 10^6$ aggregated albumin particles. The particle size distribution of the aggregated albumin is such that not less than 90 percent are 10 to 90 microns in size. Typically, approximately 90 percent are within the 10 to 40 micron range. There are no aggregated albumin particles greater than 150 microns in size. Reconstitution of **TechneScan MAA** with sterile, non-pyrogenic sodium pertechnetate Tc-99m provides an aqueous suspension of technetium Tc-99m aggregated albumin, with a labeling efficiency of 90 percent or greater.

INDICATIONS AND USAGE

TechneScan MAA Tc 99m is indicated only for scintigraphic imaging of the lungs as an adjunct to other diagnostic procedures whenever information about pulmonary circulation is desired.

CONTRAINDICATIONS

TechneScan MAA Tc 99m should not be administered to patients with severe pulmonary hypertension.

The use of **TechneScan MAA** Tc 99m 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 of **TechneScan MAA** Tc 99m.

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 persons under the age of 18, to pregnant women or to nursing mothers unless the expected benefits to be gained outweigh the potential risks.

Ideally, examination using radiopharmaceuticals, especially those elective in nature, of women 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 particles into the systemic circulation.

The contents of the **TechneScan MAA** 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 **TechneScan MAA** Tc 99m depend upon maintaining tin in the reduced state. Any oxidants present in the sodium pertechnetate Tc 99m may thus adversely affect the quality of the preparation. Hence, sodium pertechnetate Tc 99m containing oxidizing agents is not suitable for preparation of **TechneScan MAA** Tc 99m.

The contents of the **TechneScan MAA** vial are sterile and pyrogen free. It is essential that the user follow the directions carefully and adhere to strict aseptic procedures during preparation of the radiopharmaceutical.

TechneScan MAA Tc 99m is a suspension and as such the particles will settle with time. Failure to mix the vial contents adequately before use may result in a non-homogenous suspension with a resulting non-uniform distribution of radioactivity in the lung.

It is also recommended that, because of the increasing probability of agglomeration with aging, a batch of Technetium Tc 99m aggregated albumin will 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. On reconstitution with pertechnetate Tc 99m, the contents of the vial should be mixed by gentle swirling to avoid changes in particle size. 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 occupational workers.

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 (70 kg) is 1 to 4 millicuries. The volume of the dose may vary from 0.4 to 1.0 ml.

The recommended number of aggregated albumin particles to be administered per dose is 200,000-1,200,000 with the suggested number being approximately 600,000.

HOW SUPPLIED

Catalog Number

093 **TechneScan MAA** Kit (Lyophilized)

Kit Contains:

5—Aggregated Albumin (Human) Reaction Vials (1 ml each)—for the preparation of Technetated (Tc-99m) Aggregated Albumin (Human)

Reaction Vial Contains (in lyophilized form):

- 2.0 mg Aggregated Albumin (Human) ($8 \pm 2 \times 10^6$ particles)
- 120 μg Stannous Chloride Dihydrate
- 80 mg Lactose
- 24 mg Succinic Acid
- 1.4 mg Sodium Acetate
- Hydrochloric Acid or Sodium Hydroxide is added for pH adjustment.

Each vial contains $8 \pm 2 \times 10^6$ aggregated albumin particles.

TechneScan MAA contains no preservatives; after reconstitution, the shielded vial should be stored at 2° to 8°C.

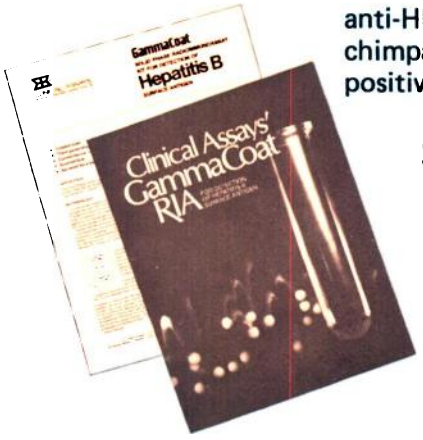
Included in each package is one (1) package insert, 5 radiation labels and 5 radioassay information string tags.

Mallinckrodt® NUCLEAR
RADIOPHARMACEUTICALS

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

GammaCoat Hepatitis B Surface Antigen RIA kit

Now Clinical Assays offers you a convenient, fast, economical and sensitive third generation radioimmunoassay for HB_sAg . . . with "no need for a bead." Years of applied research in antibody coated tube technology bring you this system that eliminates the bead-in-tube approach, for reliable and efficient results. The seamless tubes are uniquely coated with guinea pig anti-HB_s, and each kit includes [^{125}I] chimpanzee anti-HB_s and negative and positive controls.



Send for brochure and data sheet today.

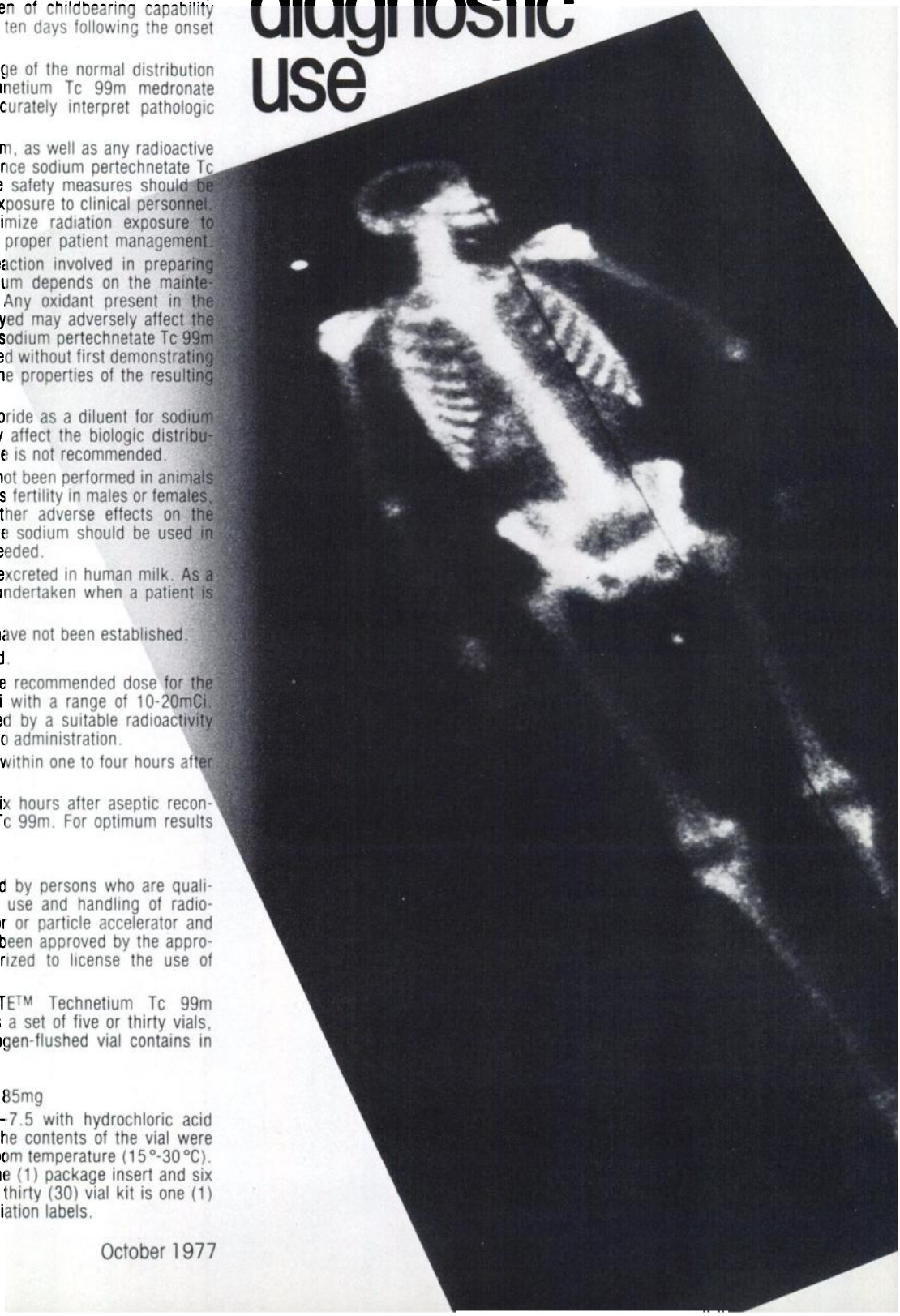
DIVISION OF TRAVENOL LABORATORIES, INC.

620 Memorial Drive • Cambridge, Mass. 02139
(617) 492-2526 • TWX: (710) 320-6460
Toll free: (800) 225-1241 • In Mass: (617) 492-2526

CANADA: Clinical Assays • 6405 Northam Drive • Malton, Ontario L4V 1J3 • (416) 677-6730 • Telex: 06968720
EUROPE: Clinical Assays • Parc Industriel, Rue Du Progres No. 12, Nivelles 1400, Belgium • (067) 228911 • Telex: 57344

ANNOUNCING

The first MDP bone kit for routine diagnostic use



OSTEOLITE™ Technetium Tc 99m Medronate Sodium Kit. (Formerly Known as MDP) For Diagnostic Use.

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.

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.

Catalog Number NRP-420

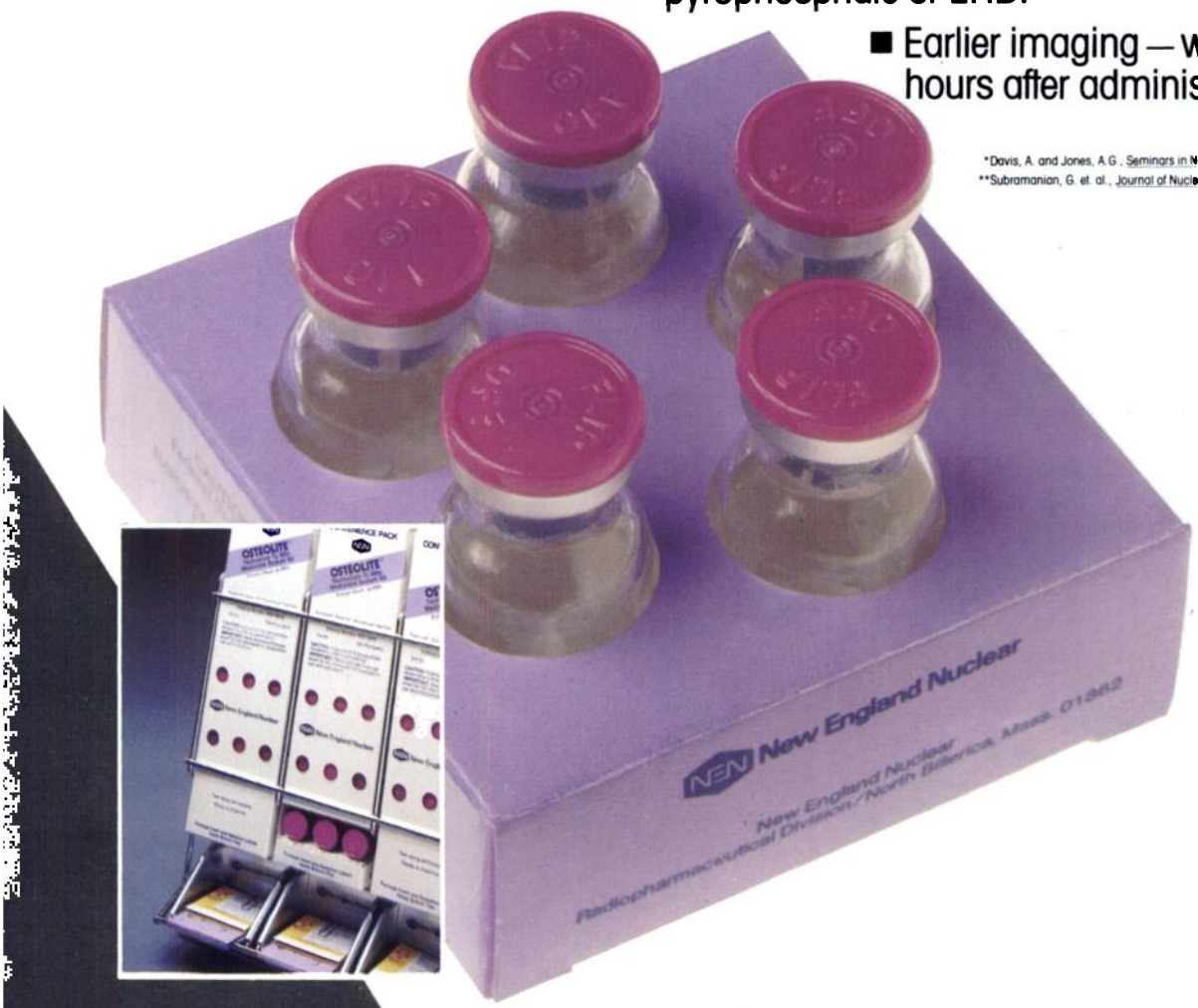
October 1977

OSTEOLITE™

Technetium Tc 99m Medronate Sodium Kit (MDP)

- Superior target to background ratio*
- Faster urinary excretion and blood clearance than pyrophosphate or EHDP**
- Earlier imaging — within one to four hours after administration

*Davis, A. and Jones, A.G., Seminars in Nuclear Medicine, Vol 6, No 1 (Jan 1976)
**Subramanian, G. et. al., Journal of Nuclear Medicine, Vol 16, No 8 (Aug 1975)



New England Nuclear
Radiopharmaceutical Division

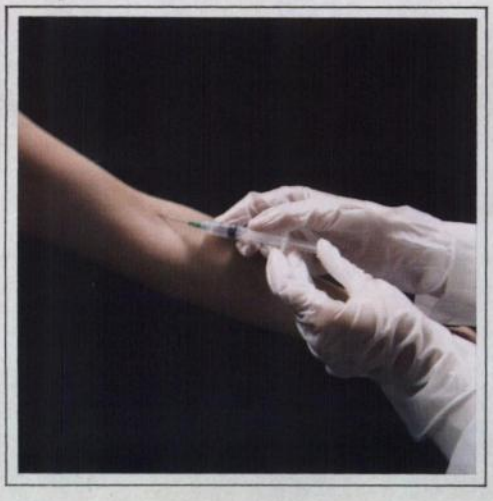
Atomlight Place, North Billerica, Massachusetts 01862
Call toll free: 800-225-1572
(In Massachusetts and International: 617-482-9595)
Canada: NEN Canada Ltd., 2453 46th Avenue, Lachine, Que. H8T 3C9,
Telephone: 514-636-4971, Telex: 05-821808
Europe: NEN Chemicals GmbH, D-6072 Dreieich, W. Germany,
Daimlerstrasse 23, Postfach 401240, Telephone: (06103) 85034, Telex: 4-17993 NEN D

NUCLEAR
DVT DIAGNOSIS

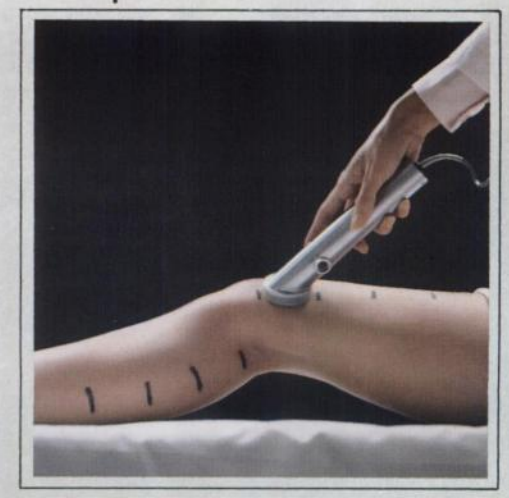
Certain,
Safe,
Simple:

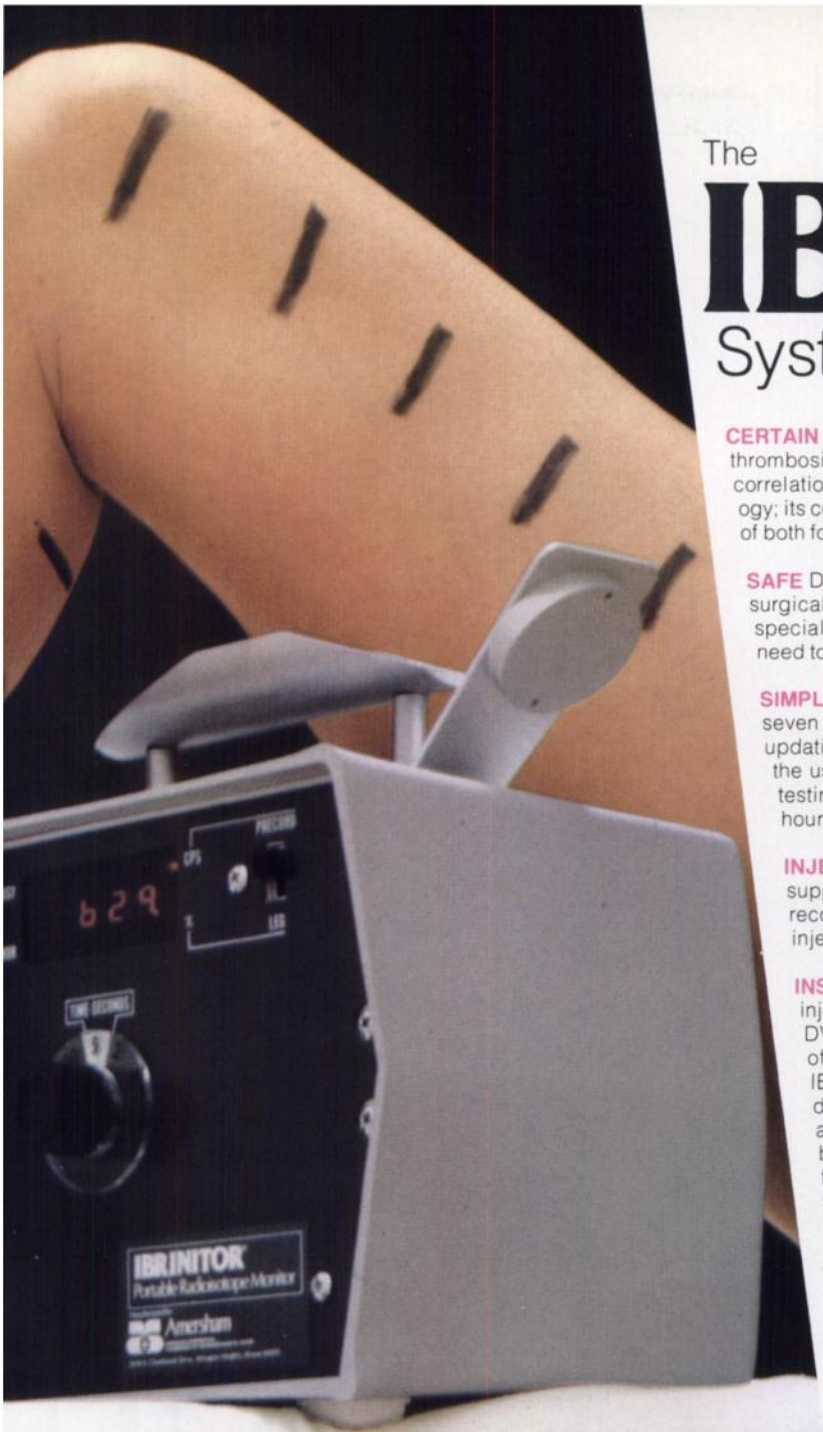
Read between the lines

Inject



Inspect





The IBRIN System

IBRIN®
Radionuclide-Labeled
(^{125}I) Fibrinogen (Human)
IBRINITOR™
Portable Radioisotope Monitor

CERTAIN The diagnostic accuracy of IBRIN for the detection of deep-vein thrombosis (DVT) has been confirmed in over 100 studies which show a 92% correlation with venography. IBRIN actively participates in thrombus physiology; its consistent clottability insures bioactivity and allows accurate detection of both forming and established thrombi.

SAFE DVT monitoring with the IBRIN System can be performed on medical, surgical and orthopedic patients. There is no need to move the patient to a special procedure area. The IBRIN System of DVT detection reduces the need to subject the patient to radiopaque venography.

SIMPLE IBRIN has a long *in-vivo* half-life, permitting monitoring for up to seven days without additional injections. Serial monitoring allows constant updating of the patient's status. IBRIN emits low energy radiation enabling the use of a lightweight isotope monitor such as the IBRINITOR for rapid testing of a large number of patients. Monitoring can begin within three hours after injection and results can be confirmed within twenty-four hours.

INJECT IBRIN, a Radionuclide-Labeled (^{125}I) Fibrinogen (Human), is supplied freeze-dried for convenient storage and extended stability. It is reconstituted immediately prior to injection. The patient is intravenously injected with 100μCi of IBRIN prior to testing.

INSPECT Initial monitoring can be performed three hours after the IBRIN injection. The IBRINITOR is specifically designed and built for detecting DVT. Sophisticated electronic design assures reliable accumulation of statistically valid data and eliminates most operator error. The IBRINITOR has a continuous stage design that requires all the correct data in the correct order before giving results. A digital data display and built-in printout insure ease and accuracy of data collection. Push button controls on the detector probe are provided for quick, accurate testing. The probe design includes an angled detector head to facilitate positioning for maximum operator convenience and patient comfort. The IBRINITOR is powered by rechargable Ni-Cd batteries. A source is provided for calibration convenience and the complete unit weighs less than eight pounds.

DETECT The IBRIN System includes a patient data sheet which provides a convenient display of printout tape and graphical representation of data for the physician's interpretation and diagnosis.

We will be glad to help you explain the benefits of the IBRIN System to your surgical staff. Write or phone Amersham for complete details.

See following page for brief summary of package insert.

Detect

Amersham
AMERSHAM CORPORATION:
A SUBSIDIARY OF THE RADIOCHEMICAL CENTRE

2636 S. Clearbrook Dr., Arlington Heights, IL 60005
312/593-6300 or 800/323-0668 (Toll free)

In Canada
505 Iroquois Shore Rd., Oakville, ONT L6H 2R3
416/842-2720 or 800/261-5061 (Toll free)

C777112

The

IBRIN System

IBRIN®
Radionuclide-Labeled
(^{125}I) Fibrinogen (Human)
IBRINITOR™
Portable Radioisotope Monitor

INDICATIONS
IBRIN is indicated for use in prospective studies for the early detection and subsequent monitoring of developing deep-vein thrombosis and in diagnostic studies for the detection of established thrombosis in the legs.

A. The IBRIN [Radionuclide-Labeled (^{125}I) Fibrinogen (Human)] test is indicated in patients with signs and/or symptoms suggestive of deep-vein thrombosis with or without associated pulmonary embolism or in patients with pulmonary embolism, with or without evidence of peripheral deep-vein thrombosis. In patients with established, old or "inactive" thrombi, the test will be positive only if radionuclide-labeled fibrin deposition occurs in a sufficient quantity to allow detection. Its use is not contraindicated in patients on anticoagulants.

B. The IBRIN [Radionuclide-Labeled (^{125}I) Fibrinogen (Human)] test is indicated for the detection of thrombus formation in patients undergoing major orthopedic or other surgical procedures, myocardial infarction, pulmonary disease, malignant disease and other medical conditions known to predispose to thromboembolism.

CONTRAINDICATIONS
There are no known contraindications to the use of IBRIN. However, it should be noted that the iodides given to block the uptake of ^{125}I by the thyroid gland are contraindicated in patients with a known sensitivity to the iodides.

WARNINGS
This radiopharmaceutical should not be administered to patients under 18 years of age, to patients who are pregnant, or to patients who are lactating, unless the information to be gained outweighs the potential risk.

Ideally, examinations using radiopharmaceuticals, especially those elective in nature, of a woman of child bearing capability should be performed during the first few (approximately 10) days following the onset of menses. Nursing mothers should substitute formula feeding after the administration of Fibrinogen ^{125}I.

Extraordinary precautions have been taken in the preparation of IBRIN [Radionuclide-Labeled (^{125}I) Fibrinogen (Human)] to eliminate the possible transmission of hepatitis. Nevertheless, the remote risk of hepatitis associated with the administration of Radionuclide-Labeled (^{125}I) Fibrinogen (Human) cannot be entirely eliminated. The finding of viral hepatitis in any patient up to six months after the administration of IBRIN should be reported to Amersham for further evaluation, since there are numerous possible sources of hepatitis infection.

PRECAUTIONS
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.

This drug contains radioactive materials which must be handled only by qualified personnel in conformity with Nuclear Regulatory Commission, agreement state, or other appropriate government regulations. Care must be taken to avoid excessive exposure to its radiation. Shielding or equivalent radiation protective measures must be used.

This product is prepared from units of human plasma which have been tested using RIA methods and found non-reactive for Hepatitis B surface antigen. Approved detection methods are not sensitive enough to detect all infectious units of blood or all possible cases of hepatitis. However, IBRIN has been prepared from single donor plasma and has been injected into recipients without incidence of fibrinogen related Hepatitis B as evidenced by periodic physical examination and laboratory testing (liver profile, CBC, and Hepatitis B surface antigen and antibody by radioimmunoassay) of the recipients.

There are a number of clinical circumstances requiring consideration in the interpretation of the test results. (See complete Package Insert.)

Fibrinogen ^{125}I scanning should preferably be performed prior to venography if both procedures are contemplated, since venography may cause increases in count rate making interpretation of post-venography monitoring data difficult.

Adequate reproduction studies on animals have not been performed to determine whether this drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. Radionuclide-Labeled (^{125}I) Fibrinogen (Human) should be used in pregnant women only when clearly needed.

ADVERSE REACTIONS
There has been no reported incidence of allergic or anaphylactic reactions following the intravenous administration of IBRIN.

Amersham
AMERSHAM CORPORATION:
A SUBSIDIARY OF THE RADIOCHEMICAL CENTRE

2636 S. Clearbrook Dr., Arlington Heights, IL 60005
312/593-6300 or 800/323-0668 (Toll free)

In Canada
505 Iroquois Shore Rd., Oakville, ONT L6H 2R3
416/842-2720 or 800/261-5061 (Toll free)

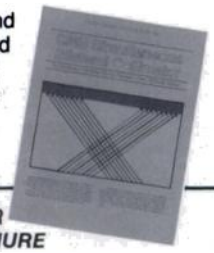
MULTIPLE, SIMULTANEOUS

IMAGING

WITH THE CMS BILATERAL COLLIMATOR

END SYSTOLE END DIASTOLE

Simultaneous, dual, end systolic and end diastolic multiple gated images. Selected from a sequence of eleven intervals. Study courtesy of S.M. Spies, M.D. and J.L. Quinn III, M.D., Northwestern Memorial Hospital.

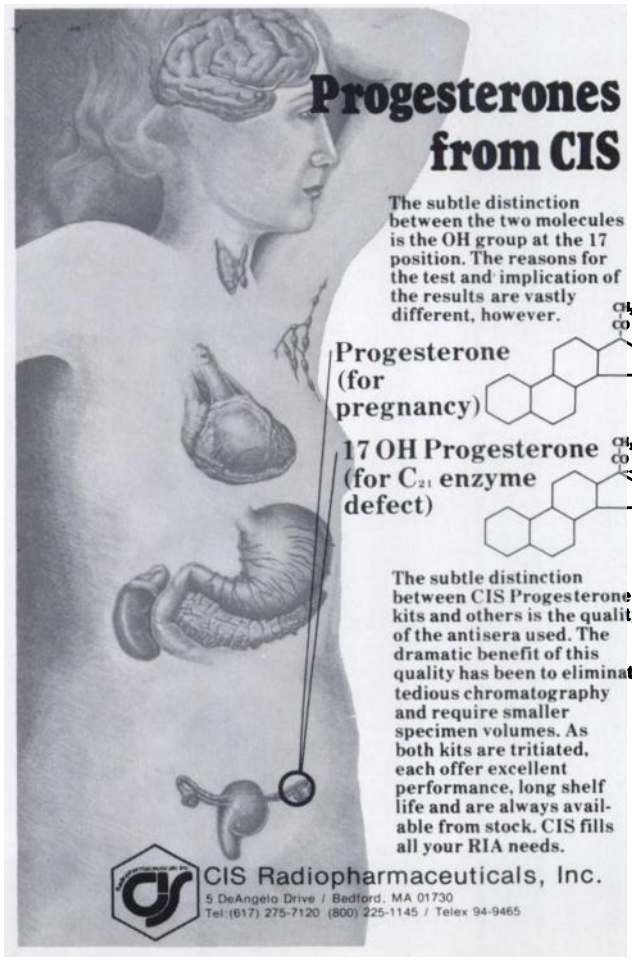


CMS

WRITE FOR BROCHURE

Cardiac Medical Systems
3710 Commercial Ave., Northbrook, IL 60062
Tel. (312) 564-4644

77211



After one million* doses, TechneColl® keeps boiling along.

A time-tested formula. An outstanding performance record.
Have your Mallinckrodt Representative demonstrate the difference!

TechneColl® Sulfur Colloid Kit

for the preparation of Technetium Tc99m Sulfur Colloid

*Based on an estimated average of two patients dosed per vial.

See next page for brief summary.

Mallinckrodt
NUCLEAR

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

TechneColl®

Kit for the Preparation of Technetium Tc-99m Sulfur Colloid

DESCRIPTION

The kit contains all of the non-radioactive reagents required to prepare a sterile, non-pyrogenic preparation of Technetium Tc 99m Sulfur Colloid suitable for direct intravenous injection. When sterile, pyrogen-free Sodium Pertechnetate Tc 99m is added to the reaction vial, Technetium Tc 99m Sulfur Colloid is formed with the non-radioactive reagents.

ACTIONS

Following intravenous administration, Technetium Tc 99m Sulfur Colloid is rapidly cleared by the reticuloendothelial system from the blood with a nominal clearance half-time of approximately 2½ minutes. Uptake of the radioactive colloid by organs of the reticuloendothelial system is dependent upon both their relative blood flow rates and the functional capacity of the phagocytic cells. In the average normal patient 80 to 90% of the injected colloidal particles are phagocytized by the Kupffer cells of the liver, 5 to 10% by the spleen and the balance by the bone marrow.

INDICATIONS

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

CONTRAINDICATIONS

None.

WARNINGS

The contents of the double-compartment dose syringes are intended **only** for use in the preparation of Technetium Tc 99m Sulfur Colloid 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.

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.

This radiopharmaceutical preparation should not be administered to patients who are pregnant or during lactation 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 menses.

PRECAUTIONS

The components of the kit are sterile and nonpyrogenic. It is essential that the user follow the directions carefully and adhere 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 pertechnetate solutions containing more than 10 micrograms/ml of aluminum ion not be used for formation of the Technetium Tc 99m Sulfur Colloid.

Technetium Tc 99m Sulfur Colloid 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 not be used after six hours from the time of formulation.

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

ADVERSE REACTIONS

Hypersensitivity reactions, including anaphylaxis, have been reported in patients receiving sulfur colloid preparation. Although rare, pyrogen reactions have been reported following the administration of the drug stabilized with gelatin. Arm pain following injection has been reported.

DIRECTIONS FOR PREPARATION

Note: Read complete directions thoroughly before starting preparation procedure.

PROCEDURAL PRECAUTIONS

1. All transfer and vial stopper entries must be done using aseptic technique.
2. The **TechneColl** Kit should be stored at room temperature (approximately 25°C).
3. All **TechneColl** Kit reagents must be at room temperature before use. At lower temperatures, there may be evidence of undissolved gelatin in the double-compartment syringes. The syringes should be allowed to stand at room temperature (approximately 25°C) until the gelatin returns to solution. **Do not warm the syringes in water bath or incubator.**
4. The water bath used for heating the contents of the Reaction Vial must be at a continuous **rolling** boil during the two heating steps of the preparation procedure. The Reaction Vial should be in direct contact with the rolling boil water of the bath, and the level of the bath must be at least even with the level of the contents of the Reaction Vial.
5. If the Reaction Vial is incubated in a lead safe, the temperature of the safe should be allowed to reach the temperature of the water bath before incubating the Reaction Vial.
6. **As a result of heating the contents of the closed Reaction Vial, internal pressure will be created causing some resistance when injecting the contents of Syringe II into the Reaction Vial. The resistance may be minimized either by employing a syringe to evacuate approximately 20 ml of air from the Reaction Vial before the addition of the generator eluate (Step 3) or by venting the Reaction Vial with a sterile needle prior to injecting the contents of Syringe II into the Reaction Vial (Step 7). If venting is used, remove vent needle before returning Reaction Vial to water bath.**
7. When attaching the disposable needles to the double-compartment syringes, care must be taken to insure that the needles are firmly attached to the syringes.

PROCEDURE: for preparing Technetium Tc 99m Sulfur Colloid

Note: The radioactive material should be shielded at all times during preparation.

1. Prepare a **rolling** boil water bath.
2. Fill in the necessary information on the "Caution: Radioactive Material" label and place directly over the yellow area provided on the Reaction Vial label. Attach the string tag to the neck of the Reaction Vial. **Place the Reaction Vial in a lead Dispensing Shield fitted with a lid and with a minimum wall thickness of ⅛ inch.**
3. After swabbing the rubber stopper of the Reaction Vial with an appropriate antiseptic, aseptically inject a calculated volume of technetium-99m generator eluate or prepackaged sodium pertechnetate Tc-99m into the Reaction Vial. The volume of pertechnetate solution used must be between 0.1 and 5.0 ml. (Withdraw a 5 ml or greater volume of air to relieve pressure.)
4. Aseptically assemble Syringe I* and aseptically inject the contents into the Reaction Vial.
5. Invert the Reaction Vial several times to obtain complete mixing.

*Place the disposable needle on the syringe by pressing on firmly with a slight twisting motion.

6. Immediately transfer the Reaction Vial to a lead (minimum wall thickness of ⅛ inch) Boiling Shield which has been equilibrated to the temperature of the **rolling** boil water bath. This may be accomplished by placing the shield in the rolling boil bath a few minutes prior to transferring the Reaction Vial. The level of the water bath must be even with or above the contents of the Reaction Vial. Allow the Reaction Vial to incubate for 8 minutes.
7. Aseptically assemble Syringe II.* Immediately after the incubation period (Step 6) remove the Reaction Vial from the Boiling Shield and place in the Dispensing Shield. Swab the vial stopper with an appropriate antiseptic and aseptically inject the contents of the Syringe II into the Reaction Vial.
8. **Immediately** return the Reaction Vial to the Boiling Shield and incubate for 2 minutes.
9. Remove the Reaction Vial from the Boiling Shield and place in the Dispensing Shield. Allow the contents of the Reaction Vial to cool for approximately 15 minutes to reach body temperature. The final Technetium Tc 99m Sulfur Colloid preparation should be clear to slightly hazy in appearance, but there should be no flocculent present. If a precipitate is visible, the preparation should not be used.
10. Calculate the radioactivity concentration of the Technetium Tc 99m Sulfur Colloid and fill in the appropriate information on the string tag. **Do not use this material after 6 hours from time of preparation.**

Calculation of Radioactivity Concentration

$$\text{mCi/ml of colloid} = \frac{\text{mCi of Tc99m added}}{\text{ml of Tc99m added} + 5\ \text{ml}^{**}}$$

**The total delivered non-radioactive reagent volume employed in the preparation is 5 ml.

DOSAGE AND ADMINISTRATION

The suggested intravenous dose range used in the average patient (70 kg) is 1 to 8 millicuries of Technetium Tc 99m Sulfur Colloid.

When orally administered, the Technetium Tc 99m Sulfur Colloid is not absorbed from the G.I. tract.

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

HOW SUPPLIED

Catalog Number	TechneColl Kit
090	Package contains—5 Preparation Units for the preparation of Technetium Tc 99m Sulfur Colloid.

Each Preparation Unit Contains:

1—Reaction Vial. Contents 2.0 ml; each ml contains 50 mg phosphoric acid.

1—Syringe I (2-compartment disposable syringe)—Compartment A, 1.1 ml. Each ml contains 12 mg gelatin and 9 mg sodium chloride. Compartment B, 0.55 ml. Each ml contains 12 mg sodium thiosulfate.

1—Syringe II (2-compartment disposable syringe)—Compartment A, 0.6 ml. Each ml contains 36 mg gelatin and 9 mg sodium chloride. Compartment B, 1.0 ml. Each ml contains 544 mg sodium acetate and 4 mg disodium edetate.

2—Disposable needles.

1—Pressure-sensitive "Caution—Radioactive Material" label.

1—Radioassay information string tag.

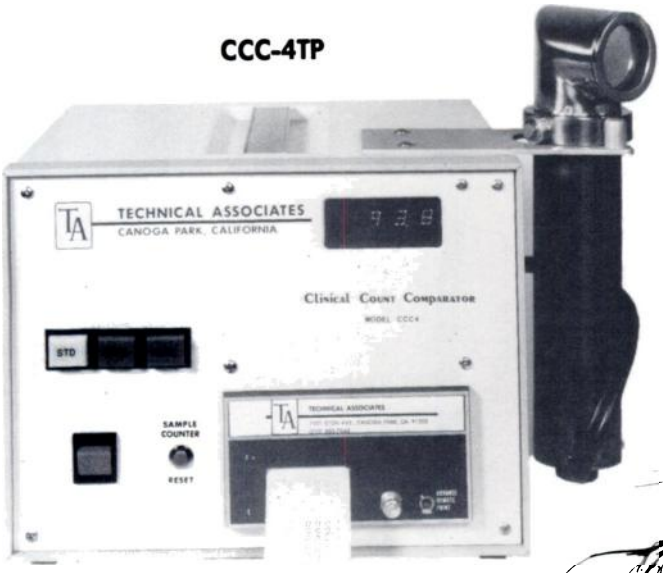
Mallinckrodt NUCLEAR

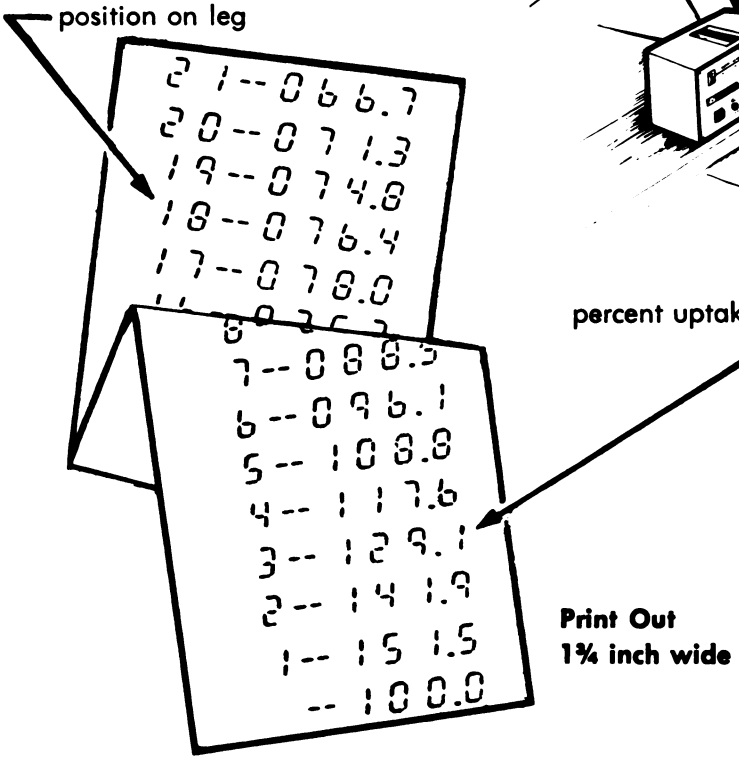
Mallinckrodt, Inc.
P. O. Box 5840
St. Louis, MO 63134

thrombosis

detection of DVT using I-125 fibrinogen

CCC-4TP





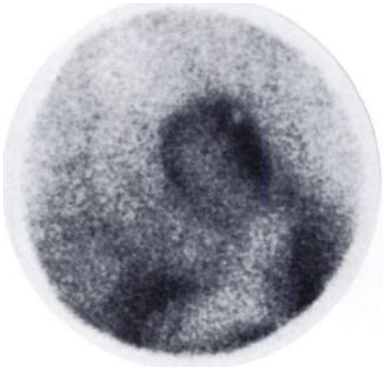
Print Out
1¾ inch wide

- 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

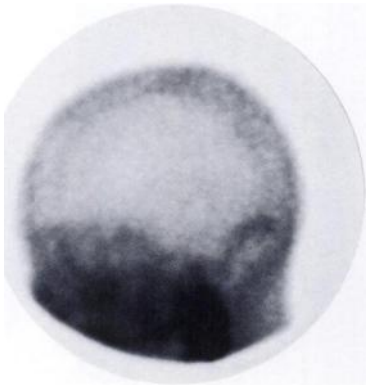
TECHNICAL ASSOCIATES

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

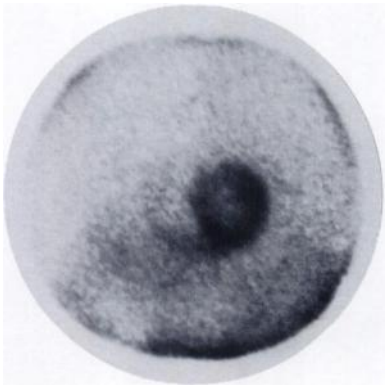
Think mobility.



Adult heart LAO view ^{201}Thallium



Adult brain left lateral view ^{99m}Tc DTPA



Adult heart LAO view ^{201}Thallium

Dyna®Mo is the mobile DynaCamera that extends the scope of nuclear diagnosis throughout your hospital.

The Dyna Mo mobile scintillation camera is fully powered with continuously variable speeds up to 2 mph. Dyna Mo is compact, maneuvers easily around corners, through cramped quarters, up inclines and between beds.

But think about versatility and performance, too. Versatility means Dyna Mo is capable of performing every nuclear study you need from cardiac work to bone imaging. The Dyna Mo detector positions easily for any organ view with minimum discomfort to the patient.

Dyna Mo performance is unexcelled: 2.1mm (1/12") resolution, ±10% uniformity, ±3% linearity, 100,000 CPS (in a 20% window).

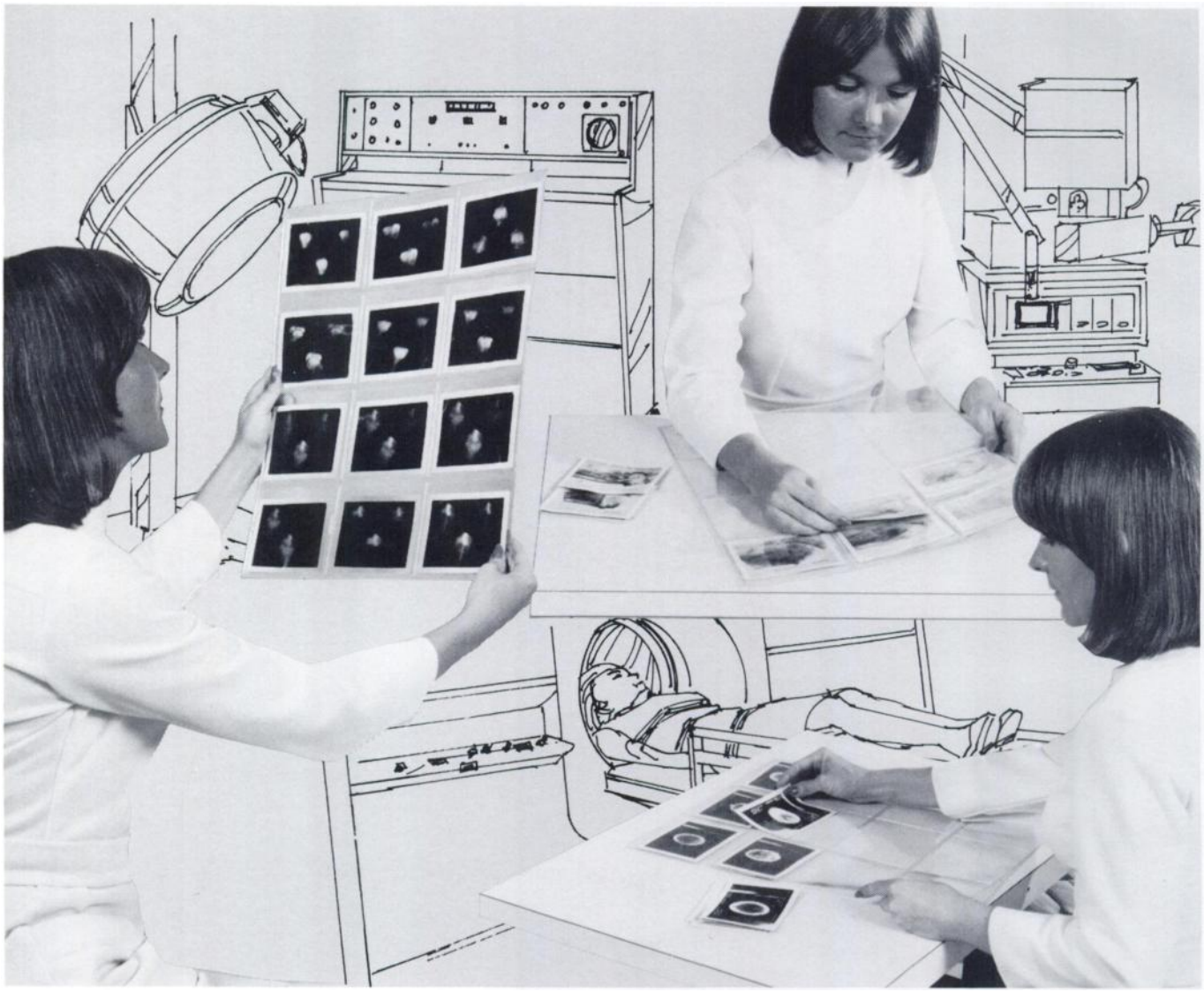
It features quick-change collimators, ECG gating, exclusive five-motion detector head, integral tape recorder and a list of options and accessories unmatched by any other mobile camera. Dyna Mo contains the most comprehensive nuclear capabilities ever put on wheels.

Dyna Mo is another example of Picker's synergy—the complete interfacing of systems and services for improved diagnostic visualization. Send for a catalog or contact your local Picker representative. Picker Corporation, 12 Clintonville Road, Northford, CT 06472.

PICKER®

ONE OF THE C.I.T. COMPANIES

Millions for CT, Ultrasound, and Nuclear Medicine Systems! Why not a few cents for Viewing and Filing?



Use Radx's NEW plastic film holder to organize, view and file Polaroid/100 mm images

Many CT, Ultrasound and Nuclear Medicine imaging devices use a Polaroid format for image reproduction. These images are the end result of a very significant investment of both time and money by the medical community, yet they present an interesting problem in viewing and storage.

Radx has developed a pocketed (4 rows of 3 pockets per row) plastic film holder in a 14" × 17" format to provide you with a means of organizing, viewing and filing your Polaroids. The holder may be divided between rows to allow you to file 3, 6, 9, or 12 films per holder without wasting the remaining. The cost??? As little as 6¢ per image.

For maximum protection and the highest in optical clarity, specify Radx, the leader in quality film holders.

Other sizes available:

Polaroid	14 × 17 (pocketed)
105 mm	14 × 17
100 mm	14 × 17 (pocketed)
90 mm	14 × 17
70 mm	14 × 17
70 mm	$8\frac{1}{2} \times 12\frac{1}{2}$
35 mm	5 × 8

RADX

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

Diagnostic Biochemistry Inc.

^{125}I METHOTREXATE –RIA KIT

FEATURING

- Rapid, simple procedure • Precalibrated Standards • Control serum provided
- 10 picogram sensitivity in serum, plasma, cerebrospinal fluid and urine.
- ^{125}I tracer stable for two months. No tracer binding by serum proteins in the dilutions of this assay.
- High specificity; less than 0.005% cross reactivity with folic acid, folinic acid and 5-N-methyltetrahydrofolic acid
- Separation of bound tracer does not require charcoal
- Available in 100 and 200 tube kits

RIA ASSAY PROCEDURE — 5 Easy Steps

STEP 1
Pipette standards patient sample or control

STEP 2
Add ^{125}I Methotrexate derivative

STEP 3
Add Methotrexate antiserum

INCUBATE ALL TUBES FOR 45 MINUTES

STEP 4
Add precipitant

STEP 5
Spin, decant and count precipitate

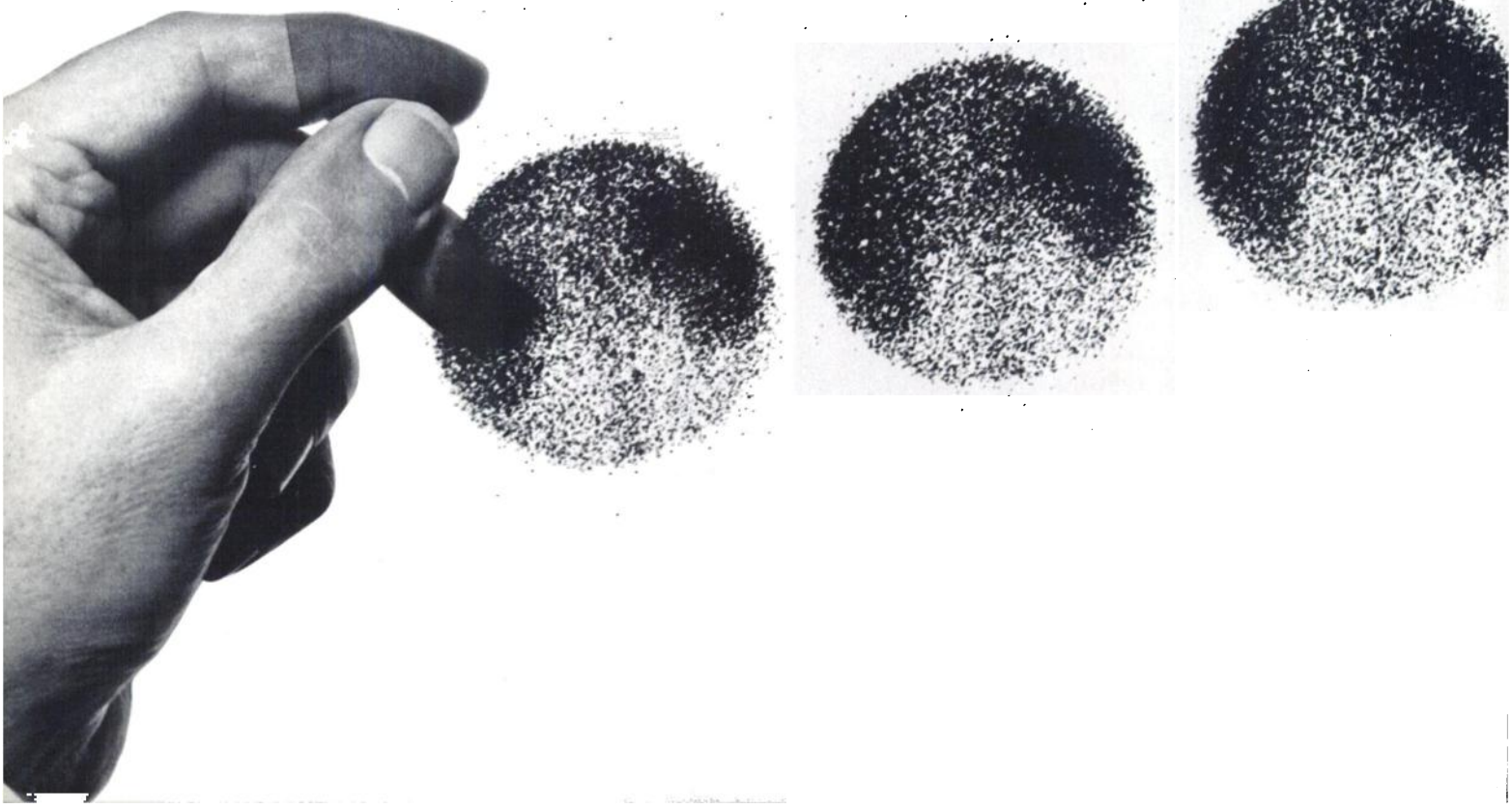
Also available:
^{125}I Folate
^{57}Co Vitamin B_{12}
^{125}I Digoxin-RIA
^{125}I T_4-RIA
^{125}I T_3 Uptake
^{125}I TSH-RIA
^{125}I Doxorubicin

For further information call or write:

Diagnostic Biochemistry Inc.

(714) 452-0950

10457-H ROSELLE STREET • SAN DIEGO, CA 92121



ENERGY. CLEARLY RECORDED.

Kodak films for nuclear medicine combine near-ideal emulsion characteristics with high image readability.

Kodak is keeping pace with the rapid progress of nuclear medicine. And the result is a family of high-quality films that can fit your equipment and diagnostic requirements.

You have a wide choice of single- and double-emulsion films with spectral sensitivities compatible with specific cathode-ray tube displays. Films for diagnostic imaging. Films for copying and duplicating. Personal monitoring films. Films that are made to provide high image quality, longevity, and economy.

Most outstanding is KODAK Film for Nuclear Medicine SO-179, a single-emulsion, high-contrast, orthochromatic film with excellent sensitivity in both the blue and green portions of the spectrum. An antihalation layer eliminates light scatter and bounce-back through the base to the emulsion.

Whatever your need—single, multiple, or dynamic imaging—Kodak has a film designed to help you get the most from your camera's capabilities.

Get the clear details from your Kodak Technical Sales Representative. Or contact your medical x-ray products dealer. Or write: Eastman Kodak Company, Dept. 740-B, Rochester, N.Y. 14650.

TURNING ENERGY INTO IMAGES

Kodak

RADIOGRAPHY • COMPUTERIZED TOMOGRAPHY
ULTRASOUND • NUCLEAR MEDICINE • THERMOGRAPHY

Your partner in **Quality Control**

SQUIBB Q.C. ANALYZER

Accurate

Displays percent of total radioactivity which appears as the bound or hydrolyzed fraction of radiopharmaceutical chromatographic separation. Measurement accuracy: ±0.3%. Self-contained, pre-programmed computer/counter designed to count, store, analyze and read out results digitally.

Easy

Simple-to-perform procedure. Isotope energy independent and can be used for the analysis of any radioisotope or radiopharmaceutical.

Rapid

Analysis completed in 5-15 minutes. Calculation of results automatically programmed internally, independently of operator.

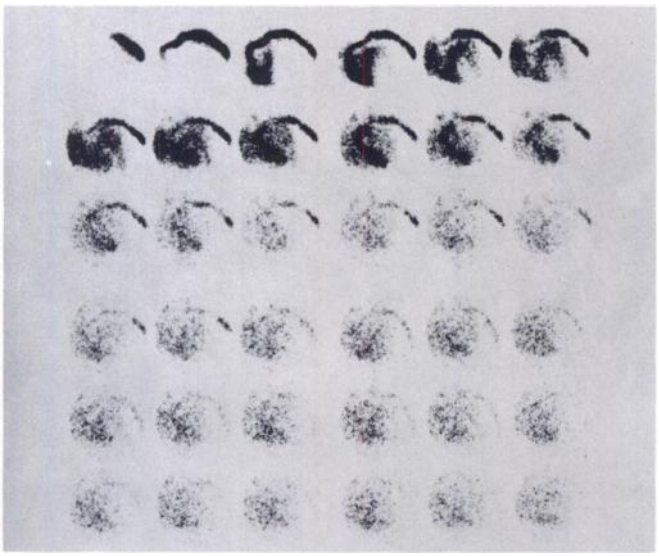
E. R. Squibb & Sons, Inc.
P.O. Box 4000
Princeton, N.J. 08540

Medotopes®
TWENTIETH ANNIVERSARY
SQUIBB®

Elscint's new MOBILE 1 gamma camera offers you the quality and performance of a stationary camera with the fluid mobility of a cat. It moves rapidly yet safely wherever needed. The detector head raises smoothly into position with fully automated two speed controls. Over *or under* the patient. Swings to either side or in front. The new MOBILE 1 camera is quiet and efficient to give you high quality results with maximum flexibility.

Mobile 1: Exceptional performance in a mobile camera

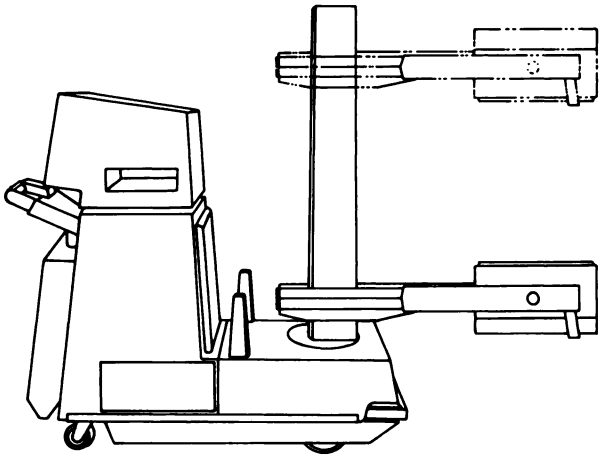
Results, of course, must be the ultimate measure of any diagnostic system. Here, Elscint is second to none. The MOBILE 1 provides a full 12″ FOV with bar resolution better than 3.2 mm. It images at rates



to 200,000 cps. (less than 1.5 μs deadtime) and its usable energy range extends beyond 200 KeV for use with 81^m Kr (190 KeV), 99^m TC (140 KeV) or 201 Tl (70 KeV), or other usable radionuclides within this range. It thus performs as a regular stationary camera for both static and dynamic studies as well as a mobile patient bedside unit. An optional data storage/replay system acquires and records at up to 150,000 cps for later replay or processing, adding time marks for reframing as fast as 100 frames/sec.

Mobile 1: Maximum maneuverability

Extreme ease and convenience of movement are major features of the MOBILE 1. Its under-30″ width and compact overall size enable passage through any doorway or narrow hall. Its low profile facilitates excellent forward visibility while in motion and its low center of gravity produces high stability even with full detector extension. Three speed forward and reverse drive and short-turning-radius power steering permit rapid long distance travel as well as precise



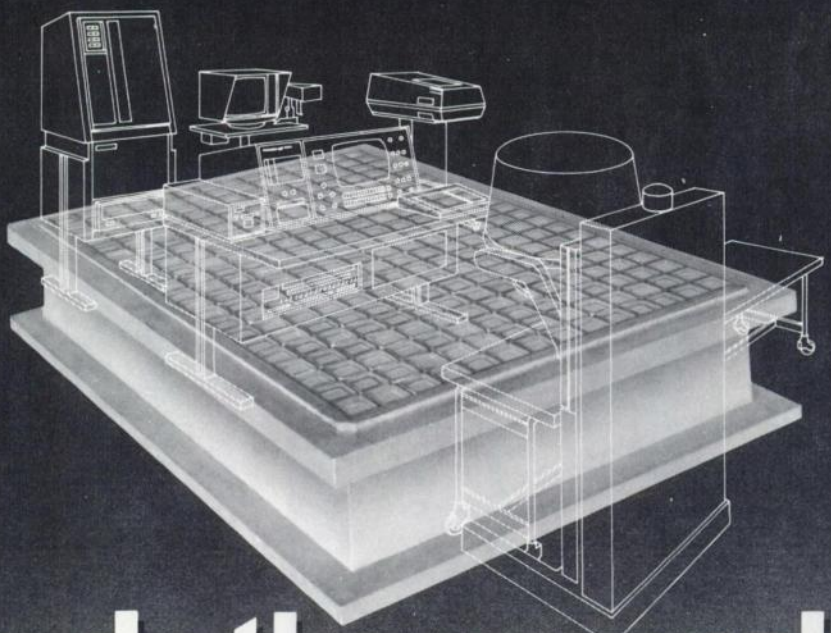
Designed for over *and under* patient imaging

positioning at bedside with safety interlocks provided to prevent accidental bumping into objects or people. The MOBILE 1 can pass over a 20 mm obstacle and climb a 10% slope rapidly yet will not run away on downslopes. Positive-locking brakes assure firm positioning and are automatically applied upon release of the control handle.

Mobile 1: Convenient controls for easy operation

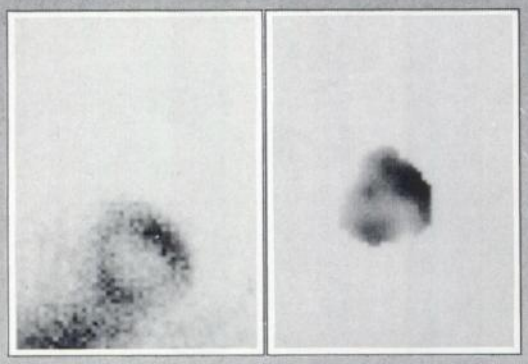
All of the operating features employed in our latest stationary cameras are provided in the Mobile 1 with the added convenience of a swivel-mounted operating console. Pushbuttons ease input of patient information, data recording, display control, scaler operation, and isotope selection. Patient rotation selection and region of interest are conveniently controlled as well. The camera's persistence scope faces the detector and moves with it for easy patient setup. Dual isotope operation is available as is a selection of up to 3 single-channel analyzers.

When it's safer, faster and easier to move the camera to the patient, you'll get maximum performance with the Elscint MOBILE 1 Gamma Camera.



We do the unusual with excellence

With our help the users of System Seventy-Seven are advancing the frontiers of nuclear cardiography and redefining the role that nuclear medicine can play in the noninvasive diagnostic assessment of hemodynamic function, performance of the myocardium, and coronary perfusion.



FOR EXAMPLE: Two studies, both performed on a Baird-Atomic System Seventy-Seven. Left, the patient has a proven inferior-wall myocardial infarct. This Tl-201 scan indicates an area of decreased myocardial perfusion. Scanning time, 12-15 min.; isotope cost, $80.88. Right, a regional ejection fraction image from the Tc-99M first pass study also shows a decrease in myocardial performance in the area of the infarct. Imaging time, 30-50 sec.; isotope cost, 35¢. Myocardial *perfusion* and myocardial *performance*. System Seventy-Seven performs both studies with excellence. Static cardiac imaging or dynamic cardiac quantitation — either capability or both — from Baird-Atomic.

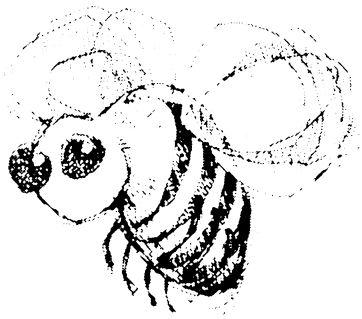
For more information on System Seventy-Seven and Baird-Atomic, call us, toll-free, at 800-225-1487, extension 6500. Today.

BA BAIRD-ATOMIC

Home Office: Baird-Atomic, Inc.
125 Middlesex Turnpike, Bedford, Mass. 01730
Tel. (617) 276-6000 — Telex: 923491 —
Cable: BAIRDCOBFRD

International Sales and Service:
BAIRD-ATOMIC (Europe) B.V. Veenkade 26-27-28a, The Hague, Holland.
Telephone: (070) 603807. Telex: 32324. Cable: BAIRDCO HAGUE
BAIRD-ATOMIC, LIMITED, East Street, Braintree, Essex, England.
Telephone: Braintree 628. Telex: 987885. Cable: BAIRTOMIC
BAIRD-ATOMIC, Ind. E Com., Ltda., Paulista, 2073-14 c/1412, 01311 Sao Paulo, SP, Brazil.
Telephone: (011) 289-1948. Telex: 01122401. Cable: BAIRDATOMIC SPAULO

A NISE IDEA



IN A HONEY OF A PACKAGE

It takes 8 times longer to make a collimator that has 6-sided holes. Is that such a good idea? If you're looking for a practical, efficient collimator designed specifically for low energy work . . . it's a very good idea. All **NISE** camera collimators have hexagonal holes for uniform resolution and maximum efficiency.

Another **NISE** idea is the insert type collimator that eliminates the need for space wasting carts. And these space saving collimators have the specifications to do the job right. With **NISE** ideas like these you can be happy as a bee.

For Scanners:

Special L.E. High Efficiency Collimators for use with all 3" or 5" detectors and ^{123} Iodine.

FWHM: 1/4" for ^{123} Iodine and 3/16" for $^{99\text{-}m}$Tc

Available for Abbott, EC-Scint, G.E., Picker, Ohio-Nuclear and Searle Rectilinear scanners.

For Gamma Cameras:

L.E. Fine Resolution	FWHM –	3 mm
L.E. High Resolution	FWHM –	4.6 mm
Diverging / Converging	"Di-Co"	
Converging Only		
Pinhole		

Available for all makes and models of Gamma Cameras except Searle LFOV.

NISE, Inc.

NUCLEAR INSTRUMENT SERVICE & ENGINEERING

United Kingdom and Rep. of Eire
INTERNUCLEAR
18 BATH ROAD
SWINDON, WILTSHIRE, SN1 4BA
ENGLAND (TEL. 0793-30579)

Benelux and West Germany
VEENSTRA INSTR. B.V.
SCHAAPSTREET 5 EEXT. (DR.)
NETHERLANDS (TEL. 05926-1203)

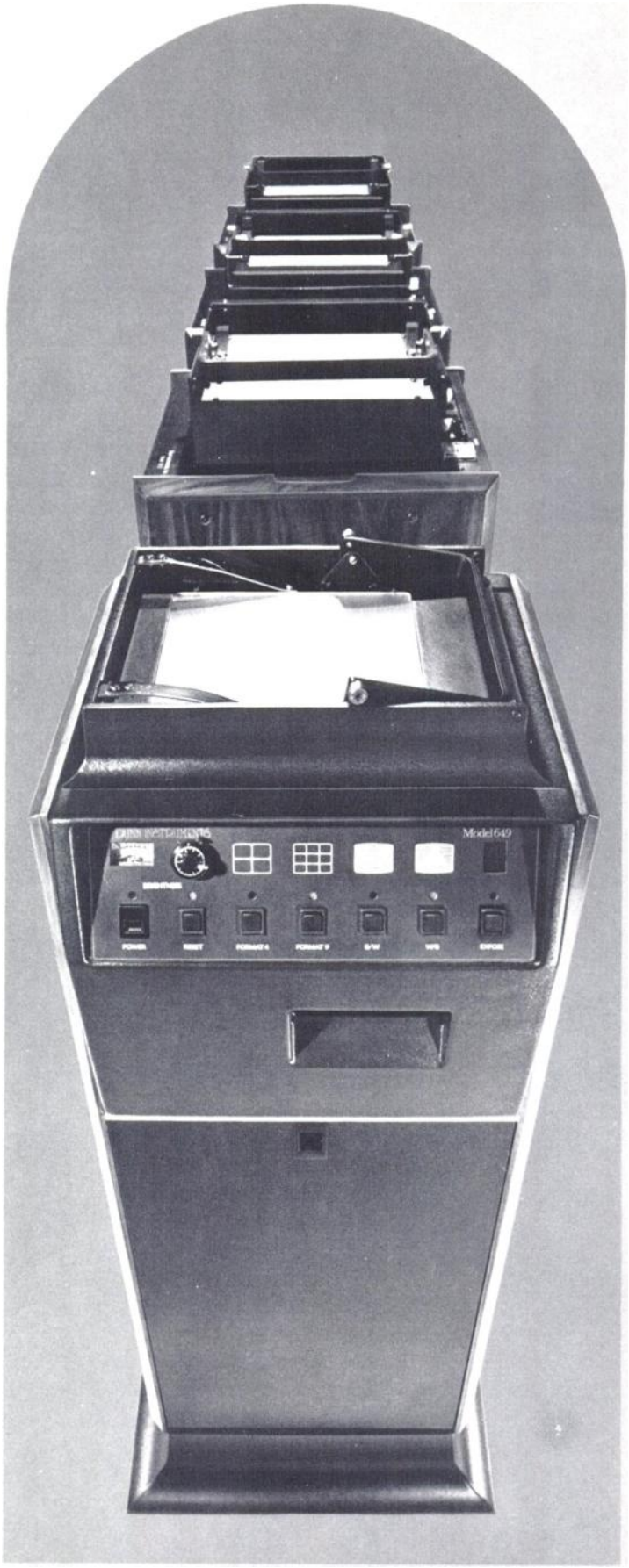
Norway, Sweden, Denmark, Finland
SCANFLEX
BOX 262, 183 23 TABY
SWEDEN (TEL. 08/758-88-85)

Japan
KYOSITSU ELECTRICAL LTD.
31-12 MOTOYOYOGI-MACHI
SHIBUYA-KU, TOKYO 151
JAPAN (TEL. [03] 469-2251)

U.S.A., all other countries and O.E.M.
N.I.S.E. INC.
20018 STATE ROAD
CERRITOS, CALIFORNIA 90701
U.S.A. (TEL. [213] 860-6708)

The 600 Series Video Display Cameras

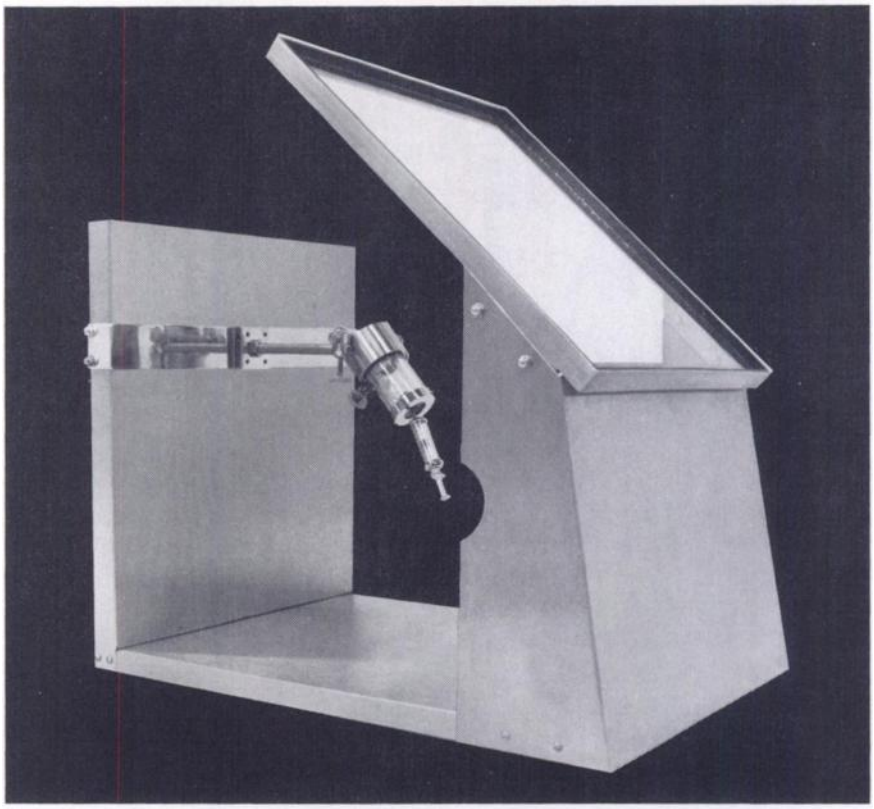
Whatever size or shape your medical images may take, there's a Dunn 600 Series Video Display Camera to take the picture. We were the first to develop and refine the concept of multiple image hard copy on x-ray film. A bright idea we've since patented. And we're still the best. Because it takes a lot more than a multitude of format choices, push buttons, and flashing lights to make a Dunn Camera. It takes quality components like our high resolution, high linearity, custom modified Conrac video monitors. Exclusive features like our flash card data entry, remote camera operation, Spot Meter Exposure System, front panel Master Brightness Control, and control logic to prevent double exposures. Flexibility of design that lets you either shelf mount the camera or use it as a space-saving pedestal. Options like video inverters, and character generators you can hold in the palm of your hand. And optics like our very high quality Schneider lens with electronic shutter. But most of all, it takes years of experience, proven units in the field, and *our* people who manufacture, service and back up what we sell. That's what it takes to make a Dunn Camera. And nobody can take that away from us.



Dunn Instruments

52 Colin P. Kelly Jr. St., San Francisco, CA 94107 (415) 957-1600

U.S. Patent No. 4,027,315



Now there's a Radiation Dose Shield that offers *more* than just protection.

Safety, versatility *and* convenience. Nuclear Pacific's new Radiation Dose Shield provides all three through an expandable, modular design that allows you to select exactly the features your working environment most requires.

The basic stand consists of a 16"x 18" cantilevered frame holding ¼" (4.8 density) lead glass, vertical stainless steel-clad forward wall and a horizontal work surface. The forward wall contains ⅜" lead lining.

The basic unit can be ordered with thicker and higher density glass (the frame accommodates thicknesses up to 1") and/or with a vial-shield-holding back wall. (As shown.)

Basic unit size is 17" wide by 25" deep and is 25" high. Net weight: 129 lbs.

Radiation Dose Shield Model 30
Basic Unit $498.00

includes:
- Front Stainless Steel with ⅜" Lead
- Side Stainless Steel with ⅜" Lead
- Bottom Stainless Steel only
- Frame with 4.8 density ¼" Lead Glass

Select the basic stand or any of these options:

Options: Add prices below to base unit, Model 30 price

Model 31-A	Back-Stainless Steel Panel	$ 68.00
Model 31-B	Back-⅜" Lead Sheet	$ 64.00
Model 31-C	Bottom ⅜" Lead Sheet	$ 86.00
*Model 31-D	Utility Bar	$ 90.00
Model 31-75	Lo Energy Vial Shield Holder	$125.00
Model 31-77	Hi Energy Vial Shield Holder	$125.00
Model 31-79	Ultra Hi Energy Vial Shield Holder	$125.00
Model 31-481	½" 4.8 Density Lead Glass	$ 63.00
Model 31-622	½" 6.2 Density Lead Glass	$100.00
Model 31-623	¾" 6.2 Density Lead Glass	$175.00
Model 31-624	1" 6.2 Density Lead Glass	$275.00

*Only one required for 1 to 4 Vial Shield Holders.

To order, contact Nuclear Pacific, Inc., (206) 763-2170.

Nuclear Pacific, Inc.

6701 Sixth Ave. S. Seattle, WA 98108

ONE 5-MINUTE BOIL. AND COOL IT.

Cool rapidly in ice water or refrigerator while observing proper radiation safety measures. Refer to package insert for full preparation instructions.

New! TSC preparation now takes less time.

The CINTICHEM® TSC reagent kit for imaging of functioning reticuloendothelial cells in the liver, spleen and bone marrow requires less of your time to prepare than any other sulfur colloid kit available.

- Needs boiling only once for 5 minutes. Other kits can demand 2 boilings plus cooling period.
- Buffer is injected into the reaction vial immediately after removal from the boiling water bath.
- Dose vial is then rapidly cooled in an ice-water bath or similar cold environment.

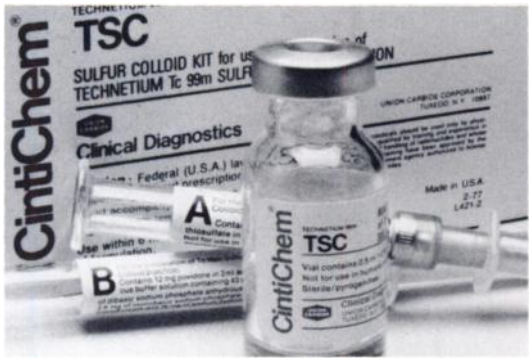
Take advantage of our other CINTICHEM products for nuclear medicine:

- Technetium 99m HEDSPA (Etidronate Disodium[1] Tin Kit for use in preparation of Technetium Tc 99m Etidronate Tin Complex)
- Technetium 99m DTPA (DTPA Tin Kit for use in preparation of Technetium Tc 99m DTPA Tin Chelate)
- Technetium 99m MAA (Technetium Tc 99m Aggregated Albumin)
- Technetium 99m HSA (Technetium Tc 99m Human Serum Albumin)

All of the above are available in multidose and unit dose kits.

- Technetium Tc 99m Generator for the production of Sodium Pertechnetate Tc 99m, available in 500, 1000, 1500, or 2000 millicuries.

For ordering or additional information
Call toll-free: (800) 431-1146
In New York State call: (914) 351-2131



[1]USAN designation for 1-hydroxy-ethylidene-1,1-disodium phosphonate HEDSPA.

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 formation 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.

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.

dosage and administration
The suggested intravenous dose range used in the average patient (70 kg) is 1 to 8 millicuries of Technetium Tc 99m Sulfur Colloid Injection.

When orally administered, the Technetium Tc 99m Sulfur Colloid Injection is not absorbed from the G.I. tract.

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 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.

how supplied kit contents

5 STERILE REACTION VIALS, each containing 0.5 ml 1.0 N hydrochloric acid in water.
5 STERILE SYRINGES, (labeled "A"), each containing 1.7 mg anhydrous sodium thiosulfate in 1 ml aqueous solution.
5 STERILE SYRINGES, (labeled "B"), each containing 12 mg povidone in 2 ml aqueous buffer solution containing 43 mg of dibasic sodium phosphate anhydrous, 2.6 mg of monobasic sodium phosphate monohydrate, and 16 mg of sodium hydroxide.
5 RADIOACTIVE SYMBOL LABELS.
10 PRESSURE-SENSITIVE LABELS for final Technetium Tc 99m Sulfur Colloid Injection preparation.
1 PACKAGE INSERT.

storage

Store kit contents at room temperature (18-25° C).

preparation

The following directions must be carefully followed for optimum preparation of the Technetium Tc 99m Sulfur Colloid Injection.

1. Affix radioactive symbol label to reaction vial.
2. Aseptically inject 0.1-5.0 ml of sterile Sodium Pertechnetate Tc 99m, up to 75 millicuries which must contain less than 10 micrograms of aluminum, into the reaction vial. Relieve the excess pressure in the vial by withdrawing an equal volume of air. Mix the solution.
3. Assemble the thiosulfate syringe (labeled "A") and inject the total contents into the reaction vial with gentle agitation. Relieve the excess pressure by withdrawing an equal volume of air and remove the needle.
4. Immediately immerse the reaction vial in a vigorously boiling water bath, deep enough to cover the entire liquid contents of the vial. Keep the vial in the water bath for 5 minutes plus or minus 30 seconds.
5. During heating step, assemble buffer syringe cartridge (labeled "B").
6. Remove vial from water bath, place in lead shield, and vent using 20 gauge, disposable needle.
7. Immediately inject contents of syringe B into reaction vial.
8. Remove vent and shake gently for a few seconds.
9. Rapidly cool to room temperature (note: rapid cooling in an ice bath is preferable) before use and then affix the descriptive label to the dose vial shield. Maintain adequate shielding of the radioactive colloid preparation. Do not use the preparation after six hours from the time of formulation.

UNION CARBIDE **CintiChem®**

Technetium 99m

TSC Sulfur Colloid Kit for Use in Preparation of Technetium Tc 99m Sulfur Colloid Injection

Union Carbide Corporation • Clinical Diagnostics
Nuclear Medicine Products • Tuxedo, New York 10987

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.

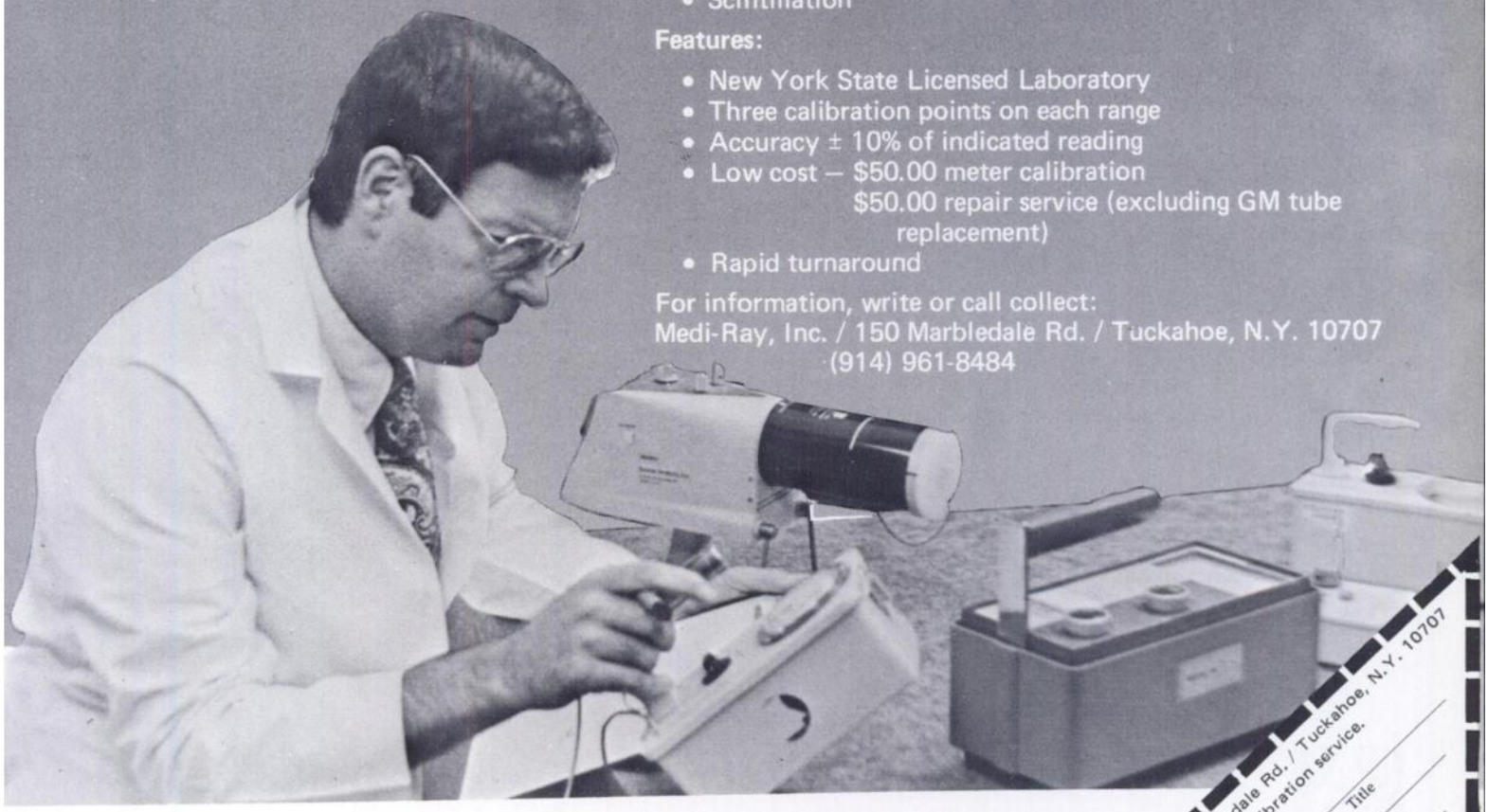
Types of Meters:

- 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 _____

In monitoring foetal distress

time-saving can be life-saving

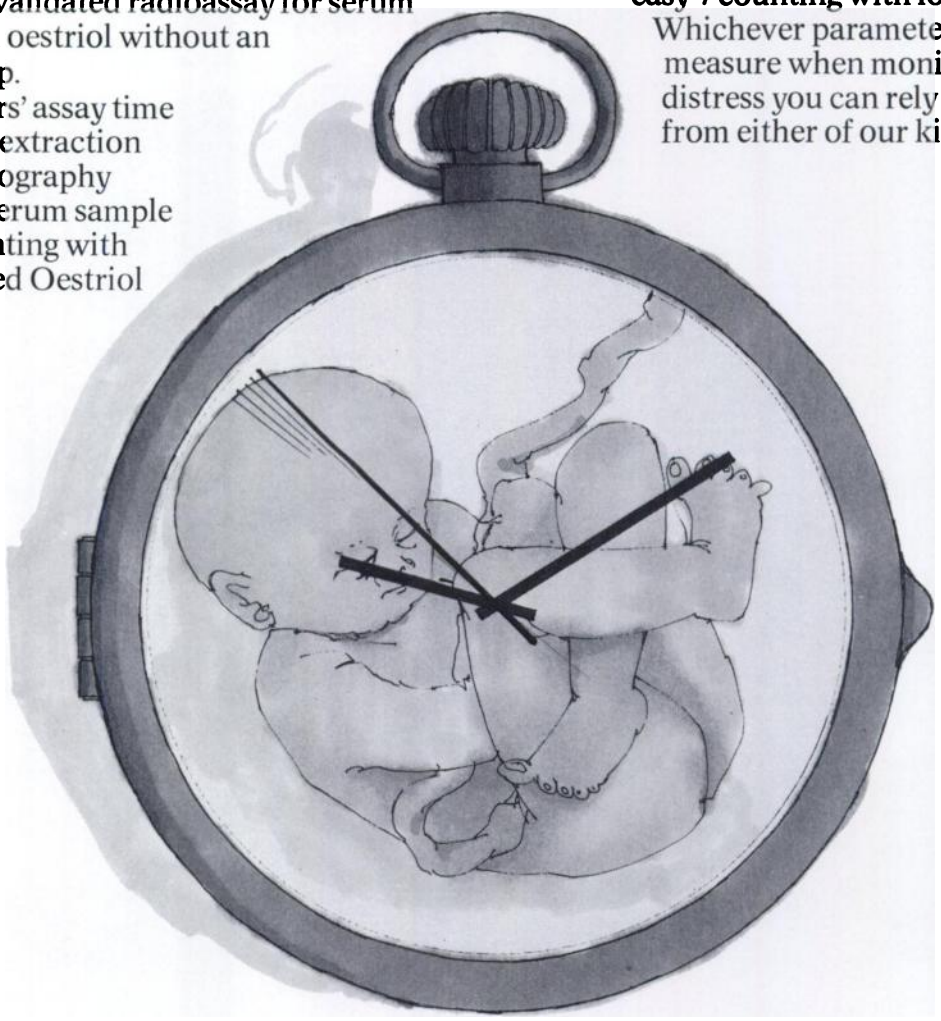
Both our serum oestriol radioimmunoassay kits give rapid and reliable results. And both assay methods save valuable time by eliminating urine collection.

Our new Oestriol (Unconjugated) RIA Kit is the first fully validated radioassay for serum unconjugated oestriol without an extraction step.

* Only 2 hours' assay time
* No solvent extraction or chromatography
* Only 20μl serum sample
* Easy γ-counting with 125 I-labelled Oestriol

Alternatively, you can use our well-established Oestriol (Total) RIA Kit. This assay is simple too, and highly reproducible; no solvent extraction or chromatography; only 50μl serum sample; assay time of 3 to 4 hours; easy γ-counting with iodine-125 label.

Whichever parameter you decide to measure when monitoring foetal distress you can rely on the results from either of our kits.



Serum oestriol RIA kits-unconjugated or total

The Radiochemical Centre
Amersham

Full information and validation are available on request.
The Radiochemical Centre, Limited, Amersham, England. Telephone 024-04-4444
In the Americas: Amersham Corporation, Illinois 60005. Telephone 312-593-6300
In W. Germany: Amersham Buchler GmbH & Co KG Braunschweig. Telephone 05307-4693-97

1568/12/77

We've Invented the Wheel

The wheel that gives you push button Quality Control

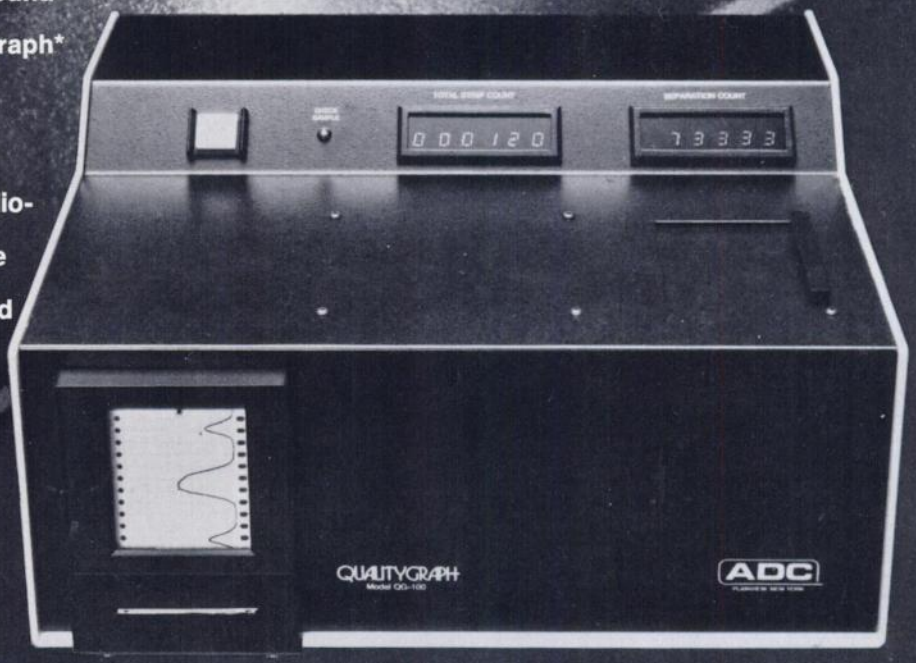
Our wheel doesn't just go around and around —it's an important part of our new Qualitygraph* Automatic Radiochromatography System.

It automatically rotates past a collimated Geiger-Müller detector that scans each radiochromatography strip precisely. Results are displayed two ways, LED digital readout and on a built-in strip chart recorder that provides a hard copy for your records.

Important Quality Control results are now only minutes away.

And that's not all . . .

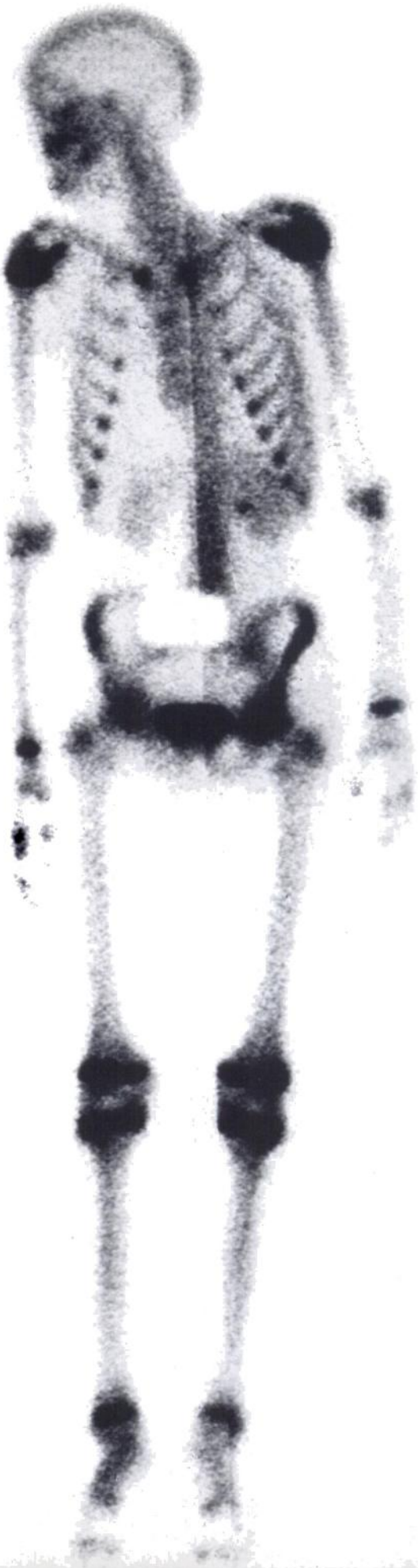
Call or write for further details.



ADC 7 FAIRCHILD COURT, PLAINVIEW, N.Y. 11803 (516) 433-8010

*Patent Pending

Get the image you want



Medotopes®

TWENTIETH ANNIVERSARY

SQUIBB®

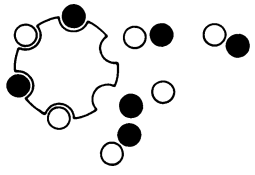
The 2¼ hour TSH.

In by nine, out before noon. That's a big bite out of the total incubation time. But not at the expense of sensitivity.

Our TSH is still super-sensitive and super-linear over a range of 2 to 100 μIU/ml. As convenient as ever—lyophilized for longer shelf-life and easy shipping. Just as precise—a within run precision of 2-5%, a run-to-run precision of 5-7%. It's color coded and calibrated to W.H.O. reference material. And it still has the lowest cross-reactivity with HCG, LH, and FSH.

We've just made the better TSH even better. And that shouldn't be too hard to swallow.

The 2¼ hour TSH from DPC.
It's about time somebody was sensitive to your needs.



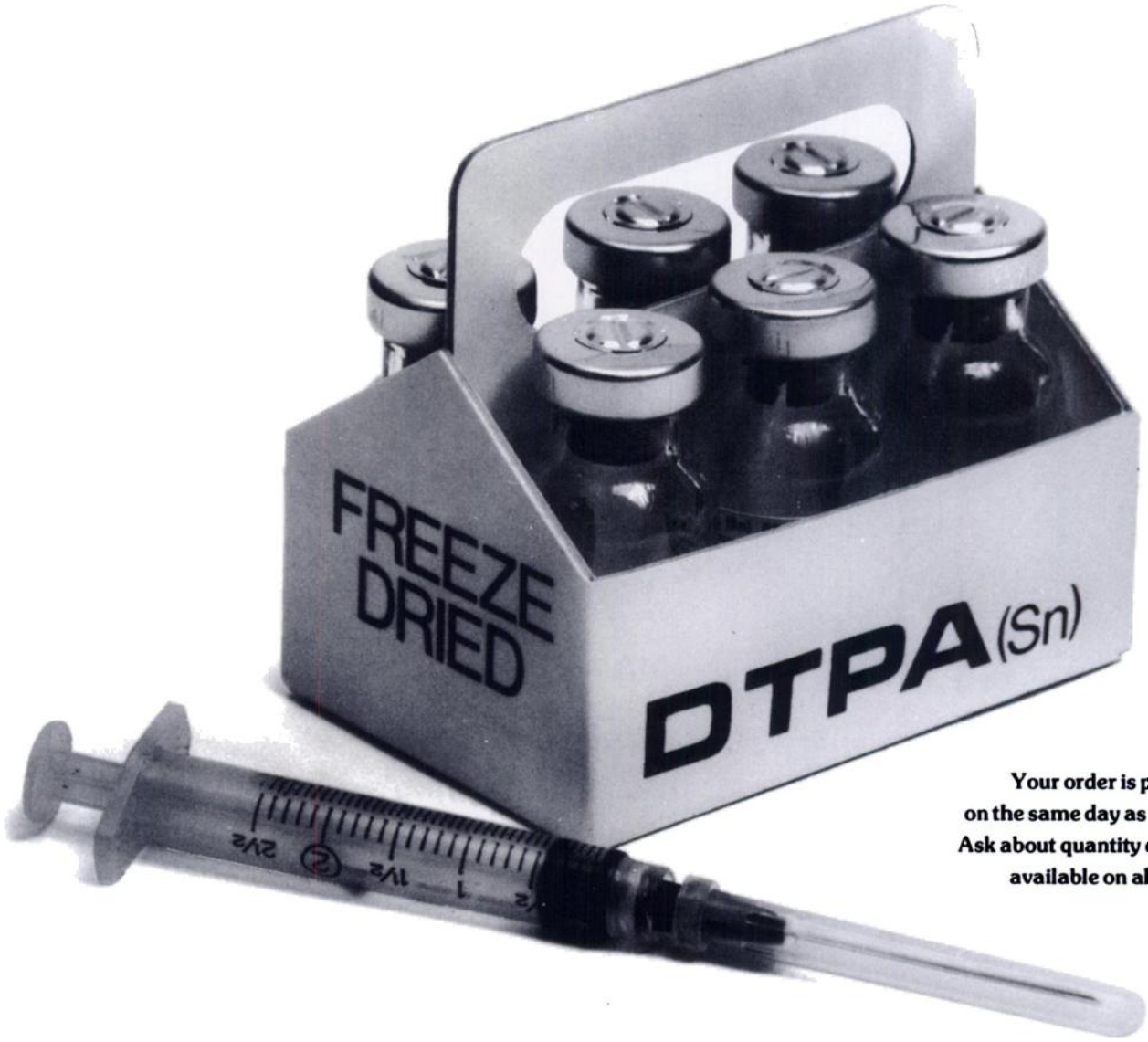
Diagnostic Products Corporation RIA

12306 Exposition Boulevard • Los Angeles, CA 90064 • (800) 421-7235 or collect (213) 826-0831

Remember!

Ours is a freeze-dried DTPA that does not require refrigeration and is ready for addition of Tc99m solution. Made with monocalcium trisodium salt, rather than pentasodium salt.

Available in a six pack, each of the six vials contains a sterile, pyrogen-free mixture of 20.6 mg of $CaNa_3$ diethylenetriaminepenta acetate, 0.210 mg of stannous chloride and HCl and/or NaOH to adjust pH.



Your order is processed on the same day as received. Ask about quantity discounts available on all our kits.

CIS Radiopharmaceuticals, Inc.

5 DeAngelo Drive/Bedford, Ma. 01730/Telephone: (617) 275-7120;
outside Massachusetts (800) 225-1145/TELEX 94-9465

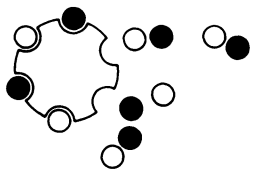
The 2¼ hour TSH.

In by nine, out before noon. That's a big bite out of the total incubation time. But not at the expense of sensitivity.

Our TSH is still super-sensitive and super-linear over a range of 2 to 100 μIU/ml. As convenient as ever—lyophilized for longer shelf-life and easy shipping. Just as precise—a within run precision of 2-5%, a run-to-run precision of 5-7%. It's color coded and calibrated to W.H.O. reference material. And it still has the lowest cross-reactivity with HCG, LH, and FSH.

We've just made the better TSH even better. And that shouldn't be too hard to swallow.

The 2¼ hour TSH from DPC.
It's about time somebody was sensitive to your needs.



Diagnostic Products Corporation RIA

12306 Exposition Boulevard • Los Angeles, CA 90064 • (800) 421-7235 or collect (213) 826-0831

GET IT IN WRITING.

With the new CRC-20 Radioisotope Calibrator/Computer/Printer.

The Capintec Recordose® ticket-printer provides a hard copy record in triplicate for authenticated proof of patient dose administered.

The CRC-20 is the most advanced radioisotope calibration system available. It:

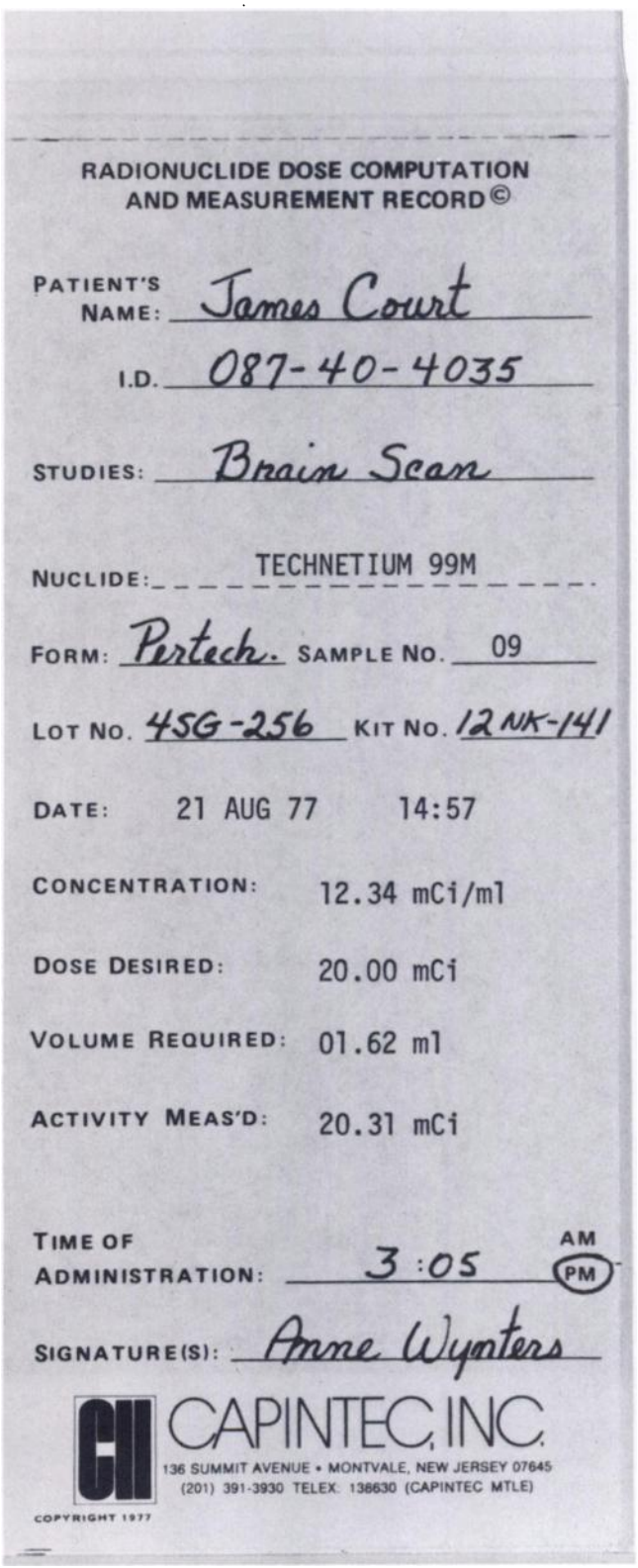
- Speeds up dose computation
- Reduces labor/lowers cost
- Virtually eliminates error
- Reduces operator radiation exposure

Did you know that your present Capintec Calibrator can be upgraded to CRC-20 capability? Call or write for details.

CAPINTEC, INC.

136 Summit Ave. • Montvale, N.J. 07645
(201) 391-3930 • Telex: 138630 (CAPINTEC MTLE)

4151 Middlefield Rd. • Palo Alto, CA. 94306
(415) 493-5011



RADIONUCLIDE DOSE COMPUTATION AND MEASUREMENT RECORD©

PATIENT'S NAME: James Court

I.D. 087-40-4035

STUDIES: Brain Scan

NUCLIDE: TECHNETIUM 99M

FORM: Pertech. SAMPLE NO. 09

LOT NO. 45G-256 KIT NO. 12NK-141

DATE: 21 AUG 77 14:57

CONCENTRATION: 12.34 mCi/ml

DOSE DESIRED: 20.00 mCi

VOLUME REQUIRED: 01.62 ml

ACTIVITY MEAS'D: 20.31 mCi

TIME OF ADMINISTRATION: 3:05 AM (PM)

SIGNATURE(S): Anne Wynters

CAPINTEC, INC.

136 SUMMIT AVENUE • MONTVALE, NEW JERSEY 07645
(201) 391-3930 TELEX: 138630 (CAPINTEC MTLE)

CONSIDER. A COMPUTERIZED, CLINICALLY PROVEN rCBF ANALYSIS SYSTEM-COMPLETE WITH PROGRAMMING.

Harshaw's TASC-5 Computerized rCBF Analyzer offers the clinical investigator unprecedented flexibility in all phases of rCBF data analysis. And it makes rCBF measurement as a diagnostic procedure a practical reality.

The TASC-5 Computerized rCBF Analyzer is routinely supplied with a computer program—based on the xenon inhalation technique developed by Obrist, et al.* Since the TASC-5 computer controls measurement and analysis functions, minimum operator training is required.

Where existing computer facilities are available, a basic TASC-5 can be interfaced with any RS-232C compatible input. In the event a computer terminal is not available, a tape recorder provides for data storage.

THE HELMET

The Helmet is Harshaw's unique new probe holder for the advanced TASC-5 Computerized rCBF Analysis System. The clear acrylic helmet provides good visibility when adjusting the probes and eliminates the problem of probe placement duplication for serial studies.

WHAT CAN THE TASC-5 DO FOR YOU?

Call us. We'll be happy to demonstrate how the TASC-5 Regional Cerebral Blood Flow Analyzer can make efficient, accurate, clinical rCBF measurement practical for you.

For complete information write . . .
The Harshaw Chemical Company
Crystal & Electronic Products
6801 Cochran Road, Solon, Ohio
44139. (216) 248-7400.

HARSHAW

*Walter D. Obrist, et al. STROKE, Vol. 6, May-June, 1975, pp. 245-256.

HARSHAW CHEMIE, B.V.,
DeMeern, Netherlands, Telex: 47017
HARSHAW CHEMIE G.m.b.H.,
Federal Republic of Germany,
Telex: 8513306

A kewanee INDUSTRY

Your Scintigraphy Kit

Your kit starts with any of our three simple one-step preparations which combined with our new Sterile Technetium-99m Generator offers a complete package for liver, lung, bone and brain scintigraphy. Later we will be adding more kits to our range.

All our kits are tested extensively in clinical trials which include the use of other technetium-99m generators as well as our own. All are terminally sterilized and every batch is animal tested.

Agent for Bone Scintigraphy

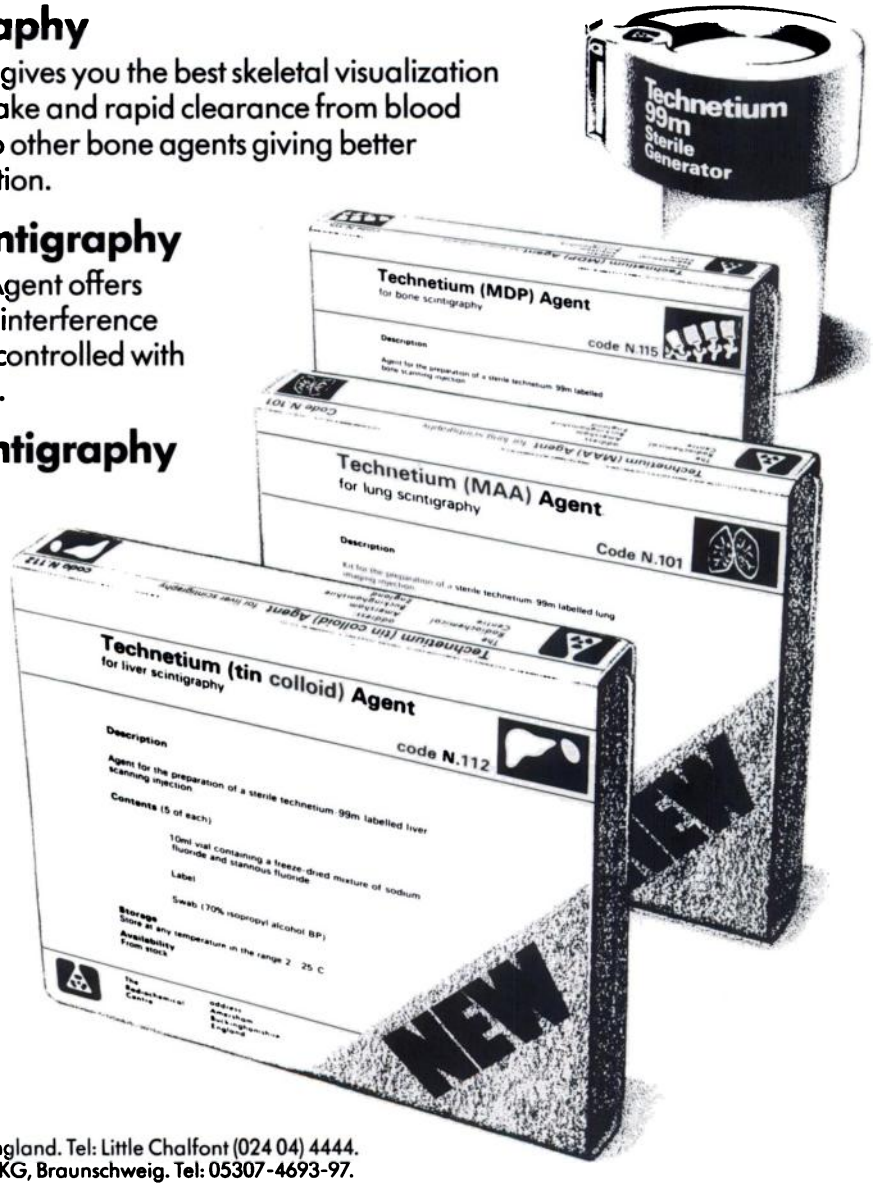
Our Technetium (MDP) Agent gives you the best skeletal visualization available today. The high bone uptake and rapid clearance from blood and soft tissue makes this superior to other bone agents giving better definition and improved discrimination.

New Agent for Lung Scintigraphy

Our new Technetium (MAA) Agent offers detailed lung visualization, with no interference from the liver. Particle size is strictly controlled with the majority in the range of 10–80μ.

New Agent for Liver Scintigraphy

The latest addition to our range is the unique Technetium (tin colloid) Agent. Its preparation is much simpler than sulphur colloid agents and requires no heating stage. It will visualize liver and spleen and unlike agents based on phytate, the colloid is formed in the vial, allowing quality control checks prior to injection.



The Radiochemical Centre Amersham

The Radiochemical Centre Limited, Amersham, England. Tel: Little Chalfont (024 04) 4444.
In W. Germany: Amersham Buchler GmbH & Co, KG, Braunschweig. Tel: 05307-4693-97.

UNION CARBIDE

CintiChem®

Technetium 99m

HSA Multi-dose

Technetium Tc 99m Human Serum Albumin Reagent Kit

Five sterile multidose reaction vials each containing 21 mg human serum albumin and 0.23 mg stannous tartrate, lyophilized. Hydrochloric acid was added prior to lyophilization for pH adjustment.

REAGENT KIT FOR CARDIAC BLOOD POOL IMAGING

Maximum vial activity 100 mCi/3 ml

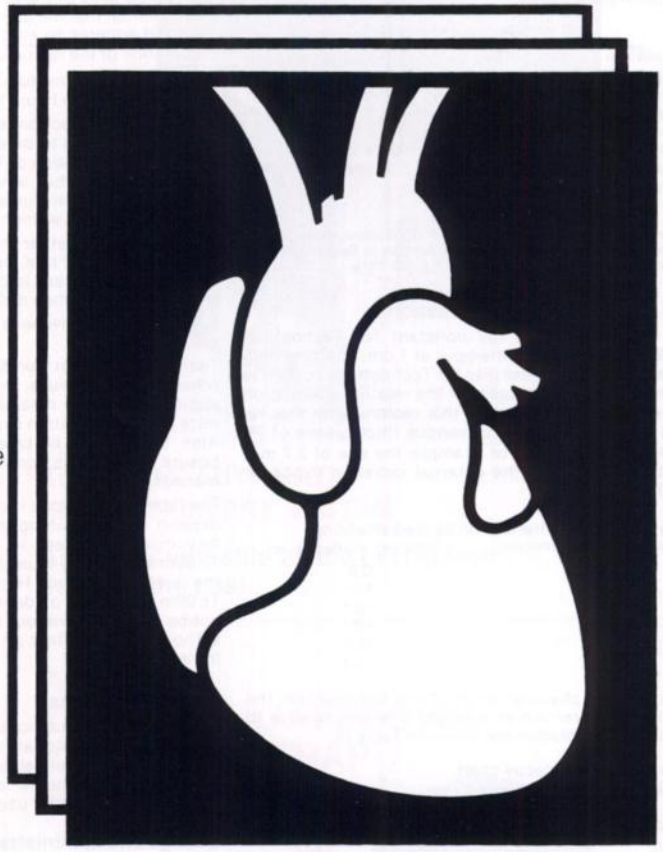
Easy to prepare (see directions): Just add sterile preservative-free water, Technetium 99m pertechnetate, then shake. Requires no electrolytic equipment or time-consuming procedures.

High blood concentrations: Approximately 60% remains in the circulation after 2 hours, approximately 45% after 4 hours (in normal patients).

Consistently high binding efficiency: Technetium binding range of 90-99% immediately after tagging.

Stable formulation: Uses stannous tartrate, which is more stable to air oxidation than stannous chloride.

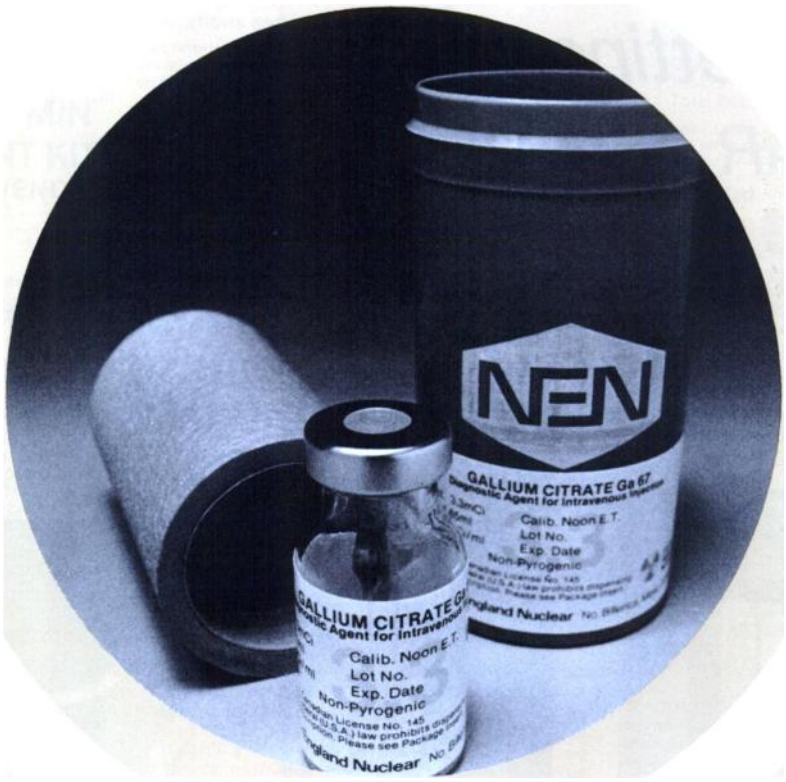
Free from extraneous constituents: Following aseptic preparation, final product contains HSA, water, stannous tartrate, and sodium chloride.



For ordering, customer service, and technical information on HSA (Product Number UC-HA-80)
Call toll-free: (800) 431-1146.
In New York State call: (914) 351-2131.

Union Carbide Corporation
Clinical Diagnostics
Nuclear Medicine Products
Tuxedo, New York 10987

(REVERSE SIDE: PRODUCT INFORMATION)



? Lymphoma
? Hodgkin's disease
? Bronchogenic carcinoma

Gallium Ga 67:

Now available for routine use as
a non-invasive adjunct in diagnosis.

UNION CARBIDE

CintiChem®

Technetium 99m

HSA Multi-dose®

Technetium Tc 99m Human Serum Albumin Reagent Kit

Five sterile multidose reaction vials each containing 21 mg human serum albumin and 0.23 mg stannous tartrate, lyophilized. Hydrochloric acid was added prior to lyophilization for pH adjustment.

REAGENT KIT FOR CARDIAC BLOOD POOL IMAGING

Maximum vial activity 100 mCi/3 ml

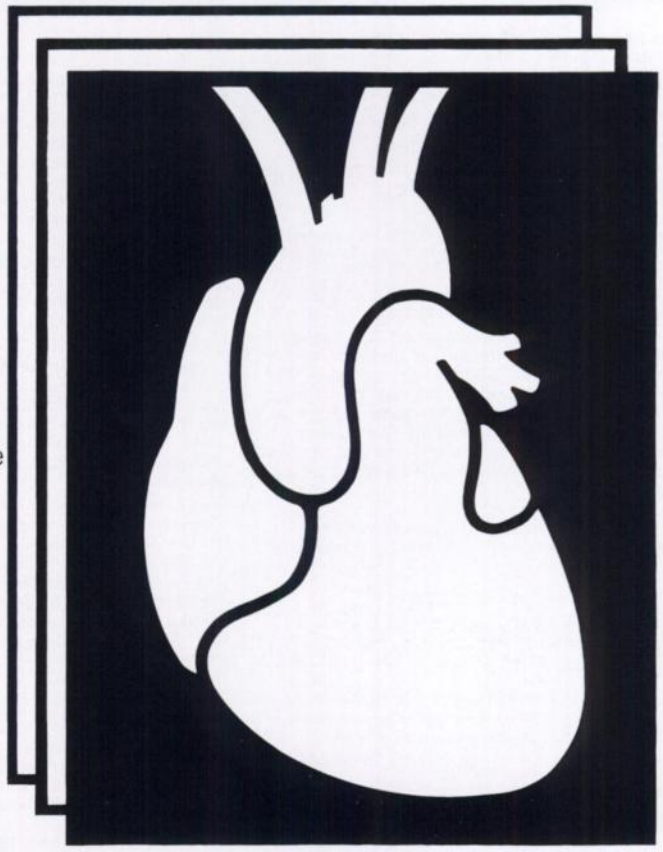
Easy to prepare (see directions): Just add sterile preservative-free water, Technetium 99m pertechnetate, then shake. Requires no electrolytic equipment or time-consuming procedures.

High blood concentrations: Approximately 60% remains in the circulation after 2 hours, approximately 45% after 4 hours (in normal patients).

Consistently high binding efficiency: Technetium binding range of 90-99% immediately after tagging.

Stable formulation: Uses stannous tartrate, which is more stable to air oxidation than stannous chloride.

Free from extraneous constituents: Following aseptic preparation, final product contains HSA, water, stannous tartrate, and sodium chloride.



For ordering, customer service, and technical information on HSA (Product Number UC-HA-80)
Call toll-free: (800) 431-1146.
In New York State call: (914) 351-2131.

Union Carbide Corporation
Clinical Diagnostics
Nuclear Medicine Products
Tuxedo, New York 10987

(REVERSE SIDE: PRODUCT INFORMATION)

CintiChem®

TECHNETIUM 99m

HSA Multi-dose Kit

TECHNETIUM Tc 99m HUMAN SERUM ALBUMIN MULTIDOSE REAGENT KIT

DIAGNOSTIC— FOR INTRAVENOUS USE

description

The kit consists of 5 multidose reaction vials each containing a lyophilized mixture of 21 mg human serum albumin and 0.23 mg stannous tartrate. Hydrochloric acid was added prior to lyophilization for pH adjustment. All components are sterile and pyrogen-free. When a solution of sterile and pyrogen-free Sodium Pertechnetate Tc 99m in isotonic saline is mixed with these components, following the instructions provided with the kit, Technetium Tc 99m Human Serum Albumin is formed, with a labeling efficiency of 90% or greater. The product so derived has a pH of 2.5-3 and is intended for intravenous injection. The precise structure of Technetium Tc 99m Human Serum Albumin is not known at this time. The Normal Human Serum Albumin used in this preparation was nonreactive when tested for hepatitis B surface antigen (HB_SAg) by radioimmunoassay.

physical characteristics

Technetium Tc 99m decays by isomeric transition with a physical half-life of 6.03 hours[1]. Photons that are useful for detection and imaging studies are listed in Table I.

table I. principal radiation emission data

radiation	mean % / disintegration	mean energy (keV)
Gamma-2	87.9	140.5

[1]Dillman, L.T. and Von der Lage, F.C., Radionuclide Decay Schemes and Nuclear Parameters for Use in Radiation-Dose Estimation. MIRD Pamphlet No. 10, p. 62, 1975.

external radiation

The specific gamma ray constant for Technetium Tc 99m is 0.8 R/millicurie-hour at 1 cm. The first half-value thickness of lead (Pb) for Technetium Tc 99m is 0.2 mm. A range of values for the relative attenuation of the radiation emitted by this radionuclide that results from interposition of various thicknesses of Pb is shown in Table II. For example, the use of 2.7 mm of Pb will decrease the external radiation exposure by a factor of 1,000.

table II. radiation attenuation by lead shielding

shield thickness (Pb) mm	coefficient of attenuation
0.2	0.5
0.95	10^{-1}
1.8	10^{-2}
2.7	10^{-3}
3.6	10^{-4}
4.5	10^{-5}

To correct for physical decay of this radionuclide, the fractions that remain at selected intervals relative to the time of calibration are shown in Table III.

table III. physical decay chart:
Tc 99m, half-life 6.03 hours

hours	fraction remaining	hours	fraction remaining
0*	1.000	7	.447
1	.891	8	.399
2	.795	9	.355
3	.708	10	.317
4	.631	11	.282
5	.563	12	.252
6	.502		

*Calibration Time. (Time of Preparation)

clinical pharmacology

Normal Human Serum Albumin, being a normal component of blood, leaves the vascular space at a rate slow enough to permit imaging procedures utilizing radioactive tags. Technetium Tc 99m Human Serum Albumin does not rapidly leak from the vascular space, nor is there significant accumulation in organs other than those of excretion, the kidney and bladder. Therefore, the vascular system may be imaged with a minimum of background and organ interference. In humans, a two-component blood clearance rate is observed, the T 1/2 slow component ranging from 10 to 16 hours. Twenty-four hour urine clearance averaged 39%.

indications and usage

Technetium Tc 99m Human Serum Albumin is used as an agent for imaging the heart blood pool and to assist in the detection of pericardial effusion and ventricular aneurysm.

contraindications

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

warnings

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 to nursing mothers unless the expected benefits to be gained outweigh the potential hazards.

Ideally, examinations using radiopharmaceuticals, especially those elective in nature, of women 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 radiodiagnostic.

Technetium Tc 99m Human Serum Albumin must not be used after three hours from the time of formulation.

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 Human Serum 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.

Technetium Tc 99m Human Serum Albumin, 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.

The labeling reactions involved in preparing the agent depend on maintaining the 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.

adverse reactions

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

dosage and administration

The suggested intravenous dose used in the average patient (70 kg) is 3-5 millicuries of Technetium Tc 99m Human Serum Albumin.

Each 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.

radiation dosimetry

The estimated absorbed radiation doses[2] to an average patient (70 kg) from an intravenous injection of a maximum dose of 5 millicuries of Technetium Tc 99m Human Serum Albumin are shown in Table IV.

table IV. estimated absorbed dose

tissue	absorbed radiation dose (rads / 5 mCi)
Brain	0.047
Marrow	0.076
Kidneys	0.063
Bladder	0.166
Ovaries	0.082
Testes	0.079
Total Body	0.073

[2]Method of Calculation: A Schema for Absorbed-Dose Calculations for Biologically Distributed Radionuclides. Supplement No. 1, MIRD Pamphlet No. 1, *J. Nucl. Med.*, p. 7, 1968.

how supplied

kit contents

5 STERILE MULTIDOSE REACTION VIALS (10 cc, silver aluminum overseal), each containing 21 mg human serum albumin and 0.23 mg stannous tartrate, lyophilized. Hydrochloric acid was added prior to lyophilization for pH adjustment.

1 RADIATION SHIELD for preparation and storage of a Technetium Tc 99m Human Serum Albumin preparation.

10 PRESSURE-SENSITIVE LABELS for final Technetium Tc 99m Human Serum Albumin preparation.

1 PACKAGE INSERT.

storage

Store kit contents in refrigerator (2-8°C). Do not freeze.

disposal

The residual materials may be discarded in ordinary trash provided the vials and syringes read background with an appropriate low range survey meter. It is suggested that all identifying labels be destroyed before discarding.

directions

The following directions must be carefully followed for optimum preparation of the Technetium Tc 99m Human Serum Albumin.

1. Aseptically swab rubber septum of sterile vial containing the sterile, lyophilized human serum albumin.
2. Aseptically inject 1.0 ml of Sterile Water for Injection; withdraw an equal volume of air.
3. Mix contents by swirling.
4. Place vial in radiation shield provided.
5. Aseptically swab rubber septum of shielded vial.
6. Aseptically inject up to 100 millicuries Sodium Pertechnetate Tc 99m in a maximum of 3 ml into the vial; withdraw an equal volume of air.
7. Mix contents of vial by gentle shaking for 10 seconds.
8. Affix pressure-sensitive label to shielded vial.
9. Allow to stand for 20 minutes after mixing to allow maximum tagging.
10. The TECHNETIUM 99m HSA is ready for use.
11. Mix contents of vial (step 7) prior to withdrawing patient dose.
12. Mix contents of syringe by repeated inversion immediately prior to injection.
13. Maintain adequate shielding of the radioactive preparation.
14. Do not use the preparation after 3 hours from the time of formulation.

The radioactivity concentration of the final Technetium Tc 99m Human Serum Albumin preparation may be calculated by using the following formula:

C = A/V where C equals radioactivity concentration of the preparation (millicuries/ml).

A = Tc 99m activity added to the reaction mixture vessel (millicuries).

V = Total volume in the final mixture (ml).

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

UNION CARBIDE

Clinical Diagnostics

If you are working with XENON or just getting started...

NUCLEAR ASSOCIATES' **Xenon Delivery System** *is for* **YOU**

Whatever your xenon work-load, budget or expertise, one of these efficient delivery systems will fill your needs.

"LFU" FULLY AUTOMATIC LUNG FUNCTION UNIT

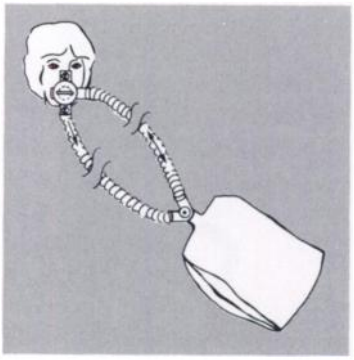
With push-button and remote operation, spirometer and optional kymograph.

"XDS" SEMI-AUTOMATIC XENON DELIVERY SYSTEM

Almost as versatile as the LFU system, but at ⅓ the cost.

E-Xe-Breathe DISPOSABLE Bag System.

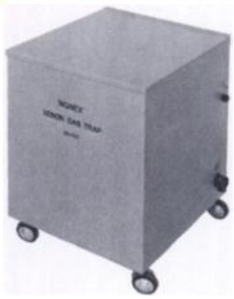
The ideal low-cost system until the work-load is increased.



And... The ONLY UL-APPROVED XENON GAS TRAP available

Compatible with any radio-xenon gas handling system.

Only 15″ x 15″ x 15¼″ high.



Send for complete details. Ask for Bulletin 2170-A

NUCLEAR ASSOCIATES, INC.
Subsidiary of
RADIATION-MEDICAL PRODUCTS CORP.
100 VOICE ROAD • CARLE PLACE, N.Y. 11514 • (516) 741-6360

? Lymphoma
? Hodgkin's disease
? Bronchogenic carcinoma

Gallium Ga 67:

Now available for routine use as
a non-invasive adjunct in diagnosis.

Indications and Usage: Gallium Citrate Ga 67 may be useful to demonstrate the presence and extent of certain malignancies such as Hodgkin's 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.

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:

General

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

The finding 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.

Carcinogenesis

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

Pregnancy Category C

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.

Nursing Mothers

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

Pediatric Use

Safety and effectiveness in children have not been established.

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.

CAUTION: Federal (U.S.A.) law prohibits dispensing without prescription.

NEN **New England Nuclear**
Radiopharmaceutical Division
Atomlight Place, North Billerica, Mass. 01862
Telephone 617-667-9531
Los Angeles: 213-321-3311

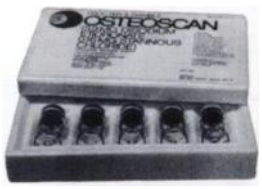
Canada: NEN Canada Ltd., 2453 46th Avenue, Lachine, Quebec, H7T 3C9, Tel: 514-636-4971, Telex: 05-821808
Europe: NEN Chemicals GmbH, D-6072 Dreieichenhain, W. Germany, Daimlerstrasse 23, Postfach 1240. Tel: (06103) 85034.

PROCTER & GAMBLE

OSTEOSCAN®

(5.9 MG DISODIUM ETIDRONATE, 0.16 MG STANNOUS CHLORIDE)

SKELETAL IMAGING AGENT



Brief summary of Package Insert. Before using, please consult the full Package Insert included in each kit.

DESCRIPTION

Each vial of OSTEOSCAN contains 5.9 mg disodium etidronate and 0.16 mg stannous chloride as active ingredients. Upon addition of ADDITIVE-FREE ^{99m}Tc-pertechnetate, these ingredients combine with ^{99m}Tc to form a stable soluble complex.

ACTIONS (CLINICAL PHARMACOLOGY)

When injected intravenously, ^{99m}Tc-labeled OSTEOSCAN has a specific affinity for areas of altered osteogenesis. Areas of bone which are undergoing neoplastic invasion often have an unusually high turnover rate which may be imaged with ^{99m}Tc-labeled OSTEOSCAN.

Three hours after intravenous injection of 1 ml ^{99m}Tc-labeled OSTEOSCAN, an estimated 40-50% of the injected dose has been taken up by the skeleton. At this time approximately 50% has been excreted in the urine and 6% remains in the blood. A small amount is retained by the soft tissue. The level of ^{99m}Tc-labeled OSTEOSCAN excreted in the feces is below the level detectable by routine laboratory techniques.

INDICATIONS

OSTEOSCAN is a skeletal imaging agent used to demonstrate areas of altered osteogenesis.

CONTRAINDICATIONS

None.

WARNINGS

This radiopharmaceutical should not be administered to patients who are pregnant or lactating 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.

The ^{99m}Tc-generator should be tested routinely for molybdenum breakthrough and aluminum. If either is detected, the eluate should not be used.

PRECAUTIONS

Both prior to and following ^{99m}Tc-labeled OSTEOSCAN administration, patients should be encouraged to drink fluids. Patients should void as often as possible after the ^{99m}Tc-labeled OSTEOSCAN injection to minimize background interference from accumulation in the bladder and unnecessary exposure to radiation.

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.

ADVERSE REACTIONS

None.

DOSAGE AND ADMINISTRATION

The recommended adult dose of ^{99m}Tc-labeled OSTEOSCAN is 1 ml with a total activity range of 10-15 mCi. ^{99m}Tc-labeled OSTEOSCAN should be given intravenously by slow injection over a period of 30 seconds within eight (8) hours after its preparation. Optimum scanning time is 3-4 hours postinjection.

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

Most of our competitors can make some of these claims about some of their products.

But...we're the only company that can make all of these claims about all of its diagnostic kits.

- Greater than 95% labeling efficiency
- 1 year shelf life
- Room temperature storage
- Easy preparation (add technetium, swirl and inject)
- Greater than 6 hour stability
- 10 vials per kit

The implications are obvious to the expert. You get consistently better imaging and in vivo stability, combined with ease of handling and the ability to store products for long periods without refrigeration.

Of course the proof is in the using. We invite you to try our product at no obligation. Just write to us at the address below, and we'll send you a sample of any of our diagnostic kits for your use and evaluation.

Diagnostic Kits (10 vials per kit
Tc 99m DTPA (Sn) Chelate
Tc 99m Polyphosphate-Tin
Tc 99m Diphosphonate-Tin

Radiopharmaceuticals
Gallium Citrate Ga-67
Selenomethionine Se-75
Xenon - 133 Gas
Xenon - 133 Saline

Accessory Equipment also available.

Our quality helps your image

di diagnostic isotopes incorporated
225 Belleville Ave., Bloomfield, N.J. 07003
201-429-7590 • Telex 133393

Indications and Usage: Gallium Citrate Ga 67 may be useful to demonstrate the presence and extent of certain malignancies such as Hodgkin's 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.

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:

General

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

The finding 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.

Carcinogenesis

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

Pregnancy Category C

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.

Nursing Mothers

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

Pediatric Use

Safety and effectiveness in children have not been established.

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.

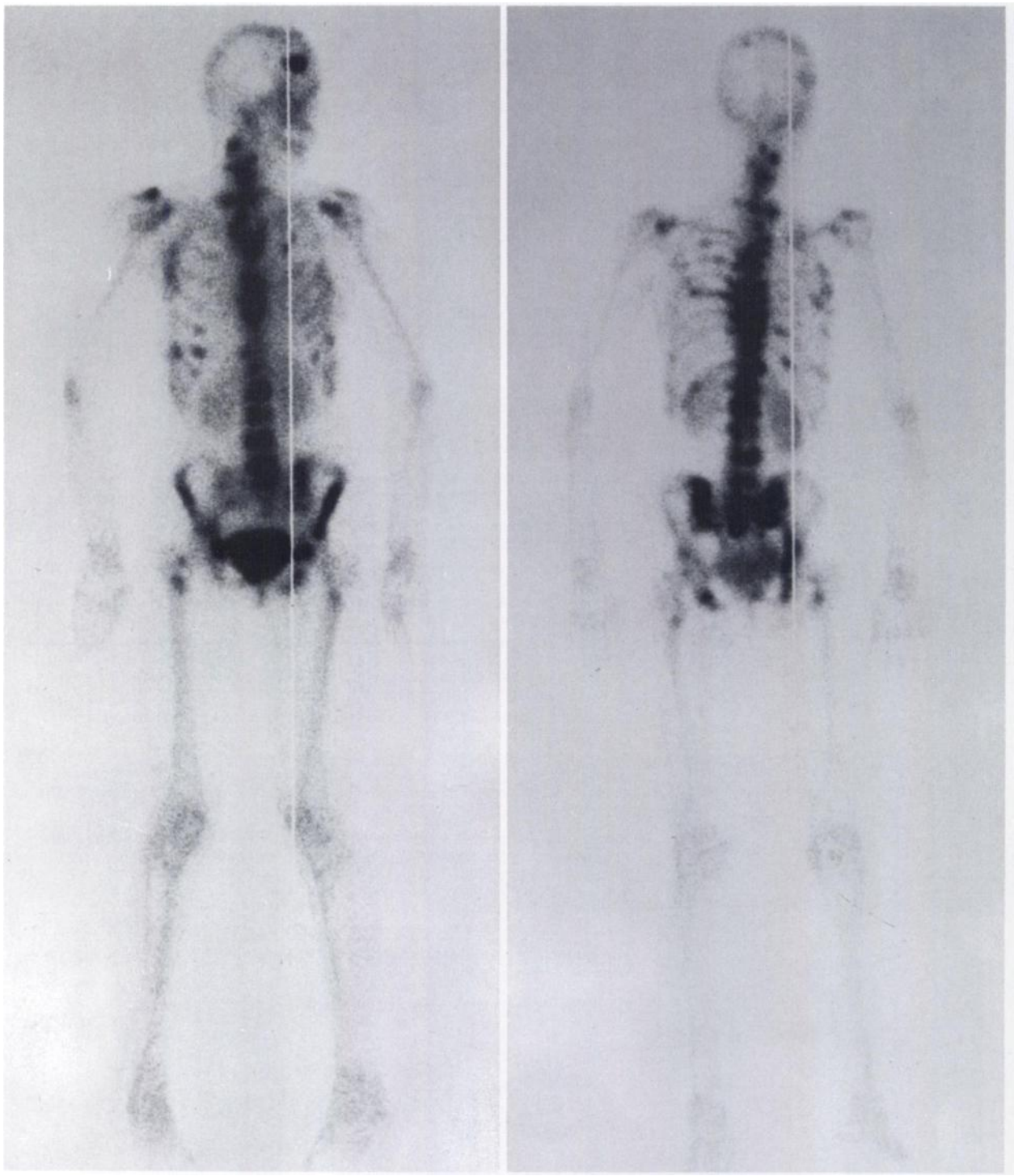
The contents of the vial are radioactive and adequate shielding and handling precautions must be maintained.

CAUTION: Federal (U.S.A.) law prohibits dispensing without prescription.

NEN **New England Nuclear**
Radiopharmaceutical Division
Atomlight Place, North Billerica, Mass. 01862
Telephone 617-667-9531
Los Angeles: 213-321-3311

Canada: NEN Canada Ltd., 2453 46th Avenue, Lachine, Quebec, H7T 3C9, Tel: 514-636-4971, Telex: 05-821808
Europe: NEN Chemicals GmbH, D-6072 Dreieichenhain, W. Germany, Daimlerstrasse 23, Postfach 1240. Tel: (06103) 85034.

Dependable bone



Anterior
R. L.

Posterior
L. R.

lesion detection

PROCTER & GAMBLE

OSTEOSCAN®

(5.9 MG DISODIUM ETIDRONATE, 0.16 MG STANNOUS CHLORIDE)

SKELETAL IMAGING AGENT

Excellent in vitro stability

Greater than 98% labeling efficiency 8 hours after preparation. Osteoscan contains sodium ascorbate, an antioxidant that inhibits action of radiolysis by-products and oxidants capable of causing complex break-down and resultant soft tissue visualization.

Compatible with all types of technetium

Delivers consistently high-quality scans, using either instant or generator technetium.

Plus these other Osteoscan benefits

- very low tin level to minimize potential for liver visualization and for interference with subsequent brain scans
- rapid blood clearance
- high target-to-nontarget ratio
- diphosphonate's P-C-P bond for excellent in vivo stability

For further information about Osteoscan, please contact: Arnold Austin, Technical Manager, Professional Services Division, Procter & Gamble (513) 977-5547.

In Europe, contact: Philips-Duphar B.V., Cyclotron and Isotope Laboratories, Petten, Holland.

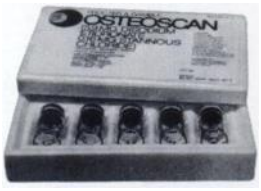
See following page for a brief summary of package insert.

PROCTER & GAMBLE

OSTEOSCAN®

(5.9 MG DISODIUM ETIDRONATE, 0.16 MG STANNOUS CHLORIDE)

SKELETAL IMAGING AGENT



Brief summary of Package Insert. Before using, please consult the full Package Insert included in each kit.

DESCRIPTION

Each vial of OSTEOSCAN contains 5.9 mg disodium etidronate and 0.16 mg stannous chloride as active ingredients. Upon addition of ADDITIVE-FREE ^{99m}Tc-pertechnetate, these ingredients combine with ^{99m}Tc to form a stable soluble complex.

ACTIONS (CLINICAL PHARMACOLOGY)

When injected intravenously, ^{99m}Tc-labeled OSTEOSCAN has a specific affinity for areas of altered osteogenesis. Areas of bone which are undergoing neoplastic invasion often have an unusually high turnover rate which may be imaged with ^{99m}Tc-labeled OSTEOSCAN.

Three hours after intravenous injection of 1 ml ^{99m}Tc-labeled OSTEOSCAN, an estimated 40-50% of the injected dose has been taken up by the skeleton. At this time approximately 50% has been excreted in the urine and 6% remains in the blood. A small amount is retained by the soft tissue. The level of ^{99m}Tc-labeled OSTEOSCAN excreted in the feces is below the level detectable by routine laboratory techniques.

INDICATIONS

OSTEOSCAN is a skeletal imaging agent used to demonstrate areas of altered osteogenesis.

CONTRAINDICATIONS

None.

WARNINGS

This radiopharmaceutical should not be administered to patients who are pregnant or lactating 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.

The ^{99m}Tc-generator should be tested routinely for molybdenum breakthrough and aluminum. If either is detected, the eluate should not be used.

PRECAUTIONS

Both prior to and following ^{99m}Tc-labeled OSTEOSCAN administration, patients should be encouraged to drink fluids. Patients should void as often as possible after the ^{99m}Tc-labeled OSTEOSCAN injection to minimize background interference from accumulation in the bladder and unnecessary exposure to radiation.

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.

ADVERSE REACTIONS

None.

DOSAGE AND ADMINISTRATION

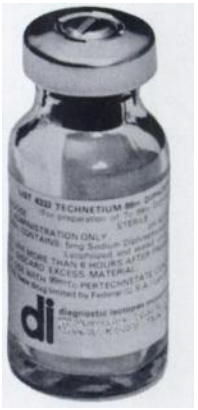
The recommended adult dose of ^{99m}Tc-labeled OSTEOSCAN is 1 ml with a total activity range of 10-15 mCi. ^{99m}Tc-labeled OSTEOSCAN should be given intravenously by slow injection over a period of 30 seconds within eight (8) hours after its preparation. Optimum scanning time is 3-4 hours postinjection.

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

Most of our competitors can make some of these claims about some of their products.

But...we're the only company that can make all of these claims about all of its diagnostic kits.

- Greater than 95% labeling efficiency
- 1 year shelf life
- Room temperature storage
- Easy preparation (add technetium, swirl and inject)
- Greater than 6 hour stability
- 10 vials per kit



The implications are obvious to the expert. You get consistently better imaging and in vivo stability, combined with ease of handling and the ability to store products for long periods without refrigeration.

Of course the proof is in the using. We invite you to try our product at no obligation. Just write to us at the address below, and we'll send you a sample of any of our diagnostic kits for your use and evaluation.

Diagnostic Kits (10 vials per kit

Tc 99m DTPA (Sn) Chelate
Tc 99m Polyphosphate-Tin
Tc 99m Diphosphonate-Tin

Radiopharmaceuticals

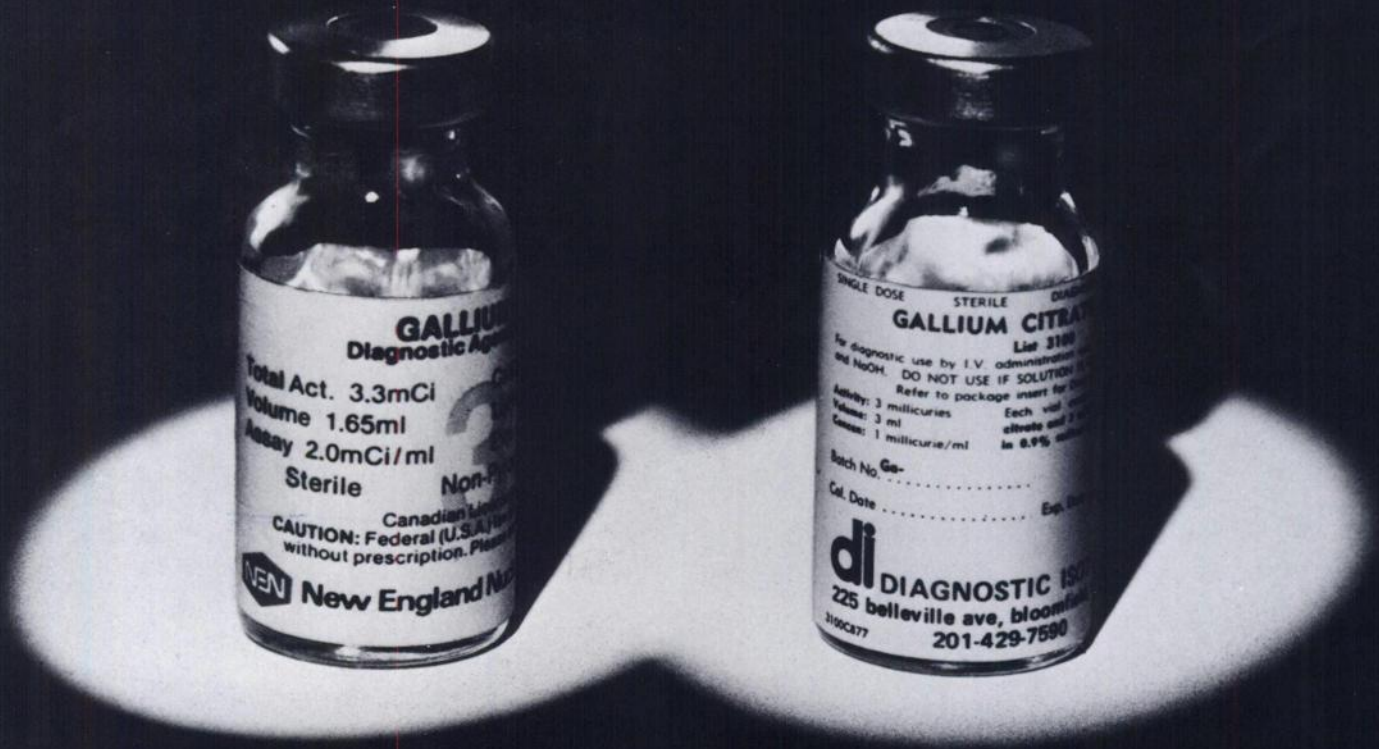
Gallium Citrate Ga-67
Selenomethionine Se-75
Xenon - 133 Gas
Xenon - 133 Saline

Accessory Equipment also available.

Our quality helps your image

di diagnostic isotopes incorporated
225 Belleville Ave., Bloomfield, N.J. 07003
201-429-7590 • Telex 133393

Now you have an alternative source for Gallium Citrate Ga 67.



Gallium Citrate Ga 67 for routine use is now available from Diagnostic Isotopes, Inc., giving you a choice of suppliers for this product. Gallium Citrate extends the DI product line of quality controlled radiopharmaceuticals.

For information on Gallium Citrate Ga 67 and other Diagnostic Isotopes products, including our standing order prices, call:

Toll free: 800-631-1260
In N.J.: 201-429-7590

Our quality helps your image

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

You get the system plus the ^{133}Xe for less than you're paying now for ^{133}Xe alone.

Yes, Radx has developed programs where we can provide you with the complete Radx System:

Ventil-Con — Patient Administration Spirometer
Xenon Trap — with Detector/Alarm
Xenon-Kow II — ^{133}Xe Dispenser

Plus all the ^{133}Xe you need in either 1 or 0.5 curie ampules, usually for less than you now pay for ^{133}Xe and disposable bags alone.

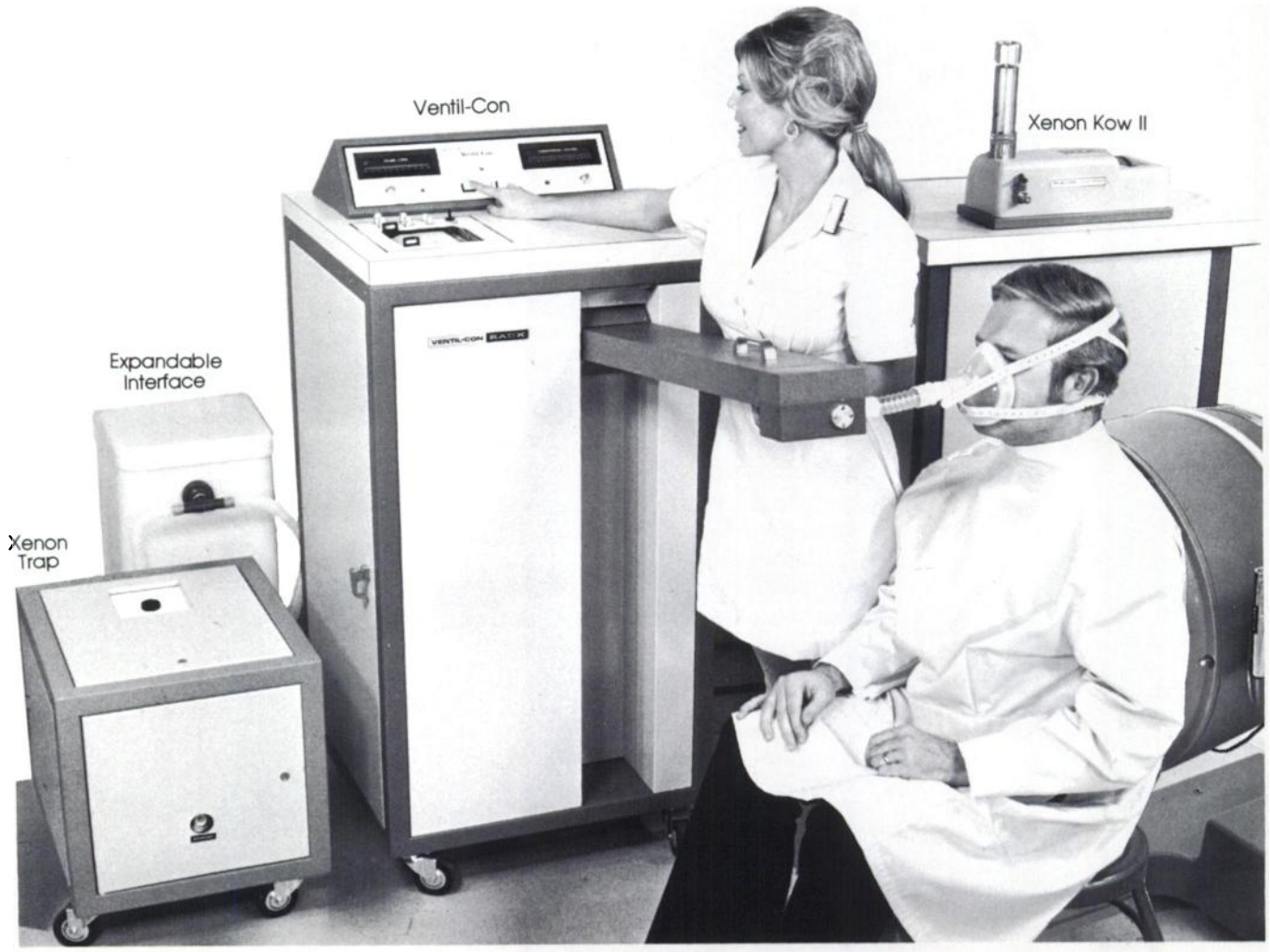
Sound hard to believe, try us.

Call today with information on your weekly patient load and monthly cost. We can probably save you money plus supply you with a more versatile, simpler, and safer system.

Now available through Radx: 1.0 and 0.5 curie ampules of ^{133}Xe. Call or write for complete information.

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

from RADX



GammaDab™

8 major advances in one new

Serum Ferritin RIA kit

1
Direct RIA methodology — not IRMA

2
No high dose hook effect

3
Sensitivity in the important subclinical range

4
Speed — results in less than 5 hours

5
Pre-precipitated double antibody separation

6
Standardized crystalline human liver ferritin reagents

7
Controls supplied at 2 levels

8
Convenience — minimal manipulations

CLINICAL ASSAYS®
DIVISION OF TRAVENOL LABORATORIES, INC.

620 Memorial Drive • Cambridge, Mass. 02139
(617) 492-2526 • TWX: (710) 320-6460
Toll free: (800) 225-1241 • In Mass: (617) 492-2526

CANADA: Clinical Assays • 6405 Northam Drive • Malton, Ontario L4V 1J3 • (416) 677-6730 • Telex: 06968720
EUROPE: Clinical Assays • Parc Industriel, Rue Du Progres No. 12, Nivelles 1400, Belgium • (067) 228911 • Telex: 57344

Diagnostic Biochemistry Inc.

^{125}I DOXORUBICIN—RIA KIT

FEATURING

- Rapid, simple procedure
- Precalibrated Standards
- Stable ^{125}I tracer
- 100 picogram sensitivity in serum, plasma and urine.
- Control serum provided
- Available in 100 tube kit

RIA ASSAY PROCEDURE — 5 Easy Steps

STEP 1
Pipette standards patient sample or control

STEP 2
Add ^{125}I Doxorubicin derivative

STEP 3
Add Doxorubicin antiserum

INCUBATE ALL TUBES FOR 1 HOUR

STEP 4
Add Charcoal suspension

Let stand at room temperature for 5 minutes

STEP 5
Spin, decant and count supernatant

For Investigational Use Only.

Also available:
^{125}I Folate
^{57}Co Vitamin B_{12}
^{125}I Digoxin-RIA
^{125}I T_4-RIA
^{125}I T_3 Uptake
^{125}I TSH-RIA
^{125}I Methotrexate

For further information call or write:

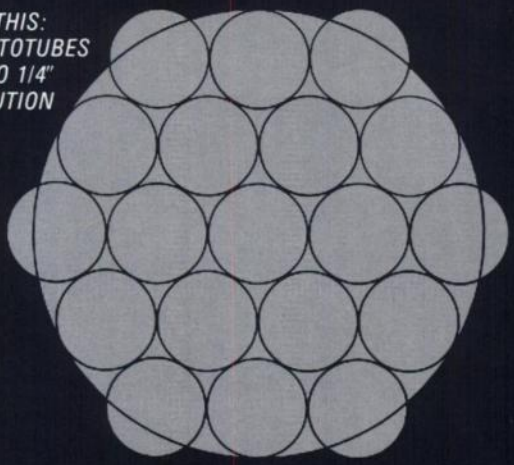
Diagnostic Biochemistry Inc.

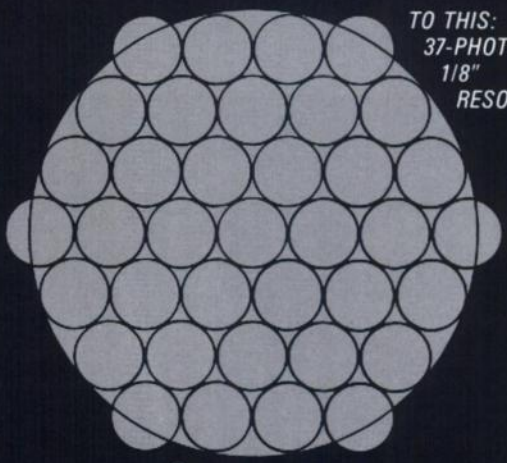
(714) 452-0950

10457-H ROSELLE STREET • SAN DIEGO, CA 92121

37-Tube Pho/Gamma® Upgrade!

FROM THIS:
19-PHOTOTUBES
3/16" TO 1/4"
RESOLUTION





TO THIS:
37-PHOTOTUBES
1/8"
RESOLUTION

CONVERT YOUR EXISTING 19-PHOTOTUBE PHO/GAMMA TO A MODERN 37-PHOTOTUBE HIGH-RESOLUTION SYSTEM

UPDATE X37

MEDX

UNPRECEDENTED OFFER! YOU BE THE JUDGE!

MEDX will install an Update X-37 in your existing 19-tube Pho/Gamma III or Pho/Gamma HP for 30 days (based on your purchase order). If you don't agree that your upgraded system provides resolution and uniformity comparable to the latest Pho/Gamma systems, we'll restore your system to its original condition and you owe us nothing.

MEDX UPDATE X-37 is a simple, practical, economical way to modernize your existing Pho/Gamma III or Pho/Gamma HP system. Why be satisfied with less than today's standards of resolution? MEDX UPDATE X-37 will provide you with a fully upgraded 37-tube system that guarantees you ⅛" intrinsic bar pattern resolution for ^{99m}Tc (33% better than Pho/Gamma HP specifications and 50% better than Pho/Gamma III specifications). The performance for Thallium 201 and ^{131}I is excellent, and there is no compromise of field uniformity.

MEDX UPDATE X-37 INCLUDES:

- A new detector assembly and an upgraded "A" scope and power supply.
- Work done on an exchange basis in your own laboratory. (The entire installation takes only four hours and can be done during the evening.)
- A 2-year service warranty on your new crystal, and a 1-year service warranty on the gamma camera.

INTRODUCTORY PRICE OFFER!

MEDX UPDATE X-37 for your Pho/Gamma HP $21,500
MEDX UPDATE X-37 for your Pho/Gamma III $23,950
(Lease plans available.) Prices subject to change without notice.

® Reg. T.M., G. D. Searle & Company

MAIL COUPON TODAY!
In a hurry?
Call collect (312) 991-0660

MEDX

An affiliate of
TRANS UNION LEASING CORPORATION

MEDX, INC.
501 South Vermont Street
Palatine, Illinois 60067

Please contact us about the following:

- ◯ MEDX UPDATE X-37 Pho/Gamma® HP system.
- ◯ MEDX UPDATE X-37 Pho/Gamma® system.
- ◯ Complete Gamma Camera System including Update-X.
- ◯ Please add our name to your mailing list for further information about MEDX UPDATE X-37 and

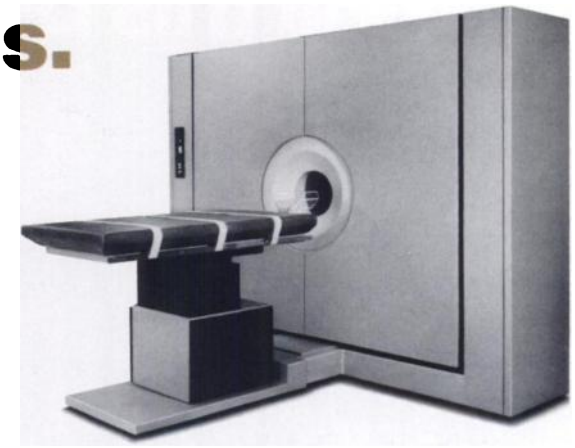
◯ cameras ◯ scanners ◯ ultrasound
◯ CT Scanner ◯ other instrumentation.

Name _____
Institution _____
Street _____
City _____
State _____ Zip _____
Phone _____

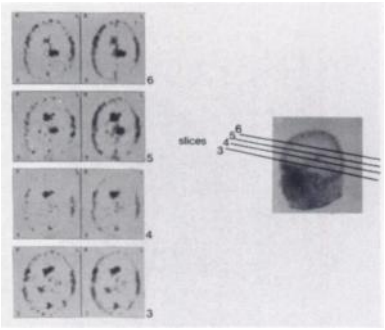

AUTO DSPL
NORM
CLEAR DSPL
Imaging Systems

The UNION CARBIDE Radionuclide Brain Imager:

Higher Sensitivity for Earlier Diagnosis.

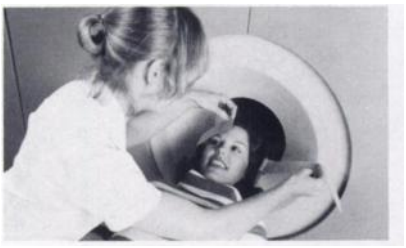


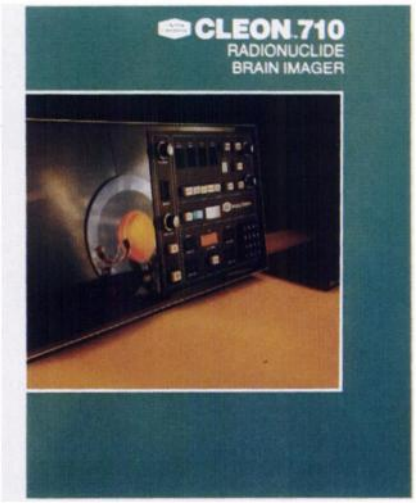
A unique diagnostic instrument, the CLEON 710 Radionuclide Brain Imager from Union Carbide provides accurate functional images of brain tissue – through the use of standard radiopharmaceuticals – and at accepted levels of administered activity.



The CLEON 710 can automatically acquire, process and display up to eight images representing transaxial slices of the brain. The unique method of acquiring and computer processing of the scan data provides target-to-background images at a ratio of approximately 1.5 to 1 with excellent functional detail. This ultrahigh sensitivity for quantitating very small changes in the regional distribution of radiopharmaceuticals enables early detection and treatment of brain abnormalities.

Dual radiopharmaceutical studies can also be performed simultaneously to analyze brain perfusion and the breakdown of the "blood-brain barrier".



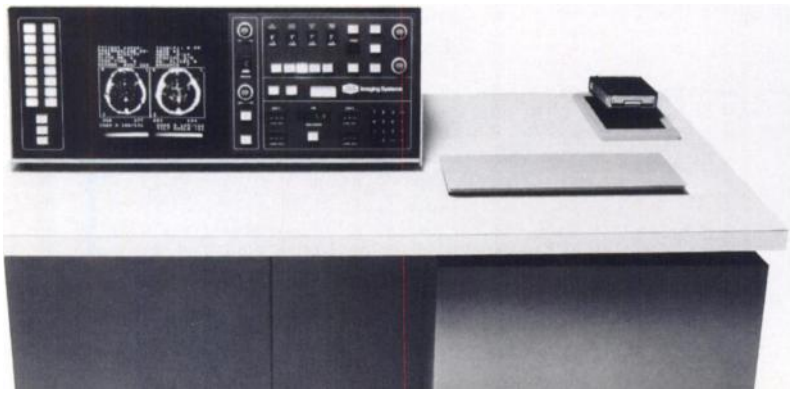


The CLEON 710 Radionuclide Brain Imager is easy to install and can be accommodated in a 16′ x 16′ room with no modifications to most existing facilities.

Ask Union Carbide for the Facts

Imaging Systems products from Union Carbide are designed to enhance diagnosis and research, produce a return on investment, and create better health care at lower patient cost.

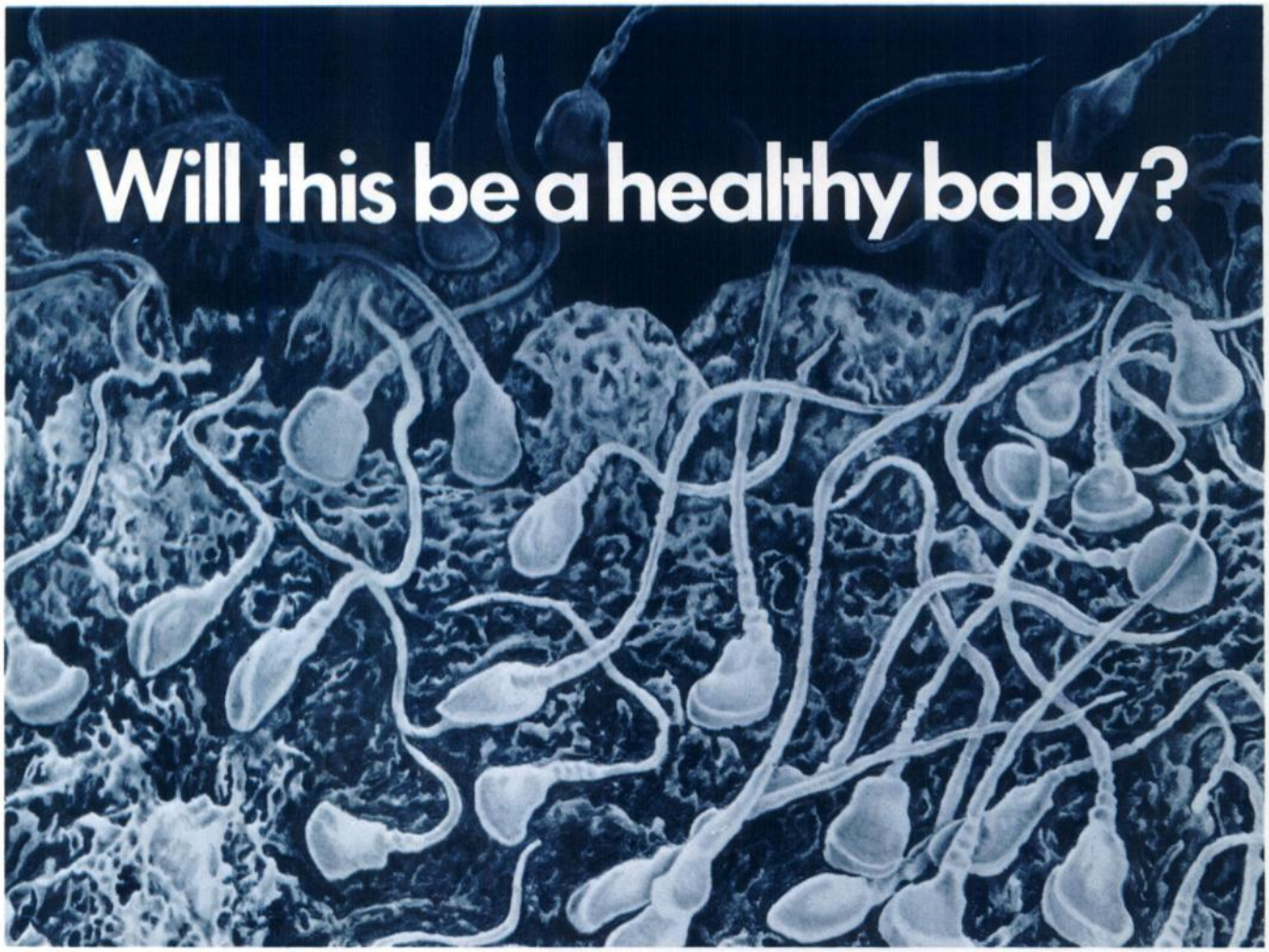
If you feel you should know more about this powerful new diagnostic tool, send today for descriptive literature. Or call for a personal presentation.



Touching your life through medicine . . .

UNION CARBIDE

Imaging Systems, Inc.
333 Providence Highway
Norwood, Massachusetts 02062
(617) 769-5400 TELEX 924-494



Representation of Spermatozoa at the surface of an ovum magnified approximately 2000 times.

Yes, if everything goes well. Even so, it needs all the skills of the gynaecologist and obstetrician to monitor progress and take action when complications arise. To support clinical judgement we offer four simple quantitative tests.

Each test, requiring only a small serum sample, is a highly specific radioimmunosassay giving excellent reproducibility with simple gamma counting. All are backed by extensive clinical trials.

FSH Kit

Our kit is already widely acclaimed for its performance in the study of infertility in both sexes.

Not only is it a highly reproducible test with a coefficient of variation of less than 6%, it also provides the gynaecologist with results within 24 hours.

HPL Kit

Used in the assessment of threatened abortion during the first trimester or for identifying foetal distress during the third trimester.

Only 2-3 hours are required to complete the test giving the obstetrician rapid results in emergencies.

2 Oestriol Kits

For measuring circulating oestriol levels in the third trimester. One kit measures unconjugated oestriol, the second measures total oestriol levels, in maternal serum.

Both these simple tests can be completed in less than 4 hours and eliminate the inconvenience of 24 hour urine collection.

FSH, HPL & OESTRIOL RIA KITS

A VALUABLE SERVICE TO OBSTETRICS AND GYNAECOLOGY

The Radiochemical Centre Amersham

Full information is available on request.
The Radiochemical Centre Limited, Amersham, England. Telephone: 024-04-4444.
In the Americas: Amersham Corporation, Illinios 60005. Telephone: 312-593-6300.
In W. Germany: Amersham Buchler GmbH & Co. KG, Braunschweig. Telephone: 05307-4693-97.

1567/10/77

PLACEMENT

POSITIONS OPEN

NUCLEAR MEDICINE RESIDENCY—Extensive clinical base of imaging, in-vitro testing, in-vivo testing, and therapy in combined University Hospital/VA Hospital program. Opportunities for clinical and laboratory research. Write: W. N. Tauxe, MD, Professor of Radiology and Pathology (Nuclear Medicine), University of Alabama Hospitals, Birmingham, AL 35233. "An equal opportunity/affirmative action employer."

NUCLEAR MEDICINE RESIDENCY, Medical College of Wisconsin. Two year integrated program including 710 bed VA General Hospital, 600 bed County Medical Complex and two large community hospitals. Several cameras each interfaced to computer. Includes all in vito studies. Ultrasound training included. Positions available in July 1978. Nondiscrimination in employment. Contact Robert C. Meade, M.D., Chief, Nuclear Medicine Service, VA Center, Milwaukee, WI 53193. 414-384-2000, EXT 2138.

NUCLEAR MEDICINE TECHNOLOgist (part time and full time) for 600 bed teaching hospital providing excellent experience and opportunity for continued learning. Excellent fringe benefits. Registered in nuclear medicine or graduate of A.M.A. approved nuclear medicine program. Equal opportunity employer. Send resume to: Mr. Joseph Wander, Medical Radio Department, U of I Med. Center, P.O. Box 6998, Chicago, Illinois 60680. Tel. (312) 996-7293.

NUCLEAR MEDICINE RESIDENCY Program. The Division of Nuclear Medicine at the Vanderbilt University Hospital has a two year residency position available in Nuclear Medicine beginning July 1, 1978. The program includes rotations on head CAT imaging, body CAT imaging as well as ultrasound. In addition, ample time for research is provided. The program includes extensive experience in renal, cardiac, as well as pediatric nuclear medicine. Much emphasis is placed on correlation between nuclear medicine, ultrasound and CAT imaging modalities. A one year residency program for board eligible or board certified radiologists desiring a one year training program in nuclear medicine leading to certification in nuclear radiology is also available. Please address inquiries to F. David Rollo, M.D., Ph.D., Director, Division of Nuclear Medicine, Vanderbilt University Hospital, Nashville, Tennessee 37232.

NUCLEAR MEDICINE TECHNICIAN. Full time opening on day shift now available. Excellent opportunity awaits qualified applicant. Excellent starting salary and benefits. Contact the Employment Office: Baptist Medical Center, 3300 N. W. Expressway, Okla. City, Okla. 405-949-3101.

ASSOCIATE PHYSICIAN FOR PRIvate practice of Internal and Nuclear Medicine, Board eligibility minimum requirement. Academic appointment available. Please contact: William J. Fayen, M.D., 1392 Warren Rd., Cleveland, Ohio 44107.

NUCLEAR PHYSICIAN. BACKground—Internal Medicine. Board Certified or Board Eligible Nuclear Medicine. Location—Central East Coast, Florida. To share department with man of similar background and training. Immediate opening—Please provide Curriculum Vitae. Reply: Box 200, Society of Nuclear Medicine, 475 Park Avenue So., New York, N.Y. 10016.

NUCLEAR MEDICINE RESIDENT. Two year Residency Program in Nuclear Medicine at The New York Hospital-Cornell Medical Center. Position available July 1, 1978. Contact Jerome G. Jacobstein, M.D., Division of Nuclear Medicine, The New York Hospital-Cornell Medical Center, 525 East 68th Street, New York, N.Y. 10021.

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.

THE UNIVERSITY OF WISCONSIN, Center for Health Sciences is seeking a Nuclear Medicine physician, board certified or board eligible for junior faculty position. Active clinical service for 600 bed hospital. Well developed research program in short-lived radioisotopes, instrumentation and development of tumor scanning agents. 2 year approved residency training program. Send curriculum vitae to: R. E. Polcyn, Director, Nuclear Medicine, University Hospital, 1300 University Ave., Madison, WI 53706. An Equal Opportunity Employer.

NUCLEAR MEDICINE RESIDENCY. The Nuclear Medicine Section at the University of Michigan Medical Center offers a two year, AMA approved residency in nuclear medicine. The clinical staff includes five full time physicians, three physicists, two radiopharmacists and ten certified nuclear medicine technologists. The residency program is divided between clinical training and clinical research. The clinical unit contains 7,000 square feet of space including the main department and a satellite nuclear diagnostic suite in the coronary care unit. 4,000 square feet of research space is available in a connecting building (radiopharmaceutical, physics, instrumentation, and thyroid research). The department is comprehensively equipped for both imaging and in-vitro procedures. The nuclear medicine section also has a technologist training program in which residents participate as instructors. For further information and applications for July, 1978, contact William H. Beierwaltes, M.D., Physician-in-Charge, Nuclear Medicine Section University Hospital, Ann Arbor, Michigan 48109. A non-discriminatory, affirmative action employer.

NUCLEAR MEDICINE TECHNICIAN. Registered or Registry Eligible. Progressive 300 bed hospital is seeking qualified applicants for an immediate first shift, full-time opening in its Nuclear Medicine Laboratory. Competitive salary and excellent fringe benefits. Please direct reply to: Personnel Department, Children's Hospital, 700 Children's Drive, Columbus, Ohio 43205. An equal opportunity employer.

NUCLEAR MEDICINE—3 HOSPITAL practice including in vitro lab needs internist/radiologist with NM Boards for full time practice. Beginning Nuclear Cardiology, teaching experience helpful. Incorporated practice, independent billing, Eastern Pennsylvania. Reply with CV to Box 201, Society of Nuclear Medicine, 475 Park Ave. So., New York, NY 10016.

CHIEF NUCLEAR MEDICINE TECHnologist for active progressive Nuclear Medicine Department in our modern 362 bed acute care general hospital. Applicants must be registered with four years experience including supervisory activities. Hackley Hospital provides excellent salary and comprehensive benefit programs and is located in an all season recreational area. Send resume to the Director of Employee Relations. Hackley Hospital, 1700 Clinton St., Muskegon, Michigan 49443. An Equal Opportunity Employer.

CHIEF NUCLEAR MEDICINE TECHnologist: Registered, or eligible, Nuclear Medicine Technologist. Excellent working conditions in well equipped department doing a wide variety of studies in a 475 bed hospital conveniently located near New York and Philadelphia with all major transportation facilities. Send resume to Personnel Department, St. Luke's Hospital, Bethlehem, Pennsylvania 18015. An Equal Opportunity Employer.

DIRECTOR NUCLEAR MEDICINE SECtion. 500 bed community teaching hospital with 10 approved residencies, located on East Coast. One hour from NYC. Associated with active Radiology Department (7 diagnostic & 1 therapeutic, all board certified). Equipped with C.T. & ultrasound. Approved diagnostic radiology residency. Competitive remuneration with excellent fringe benefits. Must be ABNM certified with academic background. Position available immediately. Contact: Marvin Brodie, M.D. 201-222-5200 ext. 434.

CHIEF NUCLEAR MEDICINE TECHnologist—Division of Nuclear Medicine, Georgetown University Hospital, Washington, D.C. 20007. Contact: John C. Harbert, M.D., (202) 625-7492.

POSITIONS WANTED

BOARD CERTIFIED IN GENERAL radiology, presently second year resident in Nuclear Medicine Department at University Medical center. Desires full time position in Nuclear Medicine or Radiology and Nuclear Medicine starting July 1, 1978. Please reply: P.O. Box 202, Society of Nuclear Medicine, 475 Park Ave. South, N.Y., N.Y. 10016.

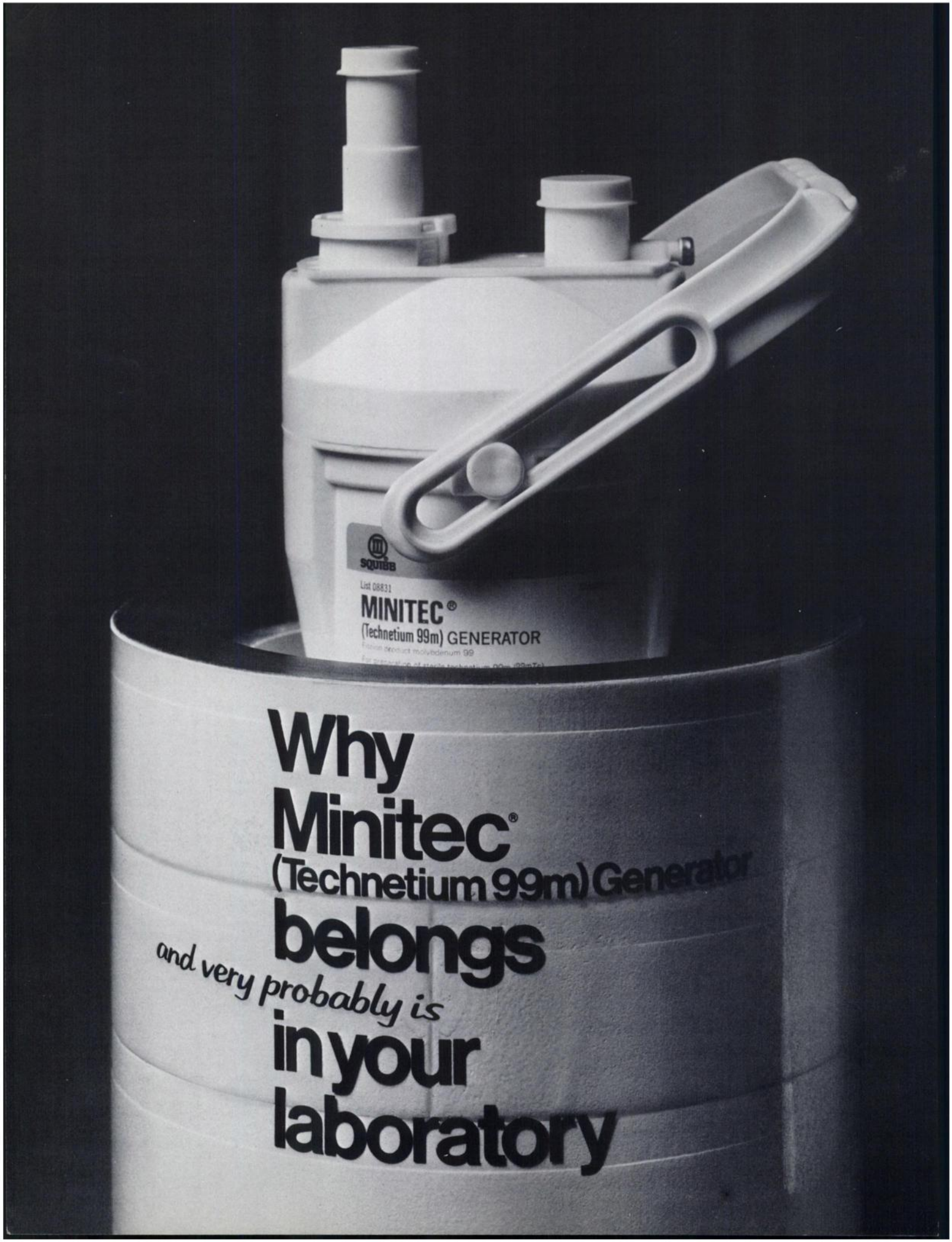
CHIEF NUCLEAR MEDICINE TECHnologist, ARRT registered, with B.S. Degree, and seven years experience in large private teaching hospital. Capabilities include invivo and invitro applications. Expert with most equipment and procedures, including computer applications. Interested in planning, organizing and managing established or new facilities. Prefer to relocate in the Southeast or Southwest U.S. Reply: Box 203, Society of Nuclear Medicine, 475 Park Ave. So., New York, N.Y. 10016.

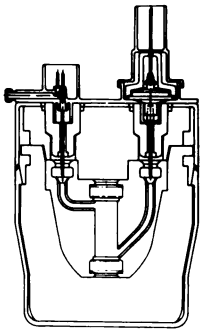
CHIEF NUCLEAR MEDICINE TECHnologist, ARRT registered, 10 years experience. Capabilities include in vivo and in vitro applications. Expert with most equipment and procedures. Interested in supervising, organizing and planning established or new facilities. Reply to Box 204, Society of Nuclear Medicine, 475 Park Ave. South, New York, N.Y. 10016.

NUCLEAR MEDICINE PHYSICIAN, University trained, ABNM certified with 5 years clinical, research and teaching experience in major University Hospital. Seeks position in University or Community Hospital, preferably but not exclusively in Greater New York Area. Reply to Box 205, Society of Nuclear Medicine, 475 Park Ave. So., New York, N.Y. 10016.

FOR SALE

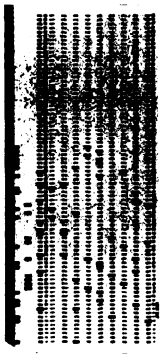
RECENT MODEL SINGLE PROBE scanner with minification capability—(2-1) (5-1). Mint condition with three (3) collimators, ideal for new laboratory or private practice. Please contact M. Coya 215-544-9880.


SQUIBB
List 08831
MINITEC®
(Technetium 99m) GENERATOR
Why
Minitec®
(Technetium 99m) Generator
belongs
and very probably is
in your
laboratory



Radiation Safety

Minitec® (Technetium 99m) Generator was designed for safety as well as efficiency. Protective shielding (⅝") surrounds collecting vial during elution and dose withdrawal. No exposed tubing: 1⅝" lead around column affords high shielding-to-activity ratio. Maxi-Shield™ provides additional 1½" of solid lead shielding...only cap is removed for elution.



Computer Assistance

Customtec®, a free, exclusive Squibb computer service, custom-tailors generator size and delivery schedule to meet a lab's daily ^{99m}Tc requirements. Programs planned by Customtec reduce waste, increase efficiency and promote radiation safety by providing technetium when it is needed — in amounts that are needed. Ask your Squibb Representative for a free program.

Customer Service

Squibb Technical Associates have had extensive training in nuclear medicine, radiopharmaceuticals, RIA and instrumentation. When you need technical information or have an unusual problem, a call to your local TA brings the quick, personal attention of an experienced specialist. Assistance is also available at Squibb headquarters. Telephone 609-921-4100 or write Medotopes Technical Customer Service, P.O. Box 4000, Princeton, N.J. 08540.

Perfect Combinations

Products designed to complement each other are more likely to produce a better end product. When sodium pertechnetate eluate obtained from Minitec (Technetium 99m) Generator is utilized in Squibb imaging kits, the results are purity, quality, and compatibility.

See next page for brief summary.

Medotopes®

SQUIBB®

MINITEC®
Technetium 99m
GENERATOR

DESCRIPTION: Minitec (Technetium 99m) Generator provides a means of obtaining a sterile, nonpyrogenic supply of technetium 99m (^{99m}Tc) as sodium pertechnetate ^{99m}Tc.

INDICATIONS AND USAGE: Sodium pertechnetate ^{99m}Tc is indicated for brain imaging, thyroid imaging, salivary gland imaging, blood pool imaging, and placenta localization.

CONTRAINDICATIONS: None known.

WARNINGS: Radiopharmaceuticals should not be administered to patients who are pregnant or to nursing mothers unless the expected benefit to be gained outweighs the potential hazards.

Since ^{99m}Tc is excreted in human milk during lactation, formula-feedings should be substituted for breast-feedings.

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 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.

IMPORTANT: Since material obtained from the generator may be intended for intravenous administration, aseptic technique must be strictly observed in all handling. Only the eluent provided should be used to elute the generator. Do not administer material eluted from the generator if there is any evidence of foreign matter.

PRECAUTIONS: In the use of any radioactive material, care should be taken to insure minimum radiation exposure to the patient and occupational workers consistent with proper patient management. At the time of administration the solution should be crystal clear.

ADVERSE REACTIONS: No adverse reactions specifically attributable to the use of ^{99m}Tc have been reported.

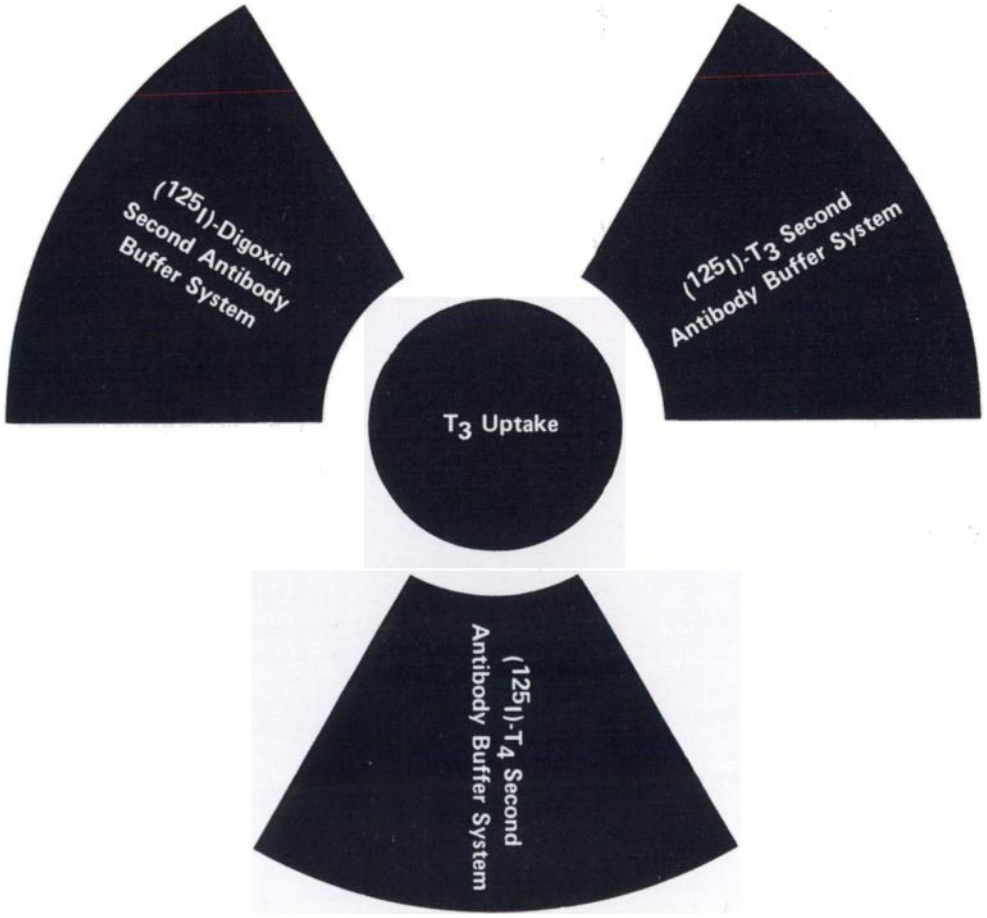
For complete prescribing information, consult package insert.

HOW SUPPLIED: Minitec (Technetium 99m) Generator is available in potencies of 220, 440, 880, 1330, 1770, or 2220 millicuries ^{99}Mo at calibration time. Complete assay data for each generator is provided on the label; directions for determining the activity of material eluted from the generator are provided in the package insert. Supplied with the generator are vials of sterile, nonpyrogenic eluent and suitable equipment for eluting, collecting, and assaying the Technetium 99m.

Medotopes®
SQUIBB®

E. R. Squibb & Sons, Inc.
Princeton, N.J. 08540

RIA KITS



OTHER DIAGNOSTIC KITS AND COMPONENTS ALSO AVAILABLE:

- AEID
- ANA
- Feline Leukemia Virus

You can be assured that you will be charged exactly the same price that any other customer buying the same quantity of material will be charged. This is because we feel that this is the only ethical way to do business. Please write to us for details and prices on these or any other of our products.

Your name _____

Address _____

_____

_____

_____

_____

Preserve your copies of *The Journal of NUCLEAR MEDICINE* for years of reference in a durable, custom-designed Library Case or Binder. These storage units will hold an entire 12-issue volume. The case supplied is an attractive blue with a gold-embosed spine. Each unit also includes a gold transfer so that the volume and year can be recorded.

CASE: Holds 12 issues/$4.95 each
three for $14.00; six for $24.00
BINDER: Holds 12 issue/$6.50 each
four for $25.00

★★★★★★★★★★★★★★★★★★★★★★★★

TO: Jesse Jones Box Corp.
P.O. Box 5121
Philadelphia, PA 19141

I enclose my check or money order for $_____
(Orders outside the U.S. add $1.00 per file for postage and handling)

Please send me _____ *JOURNAL OF NUCLEAR MEDICINE*

_____ Files _____ Binders

Name _____

Address _____

City_____ State_____ Zip _____
Note: Satisfaction guaranteed or money refunded. Allow 5 weeks for delivery.

★★★★★★★★★★★★★★★★★★★★★★★★

Preserve your copies of *The Journal of Nuclear Medicine Technology* for years of reference in a durable, custom-designed Library Case or Binder. These units will hold 2 years of journals (8 issues). The case supplied is a vivid red with a gold-embossed spine. Each unit also includes a gold transfer so that the volume and year can be recorded.

CASE: Holds 8 issues (2 years)/$4.95 each
three for $14.00; six for $24.00
BINDER: Holds 8 issues (2 years)/$6.50 each
four for $25.00

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

TO: Jesse Jones Box Corp.
P.O. Box 5120
Philadelphia, PA 19141

I enclose my check or money order for $_____
(Orders outside the U.S. add $1.00 per file for postage and handling)

Please send me _____ *JOURNAL OF NUCLEAR MEDICINE TECHNOLOGY*

_____ Files _____ Binders

Name _____

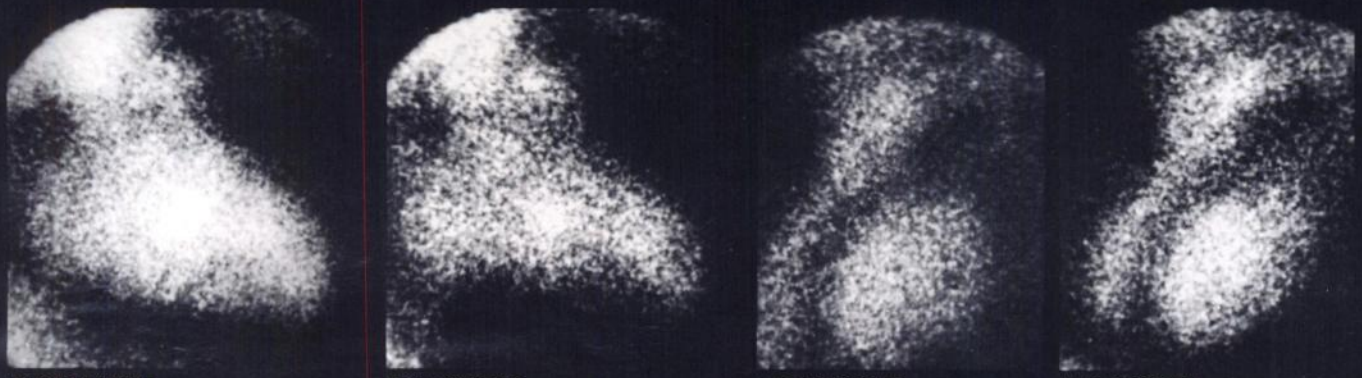
Address _____

City _____ State _____ Zip _____
Note: Satisfaction guaranteed or money refunded. Allow 5 weeks for delivery.

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

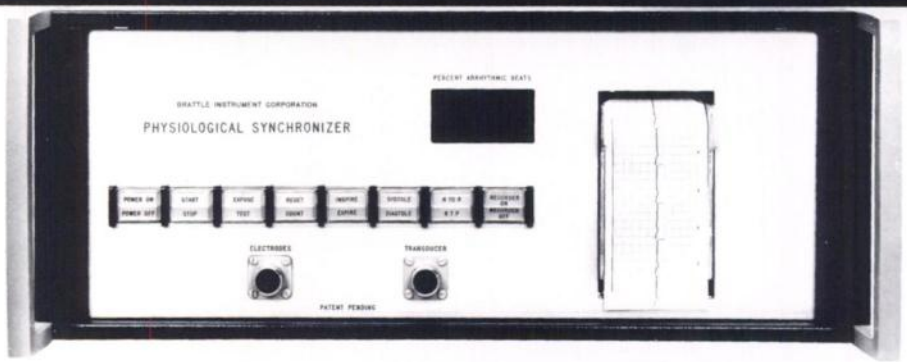
INDEX TO ADVERTISERS

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

SPEED READ

NUCLEAR CARDIOLOGY DATA WITH SCINTISTORE™

Time-compression data storage/retrieval system

THE WAY TO INCREASE CLINICAL UTILITY OF THE PHO/GAMMA® LEM CAMERA

The diagnostic capabilities of the LEM (Low Energy Mobile Scintillation Camera) can now be further extended by the addition of a Scintistore data acquisition system—a portable, computer-compatible, disc-based data acquisition system which includes a cardiac gate. Together, the Scintistore and LEM camera give you the most advanced mobile unit available anywhere today.

"A new dimension in nuclear imaging"

Clinical utility is provided by these features:

- **High Data Rate**—80,000 events per second allow accurate quantification of cardiac function
- **High Data Capacity**—2.5 million events stored on each of two discs to make wall motion studies of the myocardium possible
- **Portability**—Docks compactly with LEM for transport as a single unit, accompanies LEM to patient's bedside
- **Time-Compressed Replay**—Retrieves information at rate of 50,000 events per second, irrespective of recording rate, saves physician time

Cardiac Gating

The cardiac gate is digitally implemented through an eight-bit microprocessor. It performs gated imaging for wall motion studies of the myocardium.

SEARLE

Searle Radiographics
Division of Searle Diagnostics Inc.
2000 Nuclear Drive
Des Plaines, Illinois 60018 U.S.A.
Telephone 312/298-6600