Xenon

Xenon Xe 133

How you like it
When you like it

How you like it

MPI Xenon Xe 133 is now available in four product configurations—from unit dose to bulk:

- Ventilation Study System (V.S.S.)
- 10 mCi vials
- 20 mCi vials
- 1.3-1.7 Ci ampules (crushable and breaksealed)

When you like it

MPI Xenon Xe 133 delivery and calibration schedule—utmost convenience and optimal product use:

Product	1st Rec.	Calibrated 12:00 Noon
V.S.S.	Monday	Thursday
10 & 20 mCi vials	Monday Thursday	Thursday Monday
1.3-1.7 Ci Ampules	Monday	Prior Friday

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

Xenon Xe 133-V.S.S. For the study of pulmonary ventilation.

Xenon Xe 133 Gas Ampule & MPI Xenon Xe 133 Gas Vial. For the study of pulmonary ventilation and assessment of cerebral blood flow.

DESCRIPTION: The Xenon Xe 133-Ventilation Study System consists of a sealed frangible capsule containing 10 millicuries ± 20% of Xenon Xe 133 gas at calibration time and date with less than 1% carrier xenon in air. Xenon Xe 133 Gas vials is supplied as a carrier-free gas in concentrations of 10 to 50 mCi per milliliter of gas for inhalation. Xenon Xe 133 Gas Ampule is supplied as a carrier-free gas in 4 ml crushable or break-sealed glass ampule in concentrations of 0.43 to 0.33 Curie/ml. Xenon Xe 133 is produced by fission of Uranium-235. It is chemically and physiologically related to elemental xenon, a non-radioactive monoatomic gas which is physiologically inert except for anesthetic properties as high doses.

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 radio-pharmaceuticals, 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.

There are no well-controlled studies in pregnant women which allow any conclusions as to the safety of Xenon Xe 133 for the fetus, Xenon Xe 133 should be used in pregnant women only when clearly needed.

Concentrated Xenon Xe 133 gas supplied in ampule must be diluted to the activity range appropriate to the route of administration.

PRECAUTIONS: Xenon Xe 133 gas as well as other radioactive drugs, must be handled with care and appropriate safety measures should be used to minimize radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to the patients consistent with proper patient management.

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 leakproof 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.

HOW SUPPLIED: Each Ventilation Study System (V.S.S.) contains Xenon Xe 133 in a sealed frangible capsule containing 10 millicures ± 20% at calibration time and date stated on the label. Each Xenon Xe 133 Gas ampule is supplied in 4 ml crushable or break-sealed ampules containing 1.7 to 1.3 Curies. Each Xenon Xe 133 Gas vial contains 10 or 20 mCi of gas.

Safety, Convenience and Versatility

For more information, call or write

medi+physics™

5801 Christie Avenue, Emeryville, CA 94608
(415) 658-2184, Toll Free (Outside CA) (800) 227-0492, (Inside CA) (800) 772-2477

You count on your technologist to provide the best diagnostic information possible.

Your technologist can count on

Medical Data Systems

Designed for the clinician and easy to use.

See the Medical Data Systems difference at the RSNA Meeting in Chicago, November 15-20.

CLINICAL IMAGING SYSTEMS

Every department has its own way of working with patients, performing studies, reading images—its own flow.

Your work style is enhanced by simultaneous acquisition and processing and the capability of viewing new/old and intermodal studies side by side.

Medical Data Systems' menu structure permits branching between functions or patients at any point, true batch processing, and the addition of operator-defined protocols to standard menus—features designed for operator convenience.

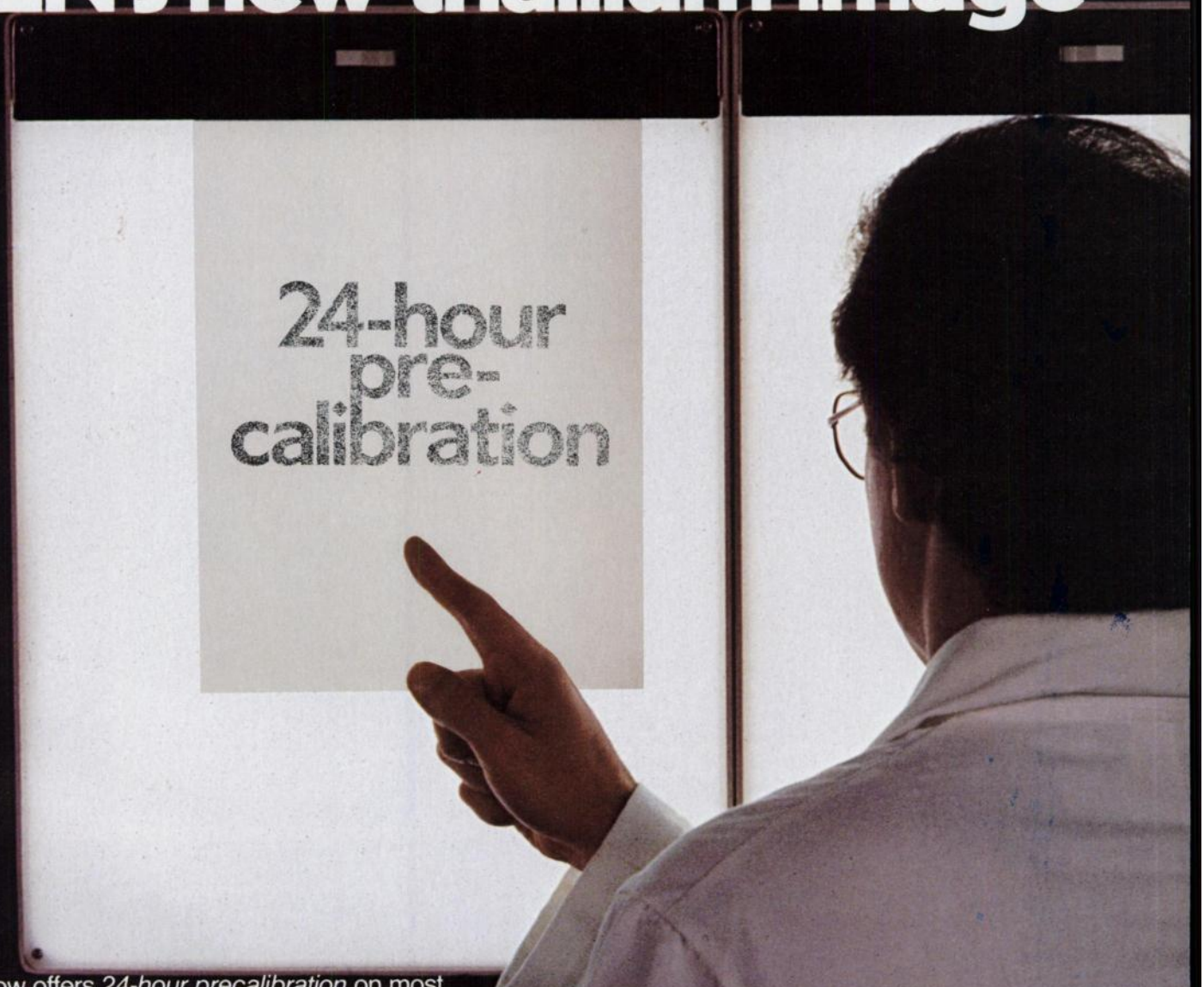
Clinically proven software provides sharp, clear images and numbers you can trust.

Medtronic Medical Data Systems

2311 GREEN ROAD ANN ARBOR, MI 48105 (313)769-9353 TELEX 235794

Medical Data Systems products, hardware and software, are tools for discrete patient evaluation and research which do not come in contact with and cannot cause direct injury to the patient. Refer to the operation manual and instructions accompanying the acquisition device for further information on their use. To ensure proper clinical results, a Medical Data Systems product must be used under the direction of, and using procedures verified by, a qualified physician.

NEN's new thallium image



NEN now offers *24-hour precalibration* on most shipments of thallium-201—with all the advantages of greater activity, lower cost per mCi and scheduling convenience.

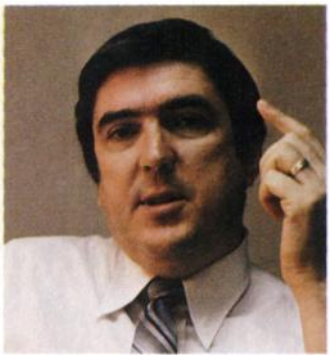
You can now have thallium-201 available when you need it—with less risk that a cancelled study will leave you with an unused dose. On the day of receipt, your 2.2 mCi vial has 2.7 mCi of acitivity—that's 25% on top of a 10% overfill. And at *no additional cost.*

With precalibration, you'll be able to "stock" thallium, so that referring physicians can schedule routine studies at the convenience of their patients, the cardiologist and your laboratory personnel. Just as important, thallium will be on hand for unscheduled or emergency use. Precalibrated thallium-201 is available Monday through Friday only from NEN, enabling you to perform studies *every day of the week.*

Ask your NEN representative how you can set up a standing order for precalibrated thallium. Or call us.

We're committed. We're NEN New England Nuclear

Call us toll free at (800) 225-1572; in Massachusetts (617) 482-9595; in Canada (514) 636-4971



"We put a lot of engineering skill and experience into every system we build.
But we judge the end result the way doctors do.
By the quality and accuracy of the data it produces.
By its clinical usefulness.
And by its ability to handle heavy caseloads easily and without delay.
Here are three examples of what I mean."

Charles W. Cantoni, President

ADAC Radiation Therapy Planning System.

It's the only therapy planning system that speaks to therapy planners in their language. It's also the only system that calculates monitor units or time and delivers treatment-ready documentation.

In most cases you can begin clinical planning the same day our applications specialists begin training you and your staff.

ADAC Nuclear Medicine Systems I-IV.

Our modular design lets you choose one of four systems that will exactly meet the requirements of your clinic or hospital. As your requirements grow, your system can grow.

When processing a study, ADAC software allows you to go directly to any option you choose – in any menu. Instantly.

New programs for ADAC Systems I-IV include automatic Fourier-based phase and amplitude analysis algorithms, an automatic Laplacian edge detection technique, quantitative Thallium, and high-speed list mode acquisition and reconstruction.

ADAC DPS-4100 Digital Radiography System

The DPS-4100 may be easily interfaced with existing fluoroscopic and special procedures x-ray equipment – permitting information yields and diagnosis techniques never before possible with those systems.

The exclusive DIASTAT™ capability gives you instant quantification of data, in some cases enabling you to make a diagnosis right at tableside.

For more information about ADAC systems, write or call toll-free.

ADAC Laboratories, 255 San Geronimo Way, Sunnyvale, California 94086. (800) 538-8531. In California, call (408) 736-1101 collect.

Diastat is a trademark of ADAC Laboratories.

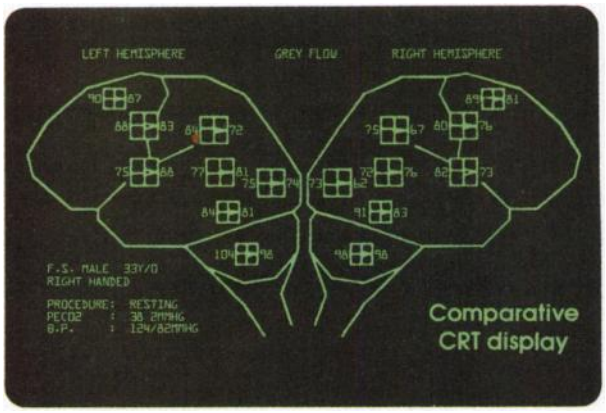
ADAC

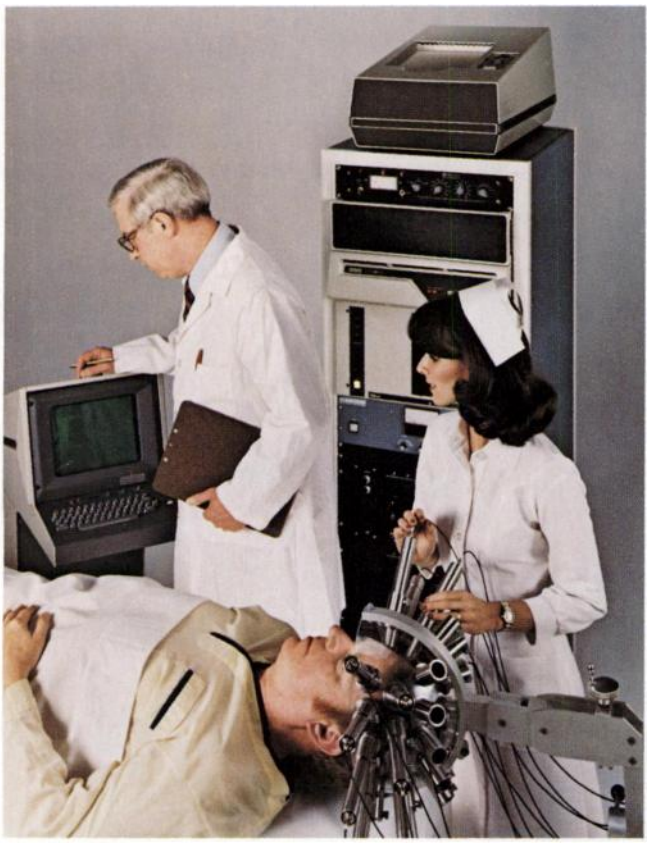
Therapy Planning and Medical Imaging Systems

rCBF Measurement:
FAST and ACCURATE

The Harshaw TASC-5™ is a completely integrated, fully computerized system for fast and accurate non-invasive rCBF analysis.

It has been proven under the most stringent demands of clinical applications. Using the inhalation method of ^{133}Xenon administration, Harshaw's TASC-5 System entirely eliminates patient danger and stress normally associated with invasive methods. In addition, three major improvements increase the TASC-5 System's accuracy, flexibility and ease of operation: a new software routine; a direct, onscreen and comparative graphic presentation; and instant hard copy capability with Harshaw's new hard copy attachment.





Improved hardware and software—for increased reliability and efficiency.

Equipment operation is simpler and even more reliable with Harshaw's newly refined hardware. An update of our classic computer program offers a significant reduction in analysis time.

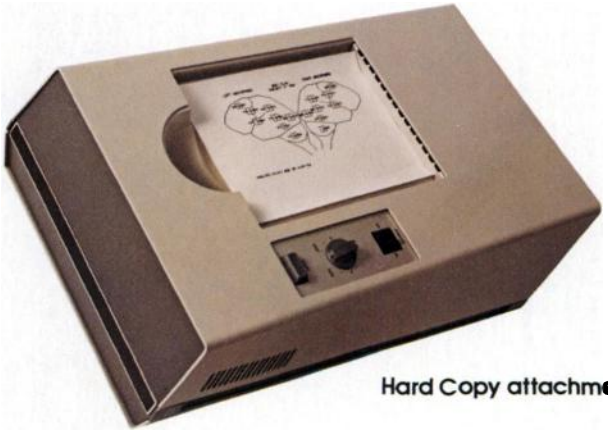
Hard copy attachment—a permanent record, instantly available.

Fast, accurate analysis is made even easier by Harshaw's hard copy attachment. It provides an instant, silent, permanent record of the tabular or comparative graphic presentation on the terminal CRT, and eliminates the need for a teletypewriter or other impact printer. The result is a significant savings in analysis time, and the elimination of "translation" errors that can reduce accuracy.

TASC-5—an increasingly accepted clinical tool.

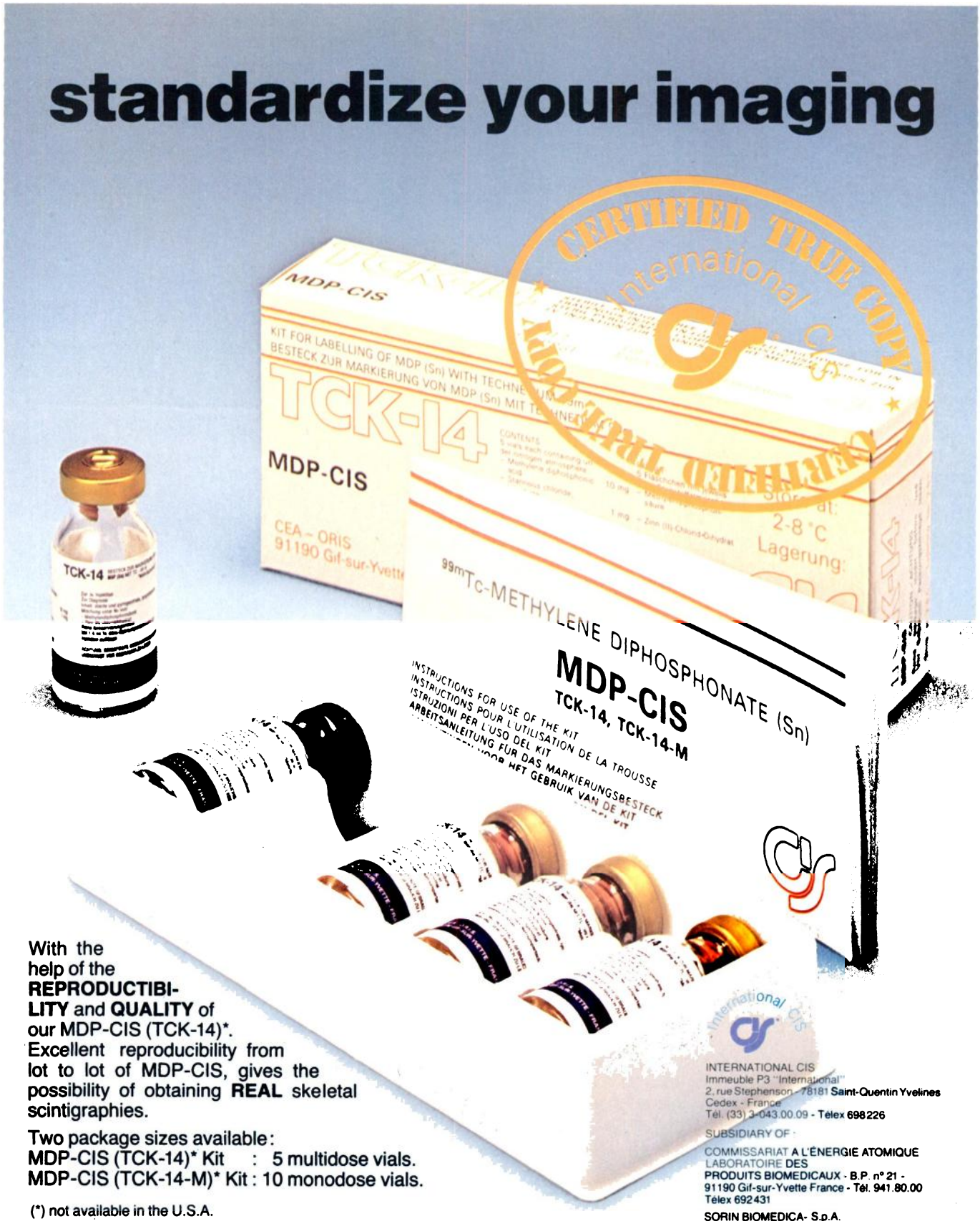
Harshaw's TASC-5 System is the most advanced and experienced Regional Cerebral Blood Flow Analyzer available. And it is the commercial, non-invasive system used by more U.S. institutions presently performing rCBF studies than all other commercial systems combined. We'll be happy to demonstrate its capability for you.

Call or write us. We're The Harshaw Chemical Company, Crystal & Electronic Products, 6801 Cochran Road, Solon, Ohio 44139. (216) 248-7400.


Hard Copy attachment

HARSHAW

standardize your imaging



With the help of the **REPRODUCTIBILITY** and **QUALITY** of our MDP-CIS (TCK-14)*. Excellent reproducibility from lot to lot of MDP-CIS, gives the possibility of obtaining **REAL** skeletal scintigraphies.

Two package sizes available:
MDP-CIS (TCK-14)* Kit : 5 multidose vials.
MDP-CIS (TCK-14-M)* Kit : 10 monodose vials.

(*) not available in the U.S.A.

For more information, contact us or your local CIS distributor.

INTERNATIONAL CIS
Immeuble P3 "International"
2, rue Stephenson - 78181 Saint-Quentin Yvelines
Cedex - France
Tél. (33) 3-043.00.09 - Télex 698226

SUBSIDIARY OF :

COMMISSARIAT A L'ÉNERGIE ATOMIQUE
LABORATOIRE DES
PRODUITS BIOMEDICAUX - B.P. n° 21 -
91190 Gif-sur-Yvette France - Tél. 941.80.00
Télex 692431

SORIN BIOMEDICA- S.p.A.
GRUPPO RADIOCHIMICA
13040 Saluggia (Vercelli) - Italy - Tél. (0161) 48155
Télex 200064

SUBDIARIES :

CIS (UK) Ltd - Rex House - 354 Ballards Lane
North Finchley, London, N 12 OEG
Tél. 1-446-4405 - G.B.

Isotopen Dienst West - Einsteinstrasse 9-11
6072 Dreieich bei Frankfurt-am-Main
Tél. 06103-3855 - Germany

The total system

MaxiCamera™ 400T/Star™ system: Performs ECT studies; increases flexibility and throughput for routine nuclear diagnostic procedures. All from one source...General Electric.

You only need to consider one nuclear diagnostic supplier for equipment to perform the full range of procedures needed by your department. Because, now General Electric combines the MaxiCamera 400T scintillation camera with the Star data processor... designed to work together so you get maximum performance from both.

Routine procedures. MaxiCamera 400T provides unparalleled performance for routine studies. The counterbalanced detector can be easily positioned manually to the best organ viewing angle, eliminating the need for uncomfortable patient repositioning. Silent movement reduces patient apprehension. Fingertip controlled brakes automatically lock the detector in the desired position. These features can result in faster throughput and increased patient comfort.

Emission Computed Tomography (ECT). You can now team the MaxiCamera 400T with the Star system and tomographic software for complete ECT capability. Acquisition is automatically controlled by the rotational control module based upon operator specified input, including number of views and time of acquisition of each view.

The operator can display reconstructed data as transaxial, sagittal coronal and even select oblique angle projections to enhance diagnostic accuracy. Star system algorithms include center of rotation calculation and operator selectable filters.

Planned evolution design. As procedural demands and new technology develop, modular electronics permit your GE system to be easily upgraded, without system replacement or major alteration. Investment security from GE.

That's the total system...from General Electric. Ready now to perform all of your nuclear diagnostic imaging studies as your single source supplier. Anything else is something less.

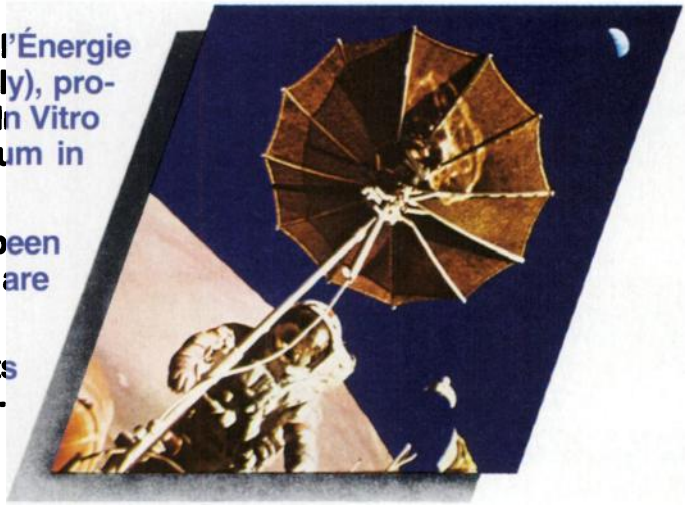
General Electric Medical Systems.

MaxiCamera 400T and Star system:
at the leading edge of imaging technology.

GENERAL ELECTRIC

MAXIMUM IN PERFORMANCE AND SECURITY

CIS



CIS, a subsidiary of the Commissariat à l'Énergie Atomique (France) and Sorin Biomedica (Italy), provides the worldwide market with In Vivo and In Vitro diagnostic products which give the maximum in *performance and security.*

We are not a fly-by-night supplier. We have been in this business for over 20 years and we are here to stay.

The *performance and security* of our products is assured by a stringent quality control program which never loses sight of the purpose of a product: an aid in *diagnosis.*

CIS has one of the widest range of products available and it is constantly being increased due to our significant research and development efforts. Our program also includes a continual updating of our existing products, taking advantage of the latest technology.

So when you need a product giving the maximum in *performance and security,* think of CIS. You'll be glad you did.

For more information contact us or your local CIS distributor.

International CIS

INTERNATIONAL CIS
Immeuble P3 "International"
2, rue Stephenson
78181 Saint-Quentin Yvelines
Cedex - France
Tél. (33) 3-043.00.09
Télex 698226

SUBSIDIARY OF :
COMMISSARIAT A L'ÉNERGIE ATOMIQUE
LABORATOIRE DES PRODUITS BIOMEDICAUX
B.P. n° 21 - 91190 Gif-sur-Yvette
France - Tél. 941.80.00 - Télex 692431

SORIN BIOMEDICA- S.p.A.
GRUPPO RADIOCHIMICA
13040 Saluggia (Vercelli) - Italy -
Tél. (0161) 48155 - Télex 200064

SUBDIARIES :

CIS (UK) Ltd - Rex House -
354 Ballards Lane North Finchley,
London, N 12 OEG - Tél. 1-446-4405
G.B.

Isotopen Dienst West -
Einsteinstrasse 9-11 - 6072 Dreieich
bei Frankfurt-am-Main
Tél. 06103-3855 - Germany

SIEMENS

New ROTA CAMERA with dual ZLC detectors for high performance Single Photon ECT

Introducing an imaging system designed to the rigid performance criteria of SPECT and engineered to set the standard of excellence.

Linearity and Uniformity

ZLC detectors dramatically improve linearity and uniformity by correcting intrinsic energy variations and spatial non-linearities, over the entire field of view. The source of circular artifacts is eliminated and optimum spatial resolution is achieved.

Mechanical Stability

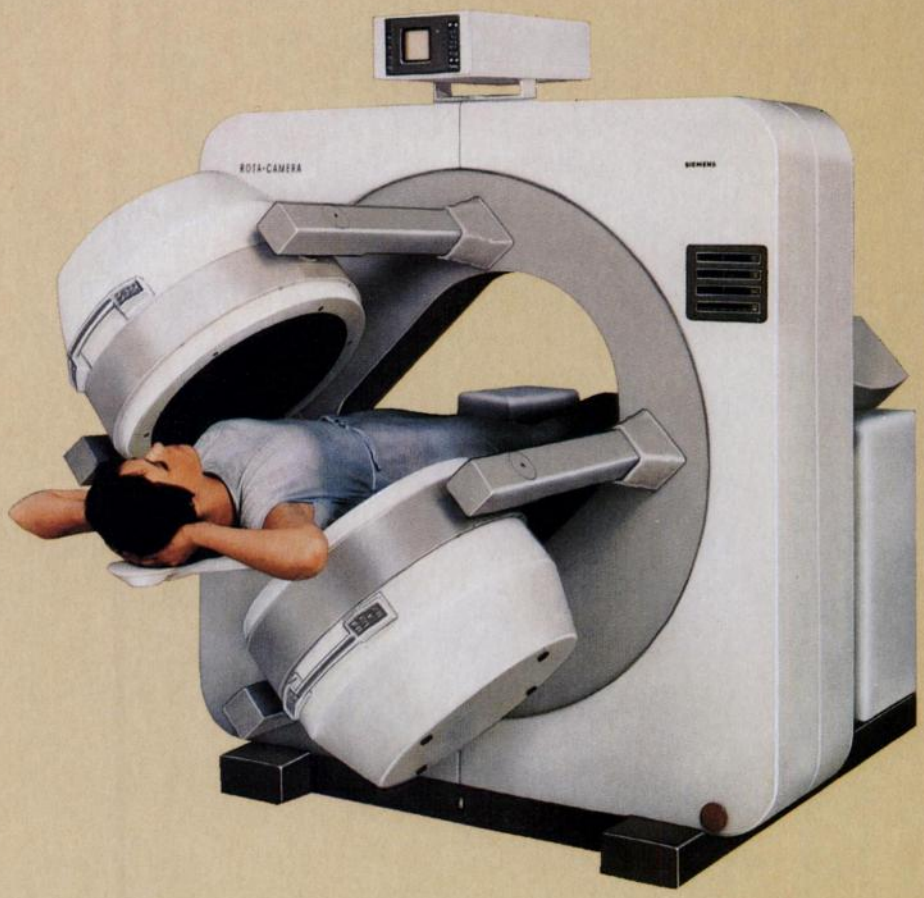
The stable gantry precisely controls and tracks the detectors position during rotation to ensure high resolution images, free of artifacts and blurring.

Patient Comfort

The gantry's cantilever construction and 4-way powered tabletop facilitates patient set up. Clearances are easily maintained and the new narrow detector flange improves patient-detector positioning while maximizing usable crystal area.

Sensitivity

Dual detectors double the system sensitivity and the additional counts achieved assure more accurate data and image quality for evaluation.



Siemens Corporation,
Nuclear Medical Division,
186 Wood Avenue South,
Iselin, N.J. 08830
Telephone: (201) 494-1000

Siemens... an investment in diagnostic confidence

MG/5310-008

In the sixties it was Instant Technetium
In the seventies it was Technetium Generators
And in the eighties it's Unit Doses

We feel that the distribution of radiopharmaceuticals
in the eighties will be primarily
through nuclear pharmacies, and Pharmatopes is
the leader in providing this service.

PHARMATOPES ADDRESSES THE PROBLEMS OF THE EIGHTIES:

- **Compliance With ALARA**
- **Waste Disposal Management**
- **Cost Containment**
- **Quality Control Assurance**

Pharmatopes, Inc.

NUCLEAR PHARMACY SERVICES

DETROIT 543-8400 • GRAND RAPIDS 245-8781 • TOLEDO 473-1215 • DAYTON 461-9300 • CINCINNATI 984-6517
COLUMBUS 252-3176 • AKRON 753-1009 • INDIANAPOLIS 872-3301 • CHICAGO 666-8200 • DYER, IN 924-8818
VIRGINIA BEACH 490-3159 • RICHMOND 643-1054 • BALTIMORE 252-0420 • WASHINGTON D.C. 686-0742
SACRAMENTO 381-7131 • SANTA CLARA 733-7550 • TULSA 665-2250 • MIAMI 592-4743 • NEWARK 429-9545
HARTFORD 527-1100 • NEW YORK CITY 747-3101 • OAKLAND 547-6221

WE CAN HELP YOU MEET THE CHALLENGES OF THE EIGHTIES

AccuSync

The finest R-wave Triggering device available for computerized gated cardiac studies.

FEATURES	BENEFITS
• Exclusive **Double Discrimination** provides precise definition of R-wave.	• Computer is gated only on the R-Wave. High amplitude T-waves are ignored.
• ECG Strip Chart Recorder	• Provides permanent record of patient ECG. Insures proper lead placement.
• Four digit LED Display	• Indicates R-R Interval or Heart Rate during stress studies.
• Trigger Pulse LED	• Monitors presence of output signals to the computer.
• Unlimited Heart Rate Capability	• Both Heart Rate display and R-trigger pulses have unlimited tracking capability during stress studies.
• Trigger Control	• Provides desired setting of R-wave amplitude discrimination.
• Digital CRT Monitor	• Visual monitoring of ECG and R-wave trigger.
• ONE YEAR WARRANTY	• ONE YEAR WARRANTY

MODEL	FEATURES	
AccuSync-V	R-Trigger pulse output, ECG output, Heart Rate/ R-R int., Strip Chart Recorder, Digital CRT Monitor and Isolation Amplifier for patient safety.	
AccuSync-I	All AccuSync-V features with the exception of Digital CRT Monitor.	
AccuSync-II	All AccuSync-I features incorporated into a Module designed to fit into certain Mobile cameras.	
AccuSync-III	All AccuSync-I features with the exception of the Strip Chart Recorder.	
AccuSync-IV	All AccuSync-III features with the exception of the Heart Rate/R-R int. display.	

RMR Advanced Medical Research Corp./P.O. Box 3094/301 Brewster Road
Milford, CT 06460/Telephone: (203) 877-1610

The Ventilation Connection

Ventil-Con II + Vent-Al

Adds up to a complete Xenon ventilation system

When the Ventil-Con II and new Vent-Al are combined, you get a system which, for the first time, enables you to perform Xenon studies on mechanically vented (respirator) patients.

The RADX Ventil-Con II, recognized worldwide as the leading Xenon rebreathing system, was the first to offer:

- Automatic O_2 replenishment
- In-line autoclavable bacteriological filter
- Dry-rolling spirometer
- Xenon concentration meter
- Shielding equivalent to 1/8" lead
- Reuse of stored Xenon

The Ventil-Con design limits dead space to less than 25 ml, and has less than 0.2 in/H_2O resistance to normal breathing. Xenon trap with exhaust port detector/alarm is built in.

Now RADX is the first to develop the Vent-Al an accessory for the Ventil-Con, for performing Xenon studies on respirator patients. The Vent-Al may be field installed on any Ventil-Con or factory installed in a Xena-Con. Vent-Al provides electronically variable breaths/minute and breathing volumes.

Let RADX tell you more about the Ventilation Connection. Call our toll free number 800-231-1747 (Texas customers call 713-468-9628).

RADX
P.O. Box 19164 Houston, TX 77024

BORN TO RUN

A Third Generation PAP Test from HYBRITECH

Prostatic Acid Phosphatase (PAP) was among the first biochemicals to be used as a human cancer marker.[1] Though used for this purpose for over 40 years, experience has shown that available PAP tests are not adequately specific or sensitive measures of prostatic cancer. Consequently, more accurate methods of detecting and measuring serum PAP have been sought.

First Generation PAP Assays

At first, the enzymatic activity of PAP was measured. Investigators quickly recognized that enzyme activity assays are not completely specific; nor are they adequately sensitive or precise.[2] For years PAP assay research focused on the improvement of enzymatic methods via "better" inhibitors or "more specific" substrates for PAP.

We now understand why PAP enzymatic activity assays, whether based on inhibitors or substrates, face inherent obstacles to achievement of the desired accuracy and precision. The obstacles are basic to the physicochemistry of the PAP molecule.

PAP is a glycoprotein of molecular weight of approximately 100,000 daltons.[3] It consists of two apparently identical subunits, each of approximately 48.000 daltons.[4] The enzymatic activity of the molecule is sensitive to pH, and is optimal at pH 5.5. The molecule dissociates into its two subunits at pH 2.0 or lower, or at pH 7.4 or greater. The PAP molecule loses its catalytic activity upon dissociation and, additionally, the two subunits will immediately begin to aggregate.[4]

The pH sensitivity of PAP to even mildly basic conditions and the "denaturation" sensitivity of the molecule to storage temperature and chemical treatment cause enzyme activity assays to measure PAP concentration changes which may reflect the *in vitro* conditions encountered by the test sample instead of the *actual* PAP concentration of the patient at the time of drawing. Thus, seemingly minor variations in the test sample environment may cause significant fluctuations in *apparent* patient results, yielding both incorrect patient values and assay precision data that have been unacceptable to many chemists and clinicians.

The Second Generation

Understanding the basic "molecular" aspects of PAP and the resulting difficulties of enzymatic assays for PAP, investigators began pursuing alternative methods. The method chosen as theoretically superior was an immunoassay. It promised improved stability, specificity, sensitivity and precision.

Using antiserum raised in rabbits, competitive-binding "labeled antigen" isotopic assays (RIA) were developed by investigators who, in the mid-1970's, reported significantly improved PAP assays.[1,2] Despite active disagreement on particular aspects of PAP immunoassays, reports continued to emphasize the advantages of immunoassays over enzyme activity assays for PAP testing.[1,2,5,6]

RIA overcame many problems of enzymatic PAP measurement, but it also introduced some new problems. The RIA problems can also be traced to the molecular aspects of PAP. But the new problems resulted from preparation of the *reagents* rather than test sample instability. They in-

A Third Generation PAP Test from HYBRITECH

clude: instability of the RIA tracer; standard curves that significantly change their shape; "normal ranges" that differ from product to product and non-specific binding (NSB) values that increase markedly over time, reducing sensitivity and resolution of the assay.

These problems are caused by the purification steps necessary to obtain PAP for use as an immunogen for conventional antiserum production, and as an isotopically-labeled tracer. Because PAP *is* subject to denaturation with pH, temperature and chemical changes, the process of purifying and concentrating isoenzyme often causes denaturation. If the host animal is immunized with denatured or altered PAP molecules, the resulting antiserum will contain antibodies that imperfectly recognize the intact, native molecules.

Moreover, the chemical process used to isotopically label PAP may further alter its immunoreactivity. This can cause the tracer molecule to be "seen" by the antibody differently from the native molecule. These inherent problems of RIA reagents have contributed to the differing normal ranges, specificity data and sensitivity limits reported by various investigators and commercial product suppliers.[6]

The Third Generation

TANDEM™ PAP Kit incorporates a new, recently reported method to measure PAP.[7] TANDEM PAP is a solid-phase two-site immunoradiometric assay (IRMA) employing two different MONOCLONAL ANTIBODIES to identify and quantitate native PAP molecules. "Labeled" PAP molecules are not used in TANDEM. Instead an isotopically-labeled monoclonal antibody serves as the tracer. No extensive purification of PAP is required, because monoclonal antibody selection is made at the *cellular* level to "screen out" antibodies to undesired contaminants or even to *undesired antigen sites* on the PAP molecule. Monoclonal antibodies can therefore be raised against a *more native form of the antigen*, because a "super pure" immunogen is not required. Avoiding the requirement for purification and isotopic labeling of PAP removes the tracer instability problem of RIA. That fact, coupled with the improved specificity of monoclonal antibodies to PAP, and the elimination from the antibody reagent of the nonreactive protein that constitutes the majority of conventional antiserum result in NSB's for TANDEM PAP that are *typically less than 1%*. Significantly reduced NSB's improve the precision, sensitivity and resolution of TANDEM PAP across the entire range of assay.

TANDEM PAP Kit

TANDEM PAP *is* the "Third Generation" PAP test. It is based on an improved understanding of the molecular aspects of PAP.

TANDEM MONOCLONAL ANTIBODIES are "born" for use in an *in-vitro* assay.

In addition to performance, TANDEM delivers procedural simplicity and convenience. A coated bead solid phase method permits simultaneous incubation of both antibody reagents and the test sample, followed by a single wash procedure and no centrifugation. The result is a consistently reproducible, convenient assay that delivers the clinical results necessary to accurately follow-up a clinical diagnosis of prostatic cancer, or to precisely monitor the patient undergoing therapy. And, TANDEM adds a totally new technology, *monoclonal antibodies*, to the method of measurement of PAP isoenzyme.

TANDEM PAP was born to run. Its monoclonal antibodies were conceived, engineered and cloned toward a single objective — a superior PAP assay to be run in the clinical laboratory.

TANDEM PAP Kit: The *Third* Generation. Run TANDEM PAP in your laboratory. Available in 100 determinations. For additional information, please contact us.

Hybritech™ INCORPORATED
The cell fusion company

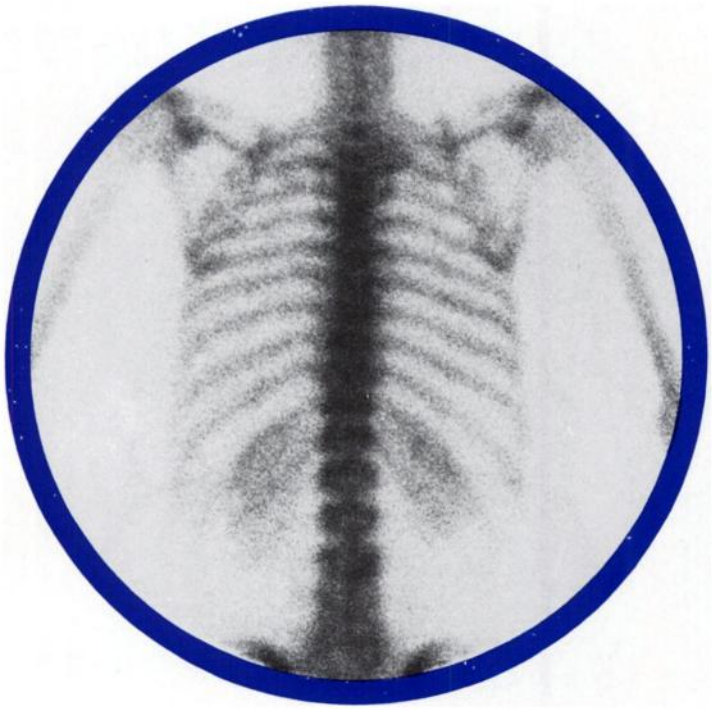
11085 Torreyana Road
San Diego, California 92121
Telephone (714) 455-6700

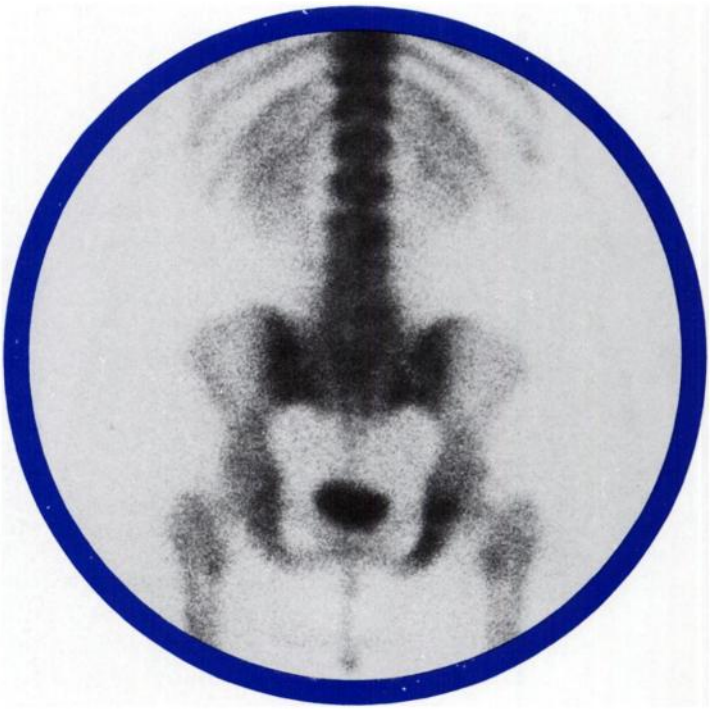
References:

1. Foti, A.G., et al., Detection of Prostatic Cancer by Solid-Phase Radioimmunoassay of Serum Prostatic Acid Phosphatase. New Engl. J. Med. 297:1357, 1977.
2. Griffiths, J.C., Prostate-specific Acid Phosphatase; Re-evaluation of Radioimmunoassay in Diagnosing Prostatic Disease. Clin. Chem. 26:433, 1980.
3. Choe, B.K., et al., Purification and Characterization of Human Prostatic Acid Phosphatase. Prep. Biochem. 8:73, 1978.
4. Derechim, M., et al., Acid Phosphomonoesterase of Human Prostate Molecular Weight, Dissociation and Chemical Composition. Biochem. Biophys. Acta 250:143, 1971.
5. Lindholm, G.R., et al., Prostatic Acid Phosphatase by Radioimmunoassay, Sensitivity Compared with Enzymatic Assay. JAMA 244:2071, 1980.
6. Demers, L.M., Prostatic Acid Phosphatase: Assay Comparisons., Laboratory Management 19:8, 1981.
7. Wang, R., et al., The TANDEM™ PAP System: A Simplified Radioimmunometric Assay Employing Monoclonal Antibodies to Prostatic Acid Phosphatase., Cl. Chem., 6:1063 1981.

A superior bone scanning agent

Osteoscan-HDP represents a significant technological advance in bone scanning agents. Its unique active ingredient, hydroxymethylene diphosphonate (HDP), provides higher bone uptake than MDP-based agents for clear, definitive scans and excellent lesion detection.





Bone uptake superior to MDP

HDP shows unusually high adsorption to bone. In a clinical comparison, Osteoscan-HDP averaged 21% higher bone uptake than the MDP-based agent.[1]

Rapid blood clearance

No bone agent clears the blood faster. Only 6% of Osteoscan-HDP remains in the blood two hours after injection.[2] Osteoscan-HDP's rapid blood clearance contributes to the overall quality of the image and permits flexibility in scheduling patient scans from 1 to 4 hours post-injection.

Scan data:

The two scans above are of a 56-year-old female patient with breast cancer. Scan: abnormal activity in right ischial ramus. Instrument: General Electric MaxiCamera™ 535; total counts: 2000K; dose: 20.8 mCi; 5'5", 175 lb; dose-to-image time: 2.25 hours

Notice excellent bone delineation in this obese patient.

References:

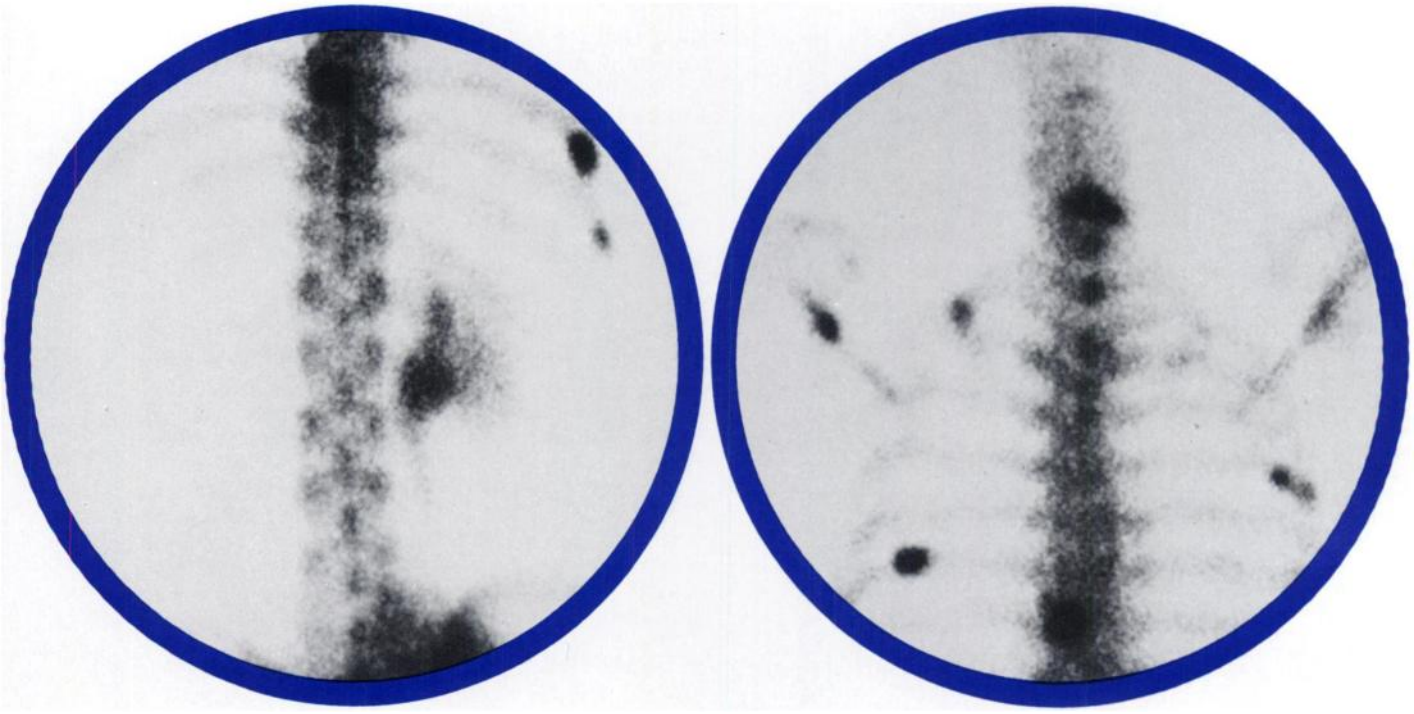
1. Fogelman, I. et al: Presented at the 1980 Annual Meeting, SNM, Southeastern Chapter.
2. Silberstein, E.B.: *Radiology* 136: 747-751, 1980.
3. Littlefield, J.L., and Rudd, T.C.: *Clin. Nucl. Med.* 5:S28, 1980 (abstr.).

offering higher bone uptake

PROCTER & GAMBLE

OSTEOSCAN®-HDP

Technetium Tc99m Oxidronate Kit



Unexcelled image quality[3]

Osteoscan-HDP's high bone uptake and rapid blood clearance permit clear visualization of skeletal detail even in difficult-to-scan elderly patients.

High lesion sensitivity

HDP offers a high tumor-to-normal bone ratio. This results in high resolution scans capable of demonstrating subtle skeletal metastases and fractures with no sacrifice in overall image quality.

See for yourself

To order Osteoscan-HDP, or for further information, call or write Procter & Gamble, Professional Services, P.O. Box 85507, Cincinnati, Ohio 45201, (513) 977-5547.

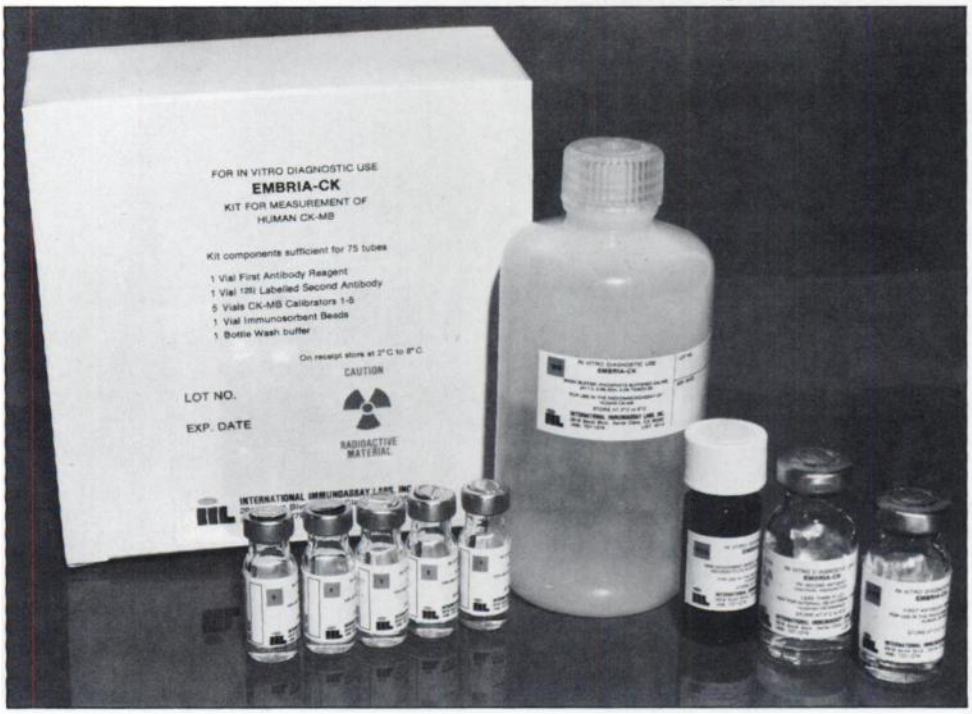
Scan data:

The two scans above are of a 79-year-old male patient with adenocarcinoma-prostate. Scan: multiple lesions. Instrument: Picker 4/15 Gamma Camera; information density: 3000; dose: 15 mCi; dose-to-image time: 3 hours

IVP revealed mass in right kidney causing retention.

Please see the following page for a brief summary of prescribing information.

Test for CK-MB Isoenzyme



Compare Specificity — Compare Sensitivity
Compare Diagnostic Utility

Specificity

EMBRIA-CK does not react with CK-BB, CK-MM, atypical-CK, AK
You don't have to worry about subtraction, dilution, carryover, incomplete inhibition.

Sensitivity

EMBRIA-CK uses very sensitive immunoradiometric method
You don't have to worry about the noise created by non-specific florescence, substrate variations or instruments which lower specificity as sensitivity is increased.

Diagnostic Utility

EMBRIA-CK for Early and Late Detection
Due to increased sensitivity, EMBRIA-CK often detects abnormal amounts of CK-MB earlier than other methods and stays elevated longer than other methods.

EMBRIA-CK for Low Total CK Patients in CCU
Increased sensitivity and low noise allows EMBRIA-CK to detect elevated CK-MB in spite of low levels of total CK.

EMBRIA-CK for Surgical and Trauma Patients
EMBRIA-CK quantitation and specificity allows one to detect the rise and fall of CK-MB in spite of large excess of CK isoenzymes. It is an ideal test for cardiac surgery patients.

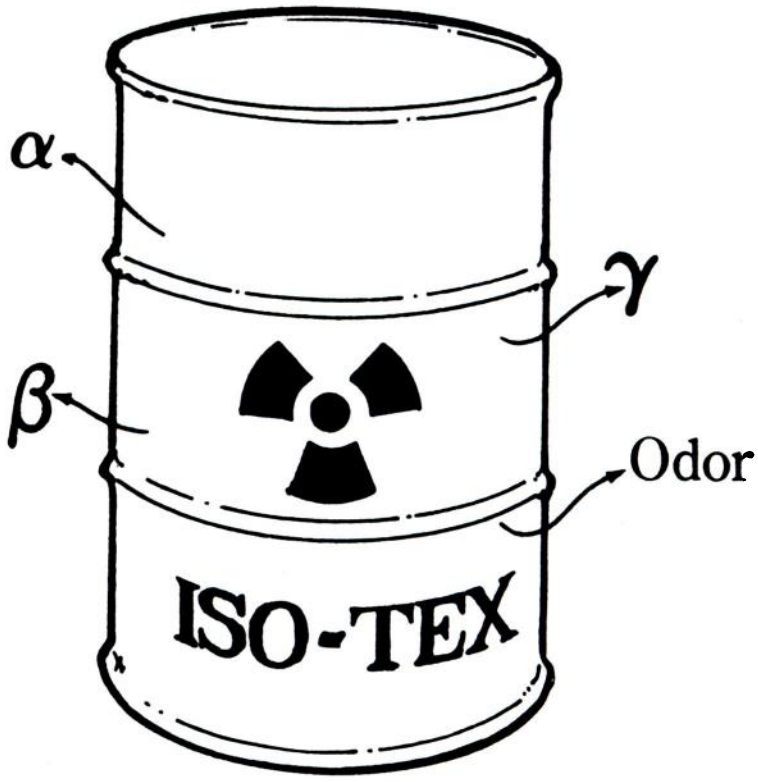
EMBRIA-CK — Scientifically Designed Test to Measure CK-MB Specifically without CK-MM and CK-BB Interference.

NEW

EMBRIA-CK™

International Immunoassay Laboratories, Inc.
3046 Scott Blvd., Santa Clara, CA 95050 (408) 727-1279

Radioactive Waste Disposal Service

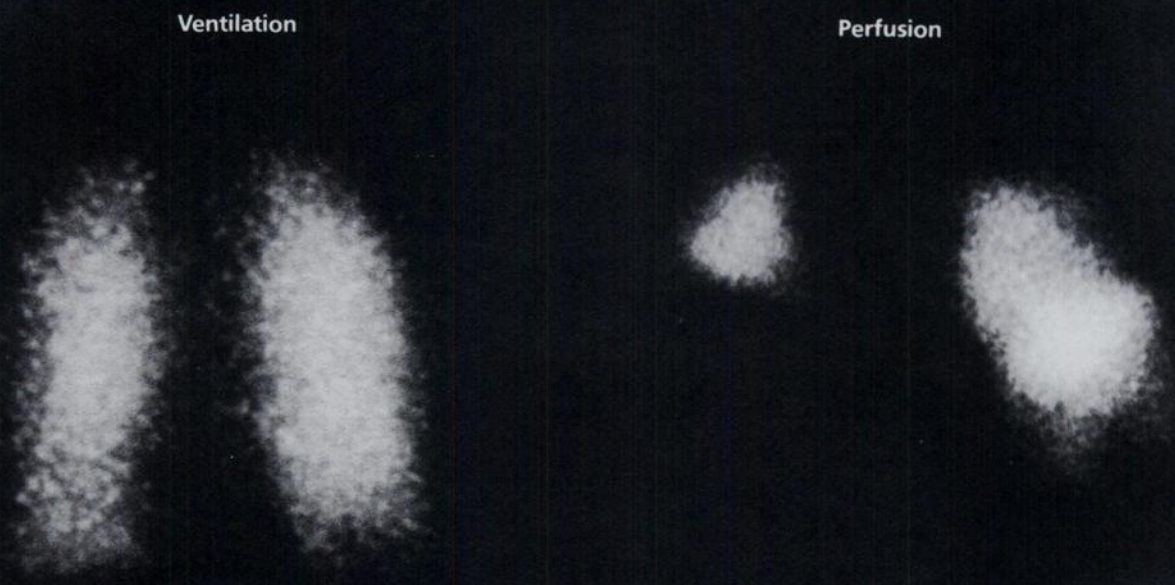


- Burial Indemity Insurance Provided
- Full Responsibility Accepted
- Agreement & NRC Licensed
- Approved Containers
- Efficient Service

ISO-TEX DIAGNOSTICS

P. O. Box 909 • FRIENDSWOOD, TEXAS 77546 713/482-1231

Lung



Diagnosis: normal ventilation, abnormal perfusion — pulmonary embolism

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

Xenon Xe 133 Gas
(CALIDOSE™) Dispensing System

PULMOLITE™
Technetium Tc 99m Aggregated Albumin Kit

NEN New England Nuclear®

Please see following page for brief prescribing information.

Xenon Xe 133 Gas

(CALIDOSE™) Dispensing System

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PULMOLITE™

Technetium Tc 99m Aggregated Albumin Kit

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Adequate reproduction studies have not been performed in animals to determine whether this drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. Technetium Tc 99m aggregated albumin should be used in pregnant women only when clearly needed.

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

Safety and effectiveness in children have not been established.

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

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

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

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

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

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

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

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

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

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

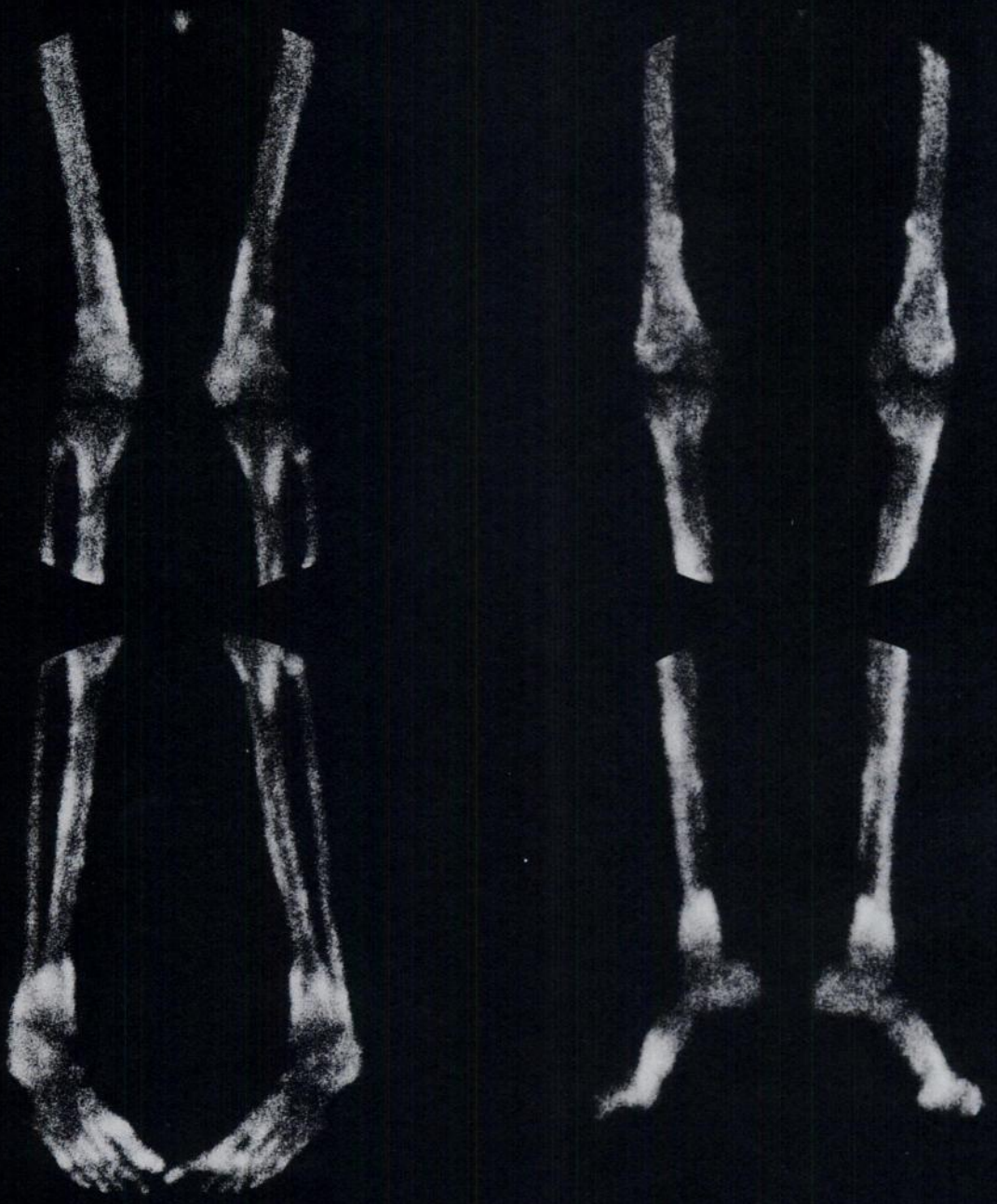
PULMOLITE contains no preservative; after reconstitution the shielded vial should be stored at 2° to 8°C.

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

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

Catalog Number NRP-415 **August 1976**

Bone



Diagnosis: hypertrophic pulmonary osteoarthropathy

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

OSTEOLITE™

Technetium Tc 99m Medronate Sodium Kit (MDP)

NEN New England Nuclear®

Please see following page for brief prescribing information.

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

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

CONTRAINDICATIONS: None known.

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

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

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

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

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

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

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

Adequate reproduction studies have not been performed in animals to determine whether this drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. Technetium Tc 99m medronate sodium should be used in pregnant women only when clearly needed.

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

Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: None reported.

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

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

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

The vial contains no bacteriostat.

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

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

Medronate Disodium – 10mg
Stannous Chloride Dihydrate – 0.85mg

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

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

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

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

GLUCOSCAN™
Technetium Tc 99m Gluceptate Sodium Kit

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

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

CONTRAINDICATIONS: None known.

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

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

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

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

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

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

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

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

Adequate reproduction studies have not been performed in animals to determine whether this drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. Technetium Tc 99m Gluceptate Sodium should be used in pregnant women only when clearly needed.

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

Safety and effectiveness in children have not been established.

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

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

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

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

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

The components of the New England Nuclear GLUCOSCAN Kit are supplied sterile and non-pyrogenic. Aseptic procedures normally employed in making additions and withdrawals from sterile, non-pyrogenic containers should be used during addition of pertechnetate solution and the withdrawal of doses for patient administration.

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

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

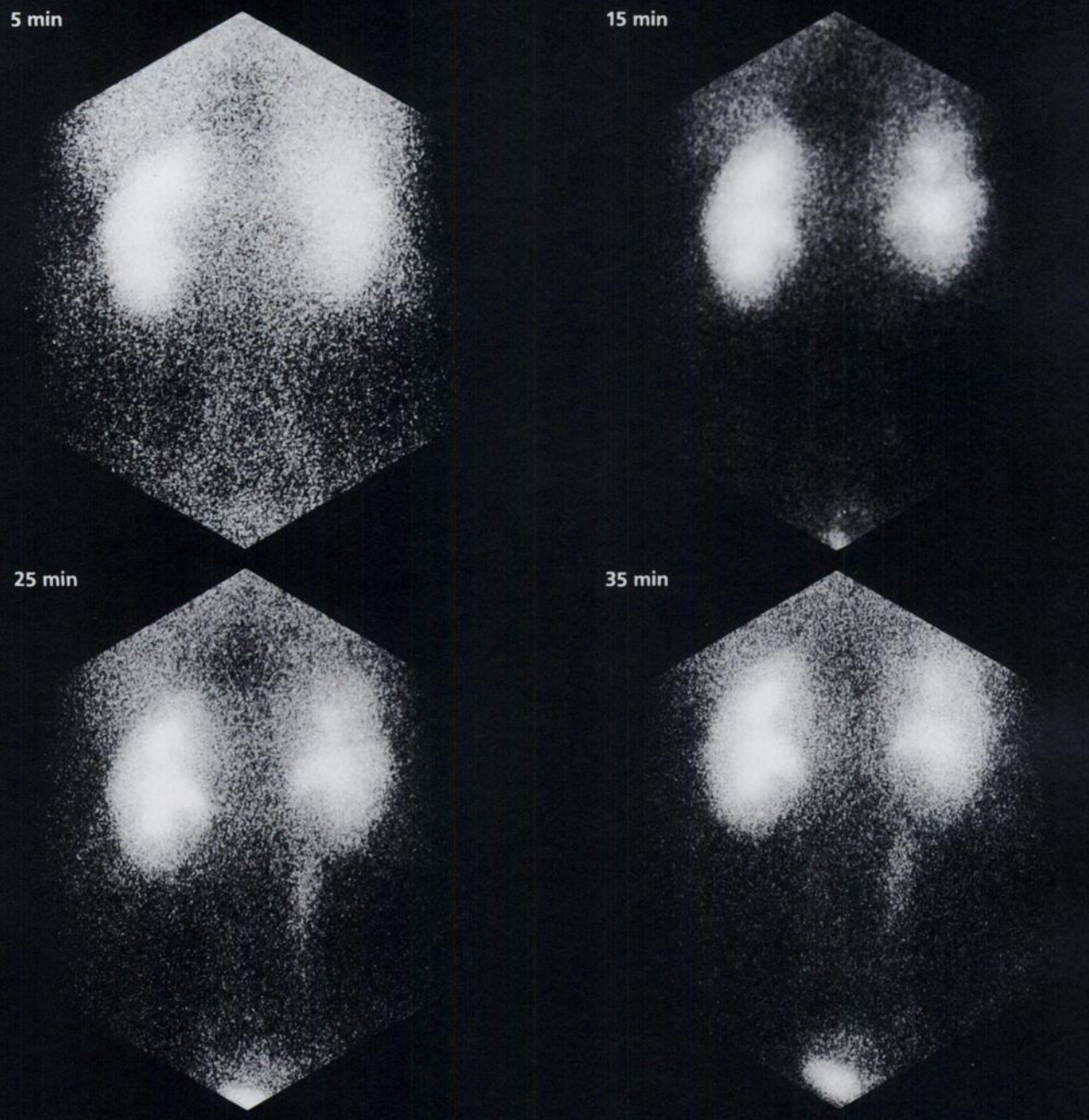
Prior to lyophilization the pH is adjusted with hydrochloric acid and/or sodium hydroxide solution. Store at room temperature (15°-30°C). Included in each five vial kit is one package insert and six radiation labels. Included in each thirty vial kit is one package insert and thirty-six radiation labels.

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

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

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

Kidney



Diagnosis: pyelonephritis of right upper pole

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

GLUCOSCAN™

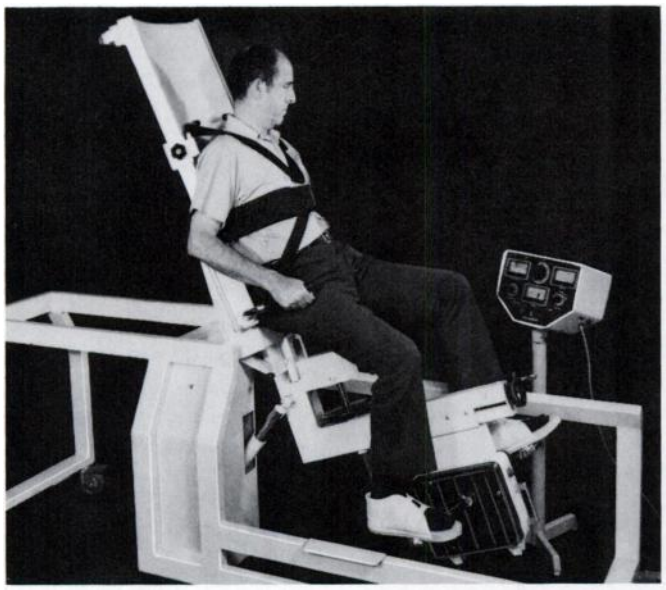
Technetium Tc 99m Gluceptate Sodium Kit

NEN New England Nuclear®

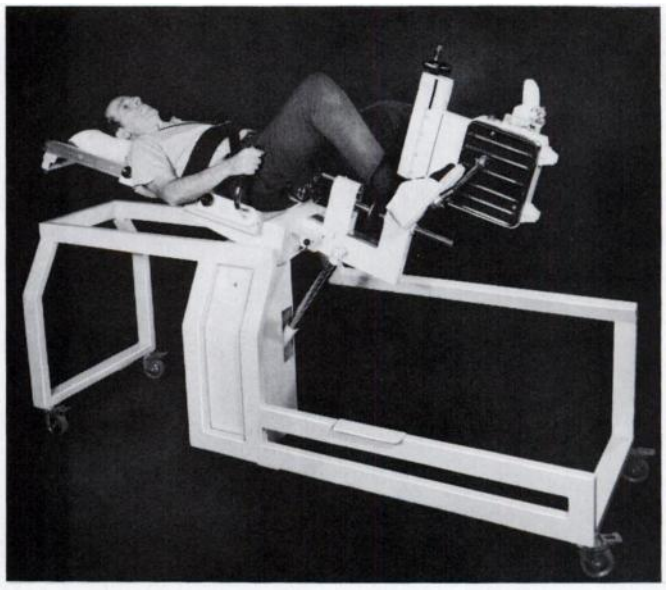
Please see preceeding page for brief prescribing information.

UPRIGHT? SUPINE?

Get BOTH...and all positions between



Erect stress test position.



Supine stress test position. Far side of table is unobstructed to easily accommodate a gamma camera.

With this
Nuclear Cardiology Stress System*

- **Motorized patient positioning.**
- **Compatible with all cameras.**
- **Motion-free for high resolution.**
- **Converts to standard imaging table.**

Here is the most versatile, easy-to-operate, stress imaging table available. It permits radionuclide imaging under stress in ANY position, from supine to upright. Just flip a switch, and the patient is moved effortlessly to the desired position. Unlike with other stress tables, you are not restricted to supine imaging.

Whatever your nuclear cardiology requirements, this unique system fills them quickly and easily...full gamma camera clearance, complete mobility, motion-free stability, positive (but comfortable) patient restraints, unobstructed access to the patient and controls, choice of Collins or Quinton ergometers, and much more. The unit can even be used for conventional imaging.

Send for full details.
Ask for Bulletin 2891-B

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

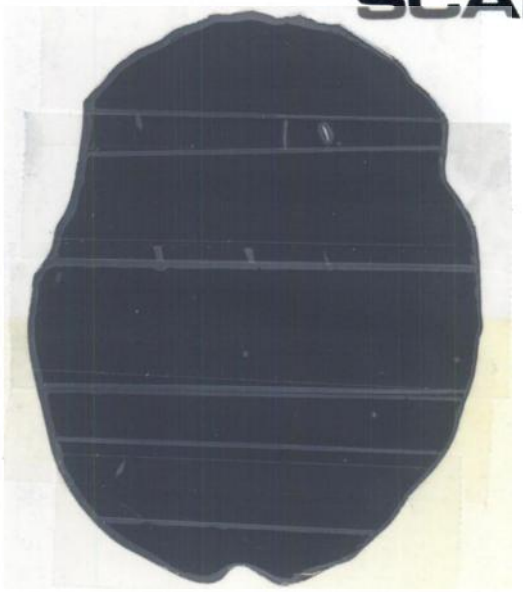
*Patent Pending

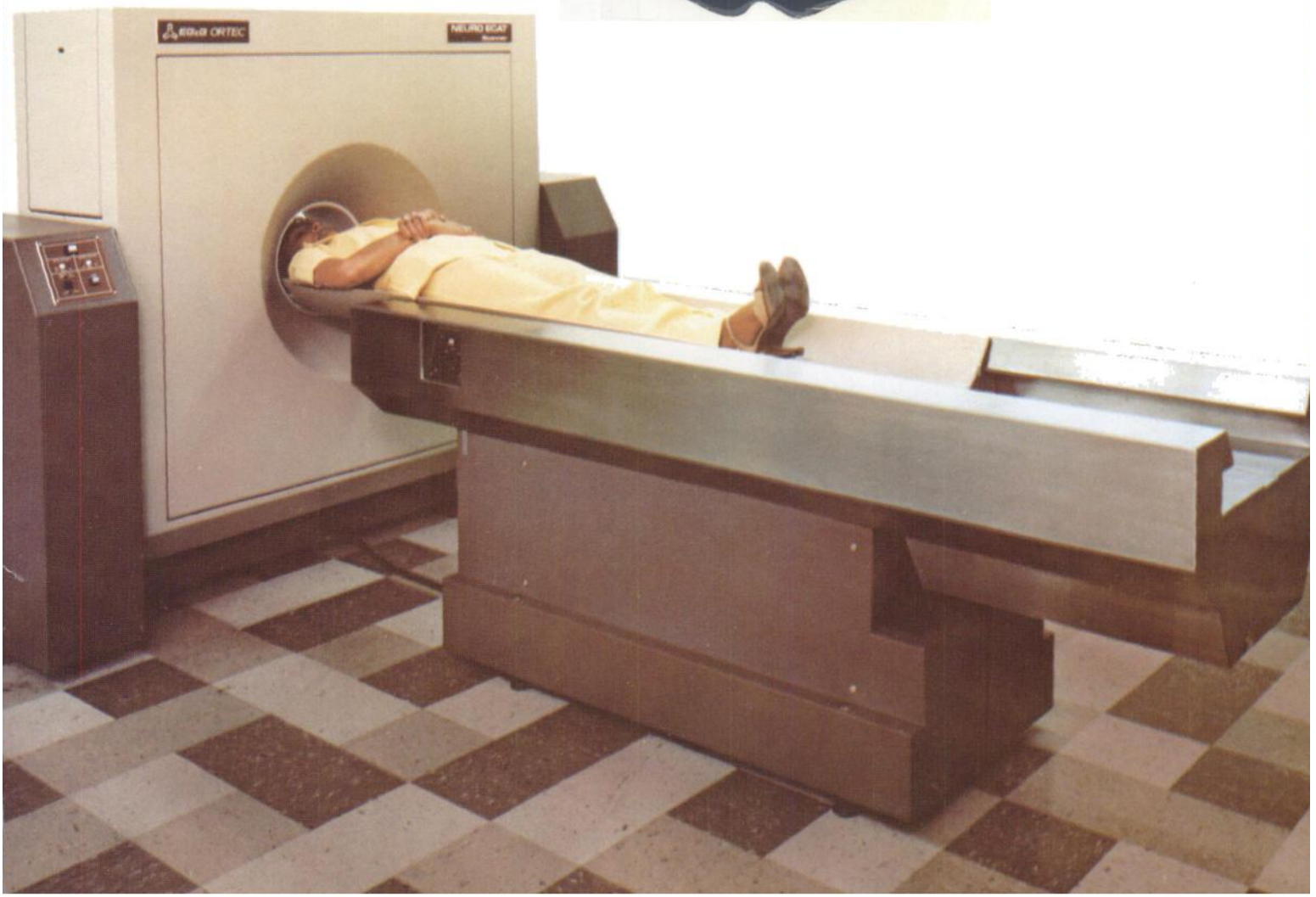
EG&G ORTEC

Neuro-ECAT™

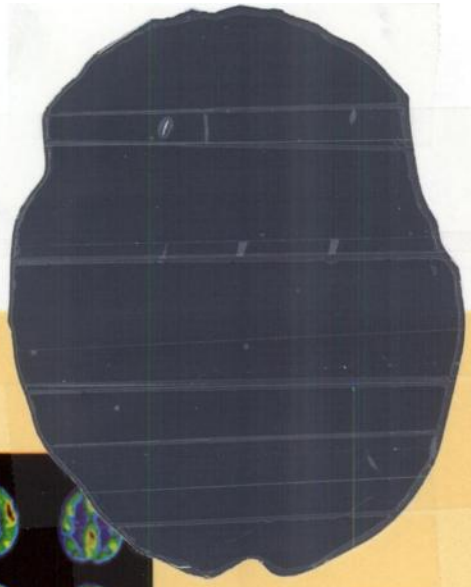
SCANNER

From the people who proved the promise of PCT.

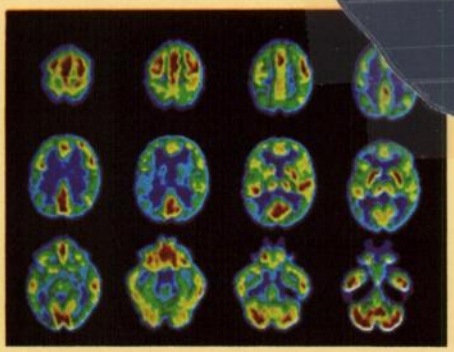




Neuro-ECAT™
SCANNER



No other scanner can see the brain's function as clearly or as accurately.



Neuro-ECAT Scanner image of normal cerebral glucose metabolism. Phelps, Hoffman, et. al., UCLA School of Medicine.

Setting today's standards with tomorrow's technology is expected from EG&G ORTEC. The first company to deliver PCT scanners . . . with over 3,500 examination studies and over 20 machine years of operational experience.

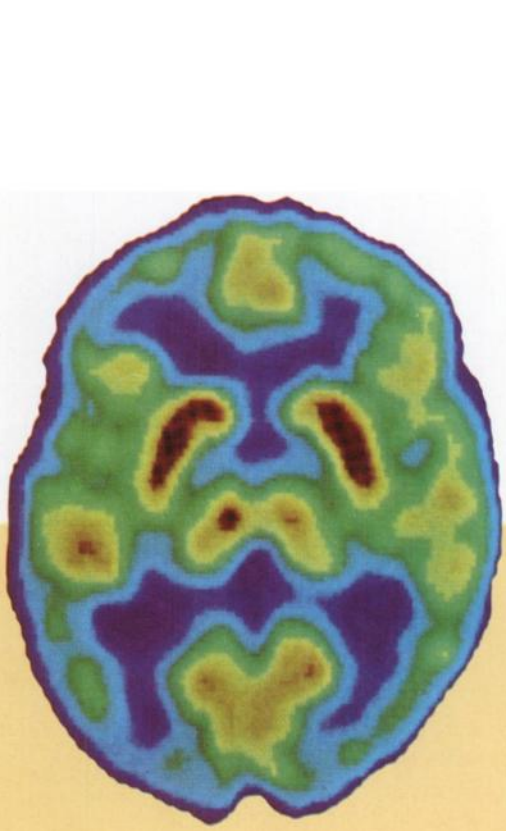
The Neuro-ECAT Positron Computerized Tomographic (PCT) Scanner delivers unparalleled quantitative interpretation accuracy. Exceptionally clear images of brain physiology are provided with the highest feasible signal-to-background (noise) ratio.

A true analytical instrument.

Both the hardware and software of the Neuro-ECAT Scanner have been proven to be comprehensive and reliable. And the system can easily be operated by a nuclear medicine technician, as are all of the ECAT II™ Scanners we have installed.

Features . . .

- Scanning unit with computer controlled patient couch. Scanning unit tilts ± 20° for optimum selection of tomographic plane. Computer control of the patient couch permits high resolution rectilinear scans which are useful for surveys of the brain and in whole-body studies of children and laboratory animals.
- Modular data acquisition system using standard NIM and CAMAC modules for maximum reliability and ease of service.
- Comprehensive data processing, display and storage system based around the DEC PDP-11 computer. Black and white displays with 64 levels of gray-scale are standard, with color displays available as an option.
- Operation through a simple question and answer format and control console push-buttons with image processing through joy-stick controlled gray-scale manipulation, histogram alignment and region-of-interest outlining.
- Special user-developed software functions for physiologic modeling. Developed on ECAT II and Neuro-ECAT Scanners, these special software packages are available at no additional cost and are regularly updated to keep customers abreast with the state of the art in PCT.



Images speak for themselves.

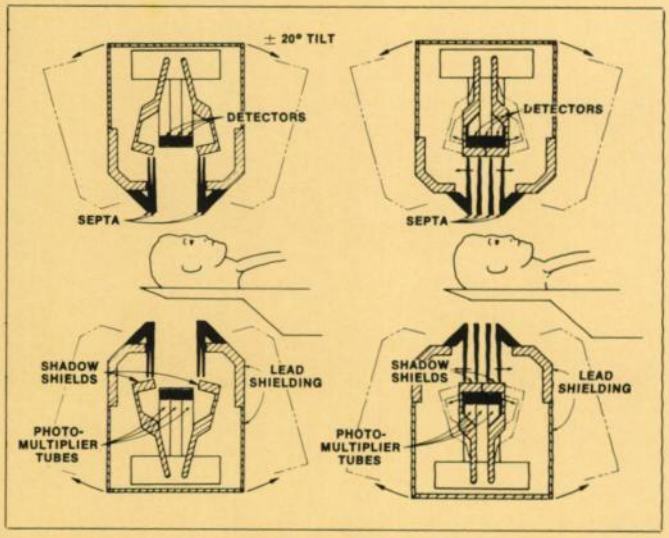
This image shows the regional rate of glucose utilization with the highest rate being the darkest area. Using the interactive display of the Neuro-ECAT Scanner, the local cerebral glucose metabolic rate (mg/100 gm/min) is displayed in real time.

Unique interplane septa dramatically reduce scatter.

The interplane septa of the Neuro-ECAT Scanner have a unique shape. The axial thickness is largest at the edge of the field-of-view and decreases with distance from the center. Improved shielding of the detectors from radiation originating outside the tomographic plane is provided. Efficiency within the plane is maintained.

Pioneers in in-vivo measurements of physiologic functions.

The above color image is only one of the many applications for positron tomography being developed for EG&G ORTEC ECAT II and Neuro-ECAT Scanners. With installations around the world (some of which are shown on the back of this page) EG&G ORTEC is clearly the leader in PCT scanning.

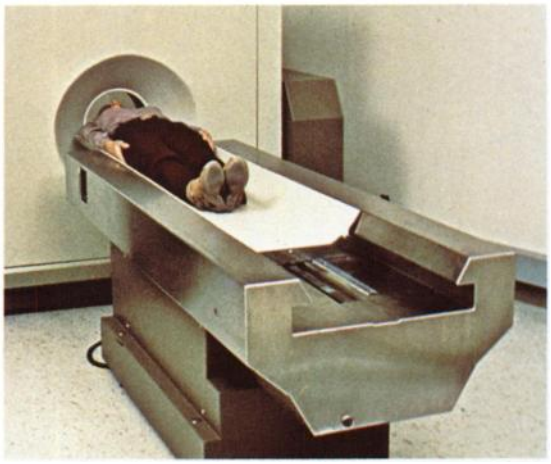


For more information on our Neuro-ECAT Scanner and ECAT II whole-body Scanner and how they benefit your medical research, write:

EG&G ORTEC

100 Midland Road, Oak Ridge, TN 37830 or use our Hot Line: 800/251-9750.

Neuro-ECAT and ECAT II Scanner installations around the world.

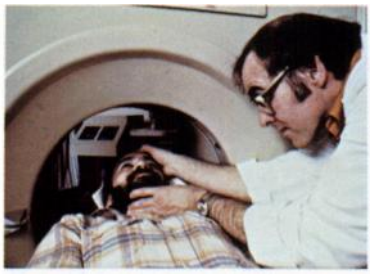


University of California at Los Angeles, California — Neuro-ECAT Scanner

Oak Ridge Associated Universities, Oak Ridge, Tennessee — ECAT II Scanner

Service Hospitalier Frederic Joliot, Orsay, France — ECAT II Scanner

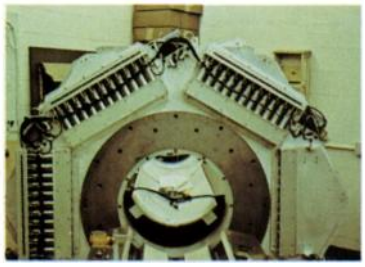
University of Liege, Liege, Belgium — ECAT II Scanner



Wm. S. Middleton Memorial Veterans Medical Center, Madison, Wisconsin — ECAT II Scanner

KFA-Juelich, West Germany — ECAT II Scanner

National Institutes of Health, Bethesda, Maryland — ECAT II Scanner

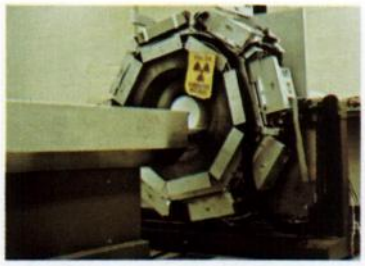


Tohoku University, Sendai, Japan — ECAT II Scanner

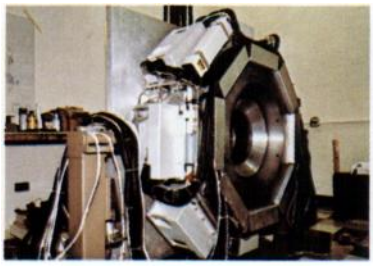
University of California at Los Angeles, California — ECAT II Scanner

MRC Cyclotron Unit, Hammersmith Hospital, London, England — ECAT II Scanner

State University, Gent, Belgium — ECAT II Scanner



University of Liege, Liege, Belgium — Neuro-ECAT Scanner



State University, Gent, Belgium — Neuro-ECAT Scanner

EG&G ORTEC

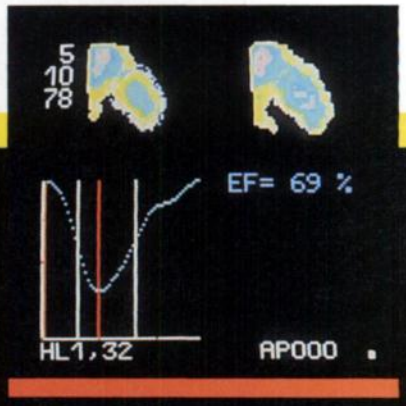
76 Offices in 49 Countries. For more information on our products or their applications, contact your local EG&G ORTEC representative: **United States:** EG&G ORTEC, 100 Midland Road, Oak Ridge, TN 37830 U.S.A., Telephone (615)482-4411, Telex 55-7450; **Canada:** EG&G Instruments, EG&G CANADA LTD., 436 Limestone Crescent, Downsview (Toronto) Ontario M3J 2S4, Telephone (416)663-6230, Telex 06-22694; **Brazil:** EG&G Instrumentos Ltda., Rua Loefgren 929 04040 Sao Paulo SP, Telephone 549-8346, Telex (391)011 34328; **W. Germany:** EG&G Instruments GmbH, Hohenlidener Str. 12, D-8000 Munich 80, Telephone 089-918061, Telex 528257; **France:** EG&G Instruments S.A.R.L., Silic 428, 4, Place De La Balance, 94583 Rungis, Cedex, Telephone 687-25-71, Telex 202653; **United Kingdom:** EG&G Instruments, Ltd., Doncastle House, Doncastle Road, Bracknell, Berks., RG 12 4PG, Telephone 344-55455, Telex (851) 847164; **Italy:** EG&G Instruments S.p.A., Via Monte Suello 9, 20133 Milan, Telephone 738-6294, Telex 320377; **The Netherlands:** EG&G Instruments B.V., P. O. Box 86, Herenstraat 23/24, Nieuwegein (Jutphaas) Telephone 3402-35112, Telex 40830; **Japan:** Daini Seikosha Co., Ltd., Scientific Instruments Division, 31-1, Kameido 6 Chome, Koto-Ku, Tokyo 136, Telephone 682-1111, Telex 02622410.

Printed in U.S.A.

KANDI DS. Soft·a·ware·ness

For years people have been aware of us as a leader in hardware.

The same awareness of reliability, quality, and sophisticated simplicity is available in our software, too, with simplified user oriented programs and predefined studies in plain English.



We make software as though nuclear medicine depended on it. Because in some diagnoses it does.

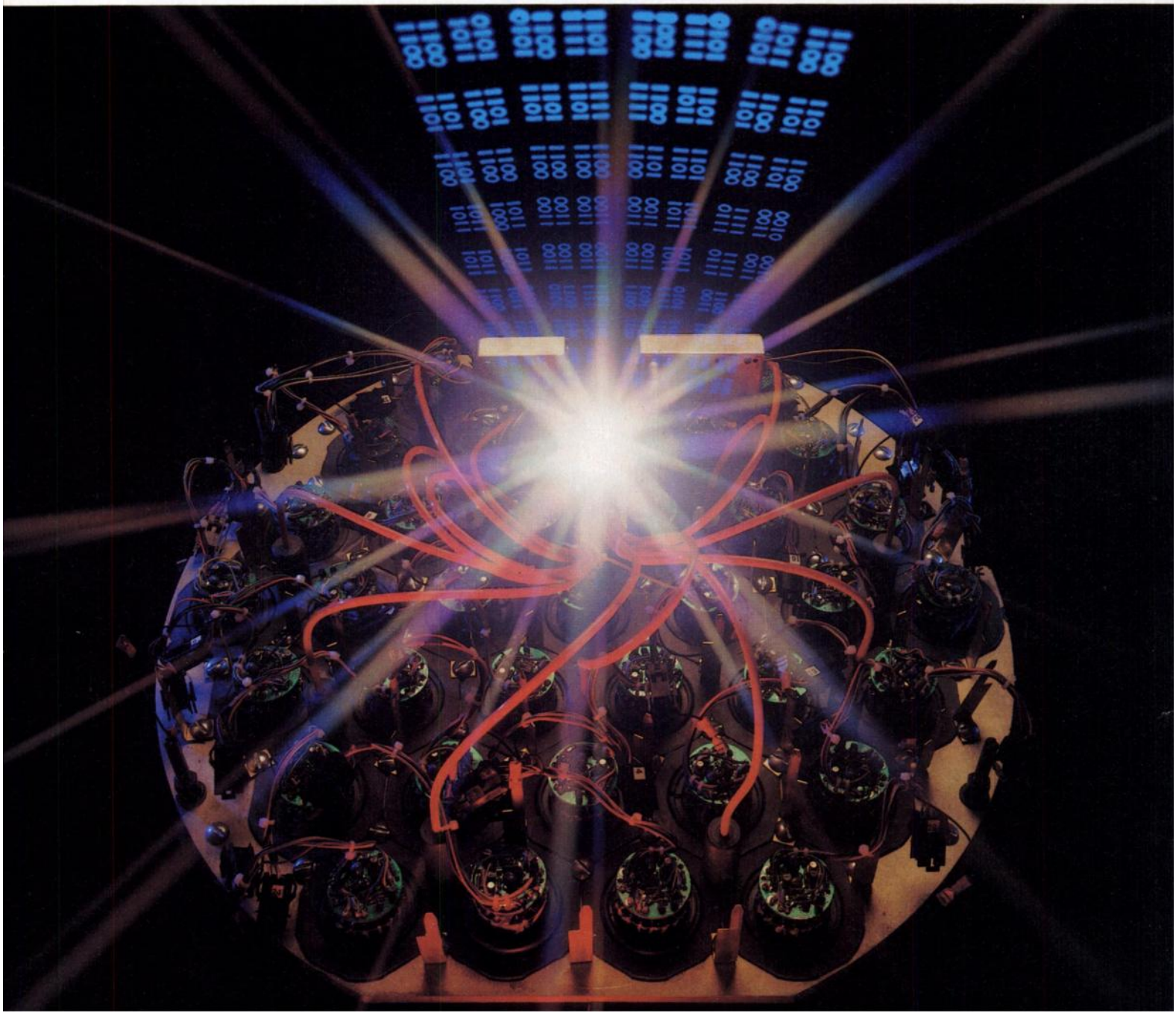
KAE SYSTEMS DIVISION
KRUPP INTERNATIONAL, INC.

241 Erie St., Jersey City, NJ 07302
In New Jersey call (201) 795-1908
Other states call 1-800-526-6053

automatic drift correction in nuclear imaging

digital guard

another unique feature of Elscint's Apex Line



In most gamma cameras, detector drift poses a severe maintenance problem. This weakness — inherent in all analog cameras — necessitates periodic servicing, sometimes as often as every week. An accurate detector-circuit "tune-up" normally requires a trained technician, specialized test equipment, and a lot of time.

Elscint Inc.
930 Commonwealth Avenue,
Brookline, Mass. 02215, U.S.A.
Call Toll Free: 800-343-9504.

Digital Guard Solves the Problem

Every Apex Digital Gamma Camera has built-in Digital Guard circuitry — another unique feature of Elscint's Apex Line. Digital Guard makes use of an integrated digital device to check detector head alignment many times each day, automatically sensing and precisely correcting circuit imbalance. Digital Guard also monitors and diagnoses hardware faults, pinpointing the exact location of any failed circuit board and enabling instant replacement.

Digital Guard Assures Image Quality

An integrated Elscint Quality Assurance Package is an essential part of Digital Guard. This, together with Digital Guard's frequent automatic detector head alignment, results in maximum acuity — enabling Apex systems to maintain consistently superior uniformity, linearity and resolution.

Picker's new ECT stand

THE NEW DYNA™ CAMERA SERIES 5 PUTS EVERYTHING AT YOUR FINGERTIPS. INCLUDING TOMORROW.

Meet the new Dyna Camera from Picker . . . our new series of nuclear cameras that remain up-to-date because of their upgradable, digital and modular design . . . allowing future expansion into tomorrow's technology.

Just as you can add a total ECT package to the Dyna Camera Series 5, you can add future innovations as they come on stream. Because upgradability is a programmed design concept, your Dyna Camera never becomes obsolete . . . always remains cost-effective . . . provides total clinical capability . . . both today and tomorrow.

All this and a host of other pluses:

- The highest resolution scintillation camera on the market
- Wide choice of special-purpose detectors and stands
- Choice of programmable computer systems
- Advanced microprocessor-controlled digital electronics for increased accuracy and reliability
- Choice of model configurations to meet your particular laboratory space requirements

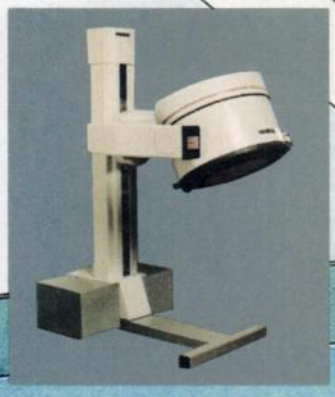
And because its from Picker, you have a single source of supply for camera, computer and other components . . . as well as single-source service.

Dyna Camera Series 5 . . . upgradable . . . cost-effective . . . modular . . . modern. Expanding today's diagnostic capabilities while providing total futurability.

For more details, ask your Picker representative, or write: Picker International, 12 Clintonville Road, Northford, Connecticut 06472

PICKER INTERNATIONAL®
We're Instrumental

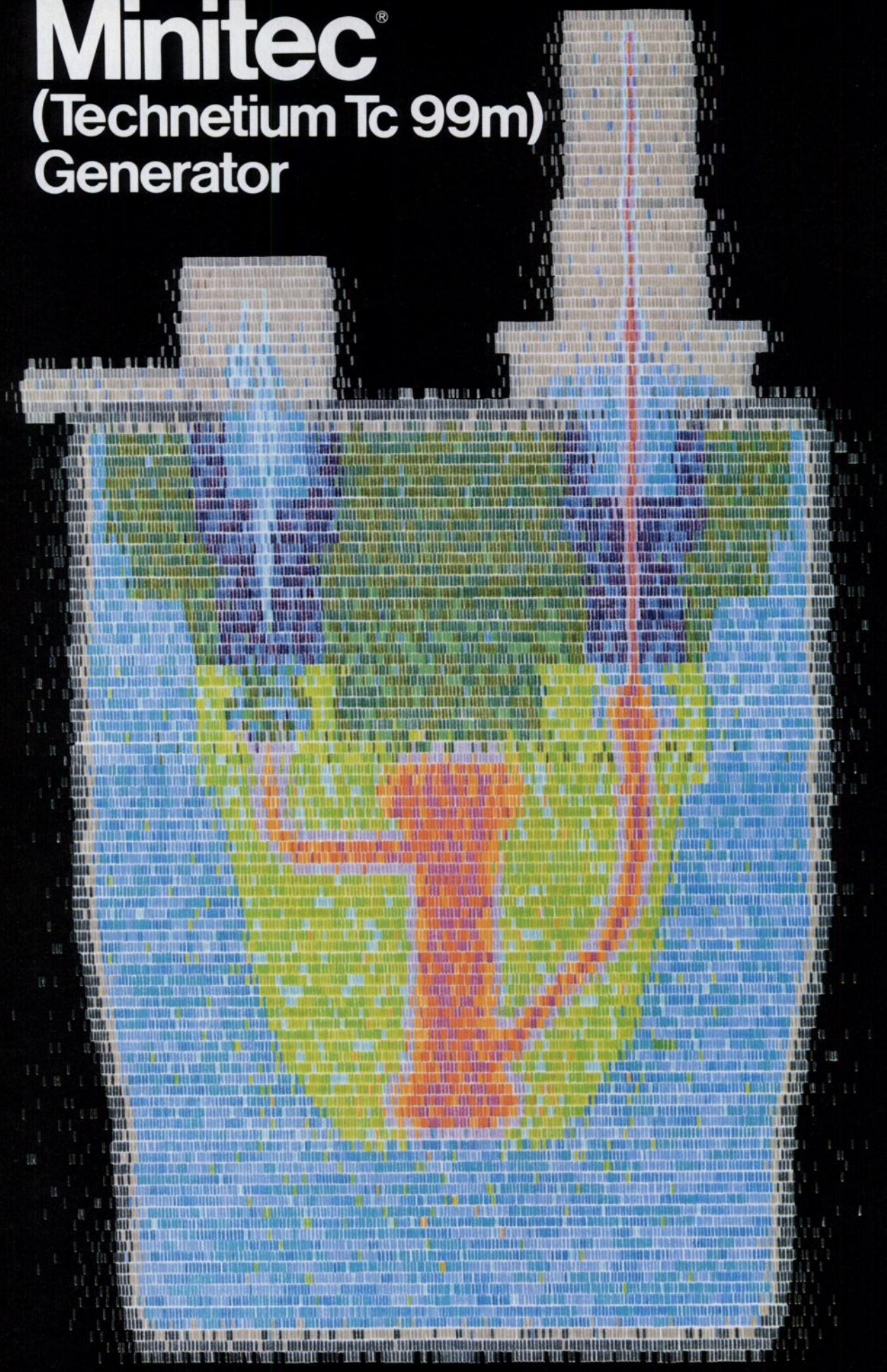
DC 5/10C - new, special purpose detector/stand



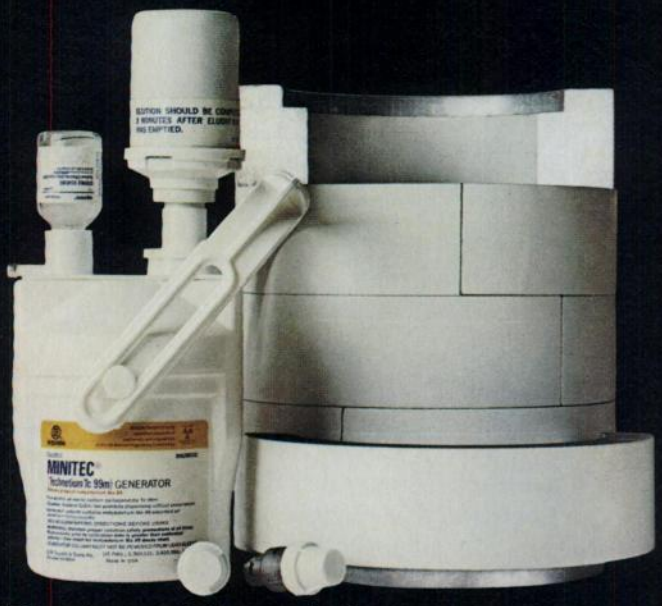
Basic detector/stand

Several of the detector/stand combinations made possible with the Dyna Camera Series 5

Minitec®
(Technetium Tc 99m) Generator



Hot where it matters
Cold where it counts



Designed for minimum exposure

—Unique construction (no exposed tubing) and thick shielding (1⅝" lead) provide high shielding-to-activity ratio.
—Another 1½" of lead shielding provided by Maxi-Shield™.
—Built-in handle reduces hand exposure during carrying.
—A comparison study of radiation exposure from the three leading generator systems is available from your Squibb Representative.

Convenient

—Available in potencies of 220, 440, 880, 1330, 1770 and 2220 mCi.
—Tuesday-calibrated generators delivered Wednesday a.m.
—Saturday-calibrated generators delivered Monday a.m.

Easy to operate

—After a few simple preparations, Minitec elutes automatically and quickly. Subsequent elutions are even simpler.
—Small-volume, high-concentration eluates give maximum flexibility for varying applications.

On-time delivery

—Express ground transportation and special air system assure on-time deliveries.

Dependable service

—Specially trained Technical Associates and Squibb Technical Customer Service provide prompt personal attention when needed.

See next page for brief summary.

Minitec®
(Technetium Tc 99m) Generator

Medotopes®

SQUIBB®

Minitec®
(Technetium Tc 99m) Generator

Hot where it matters
Cold where it counts

MINITEC®
Technetium Tc 99m
GENERATOR

DESCRIPTION: Minitec (Technetium Tc 99m) Generator consists of a specially designed lead-shielded alumina column containing adsorbed fission-produced Mo 99. Tc 99m, the short-lived daughter of Mo 99, is obtained as sterile sodium pertechnetate Tc 99m by periodic elutions of the generator with an isotonic saline solution.

INDICATIONS AND USAGE: Sodium pertechnetate Tc 99m is indicated in ADULTS as an agent for brain imaging including cerebral radionuclide angiography, thyroid imaging, salivary gland imaging, placenta localization, and blood pool imaging including radionuclide angiography. (For use of sodium pertechnetate Tc 99m as a diagnostic radiopharmaceutical in CHILDREN, consult package insert.)

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 sodium pertechnetate Tc 99m 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.

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

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 sodium pertechnetate Tc 99m have been reported.

For full prescribing information, consult package insert.

HOW SUPPLIED: Minitec (Technetium Tc 99m) Generator is available in potencies of 220, 440, 880, 1330, 1770, or 2220 millicuries Mo 99 at calibration time. The generator is supplied with vials of sterile, nonpyrogenic eluent; a sterile needle adapter assembly and evacuated sterile collecting vials. Other accessories including lead shields, reference standard solutions, and a whole vial assay kit are available on request for use with the Minitec (Technetium Tc 99m) Generator.

SQUIBB®

Protection, Visibility and Convenience... Hi-D lead glass syringe and vial shields.

The Nuclear Regulatory Commission now requires their Medical Licensees to use protective syringe and vial shields.

Nuclear Pacific products give you more than safe protection; they give you 360 degrees of visibility. The optical clarity and lead content of Hi-D* glass is unsurpassed in the industry. The importance of shielding has recently been re-emphasized by NRC studies that find failure to use protective shields can result in radiation dose rates to fingers and hands of 100 mrads to one rad per minute, or a projected lifetime dose of 4,000 to 100,000 rads.

Visibility allows efficient handling of radiopharmaceuticals, reducing exposure time. For 99mTc exposure, radiation protection from 10 to 40 HVL is offered in eight different models of the vial shield. Shields are available for all leading generator brands. Each shield loads with a twist and centers the vial for easy needle access to the rubber septum. Removable twist lock caps enable ease of cleaning and needle insertion.

Remember, for 30 years Nuclear Pacific, Inc., has set the standard for visibility and protection in the radiation shielding industry.

Nuclear Pacific, Inc.

6701 Sixth Ave. S.
Seattle, WA 98108 (206) 763-2170 Telex: 32-8891

*Registered U.S. Patent Office. Platinum melted ultra high density optical glass.

SIEMENS

PHO-GAMMA cameras and SCINTIVIEW for consistent clinical imaging

Developed in conjunction with clinical cardiologists, Siemens comprehensive selection of cardiac performance programs provide the user with unprecedented reproducibility and clinical confidence in a wide variety of imaging procedures and quantitative analysis.

The unique combination of high quality imaging and advanced clinically relevant software provides pertinent and useful information for volumetric analysis and physiologic information in myocardial perfusion and patency.

Furthermore, since nuclear cardiology techniques are non-invasive, you can offer this important diagnostic modality in situations and environments previcusly unattainable.

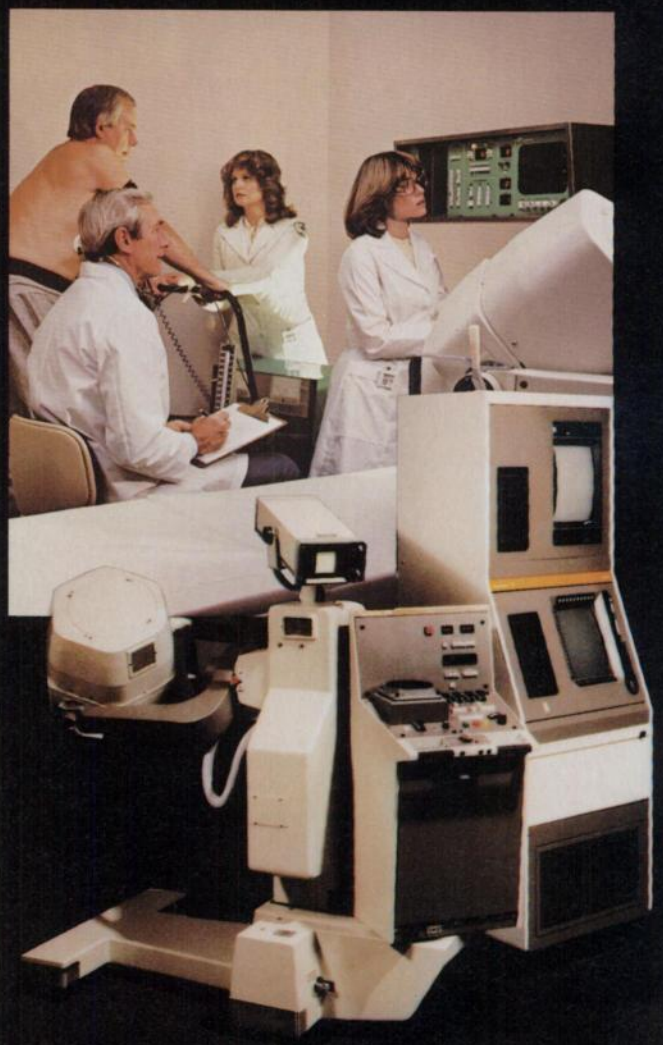
Current clinical cardiac procedures which you can offer include:

- **Phase and amplitude analysis of ventricular function**
- **Extended cardiac acquisition for wall motion and left ventricular ejection fraction**
- **Automatic wall detection to define left ventricle and calculating the ejection fraction**
- **Cardiac shunt detection and quantitation of QP:QS ratio**
- **First transit cardiac studies**

All programs offer computerized nuclear imaging with a high degree of flexibility to satisfy your individual data acquisition, processing and presentation requirements.

Additional clinical programs already in development will offer an even greater range of diagnostic possibilities.

Contact your Siemens representative to see how easy it is to provide these important nuclear cardiology procedures to your referral physicians.



Siemens Corporation
Medical Systems Group
186 Wood Avenue South
Iselin, New Jersey 08830
(201) 494-1000

Siemens... an investment in proven nuclear cardiology

MG 5310-003-121

The difference between ordinary dynamic studies and those made with TOSHIBA's Gammacamera GCA-40A is the difference between guessing and diagnosing with complete assurance. This new model's high count-rate (200 kcp's), excellent resolution, and large field of view (with a window width of 40%) provide the finest quality nuclear image available today.

The GCA-40A also has three special functions which make a positive difference in operation. The Dual Peak function means that the measurement times of multi-peak nuclides are shortened, and confirmed uniformity at each peak promotes the production of high quality images. The Marking function allows any region of interest to be marked on the film and its dimensions may be measured with the scale mark. And the Zooming function allows magnified display of limited regions such as the heart, small sections of internal organs, or the viscera of children.

Simplicity in use also makes a difference, so TOSHIBA's made the GCA-40A easy to position. Changing the lightweight collimators is also easy and quick, and adjusting photomultipliers is no problem at all.

All gammacameras may look alike, but Toshiba's image makes the difference.

So if you think that there is no difference between gammacameras, check out TOSHIBA's GCA-40A and discover the critical difference, the superb image quality and resolution you expect from TOSHIBA, the pioneer in the field of nuclear medicine.

For more information on the GCA-40A or for information on any of TOSHIBA's FAMILY OF IMAGING PRODUCTS, call TOLL FREE (800) 421-1968; in California, (213) 638-5153.

Quality imaging from

TOSHIBA
MEDICAL SYSTEMS
Division of Toshiba America, Inc.
1154 Dominguez St., Carson, CA 90745
(213) 638-5153

TOSHIBA MEDICAL SYSTEMS—EUROPE
Fruitweg 5-9
2525 KE Den Haag, Holland

SIEMENS

ZLC eliminates spatial distortion for superior clinical images

Spatial distortions, normally inherent to detectors, are now removed "on-line" to provide the highest quality diagnostic information and images. No longer is addition or subtraction of counts, or any form of cosmetic manipulation necessary. ZLC has achieved this significant technological milestone in nuclear imaging.

ZLC features advanced electronic correction circuits for the three fundamental camera signals: "X" and "Y", which represent the position of the scintillation event, and "Z" which represents the energy of the scintillation event. These circuits adjust the three signals for systematic errors in real time. Valid signals are never eliminated, nor are invalid signals inserted. ZLC preserves the integrity of the clinical information.

The ZLC circuits are permanently calibrated and optimized to function over the full range of count rate and energy levels . . . over the entire field-of-view. And most important, to assure you the highest degree of detector accuracy attainable.

Seeing is believing, call your Siemens representative for proof of ZLC's performance.

Siemens Corporation
Medical Systems Group
186 Wood Avenue South
Iselin, New Jersey 08830
(201) 494-1000

Siemens . . .
an investment in diagnostic confidence

MG 5310-005-121

Announcing

Techneplex®

(Technetium Tc 99m Pentetate Kit) from Squibb

For kidney imaging, brain imaging, to assess renal perfusion, and to estimate glomerular filtration rate

Does not accumulate in choroid plexus
Rapid clearance rate of DTPA allows:

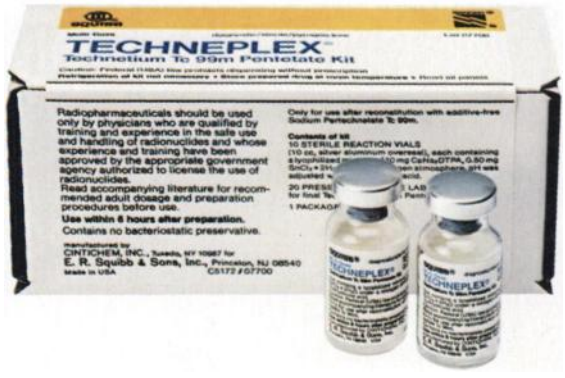
- brain imaging in less time than with sodium pertechnetate Tc 99m
- delayed brain imaging in 30-40 minutes, as compared with 3-4 hours with technetium Tc 99m pertechnetate

Easy two-step procedure

Kit contains 10 multidose reaction vials.

For further information, call Technical Customer Service, 609-921-4100.

See next page for brief summary.



Medotopes®
SQUIBB®

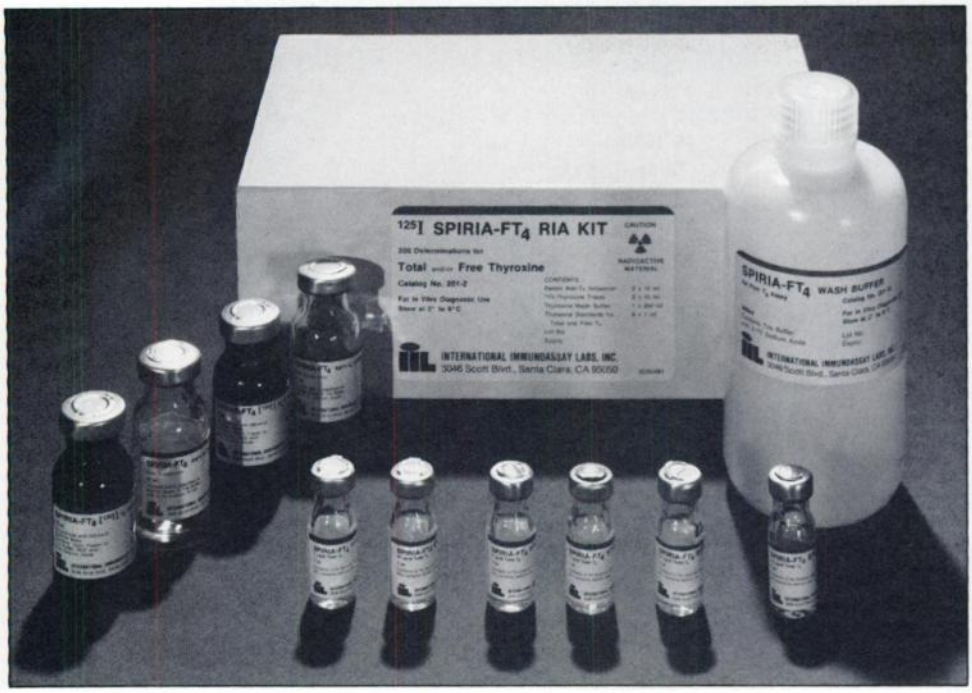
PRESENTING THE DOSE CALIBRATOR WITH A GREAT FUTURE.

Now there's another innovation in our CRC-30 radioisotope calibrator. Capintec's FUTURE-DOSE adds a new dimension to calibration technology. It lets you supply precalibrated doses for specific injection times. Lets you plan injection schedules a week in advance or calculate dose requirements for seven radioisotopes scheduled up to six months in advance. Naturally, a printed record is made available for all these calculations. With the addition of this new Capintec technology, you have a complete picture of every phase of dose calibration. ☐ What's more, with a CRC-30 calibrator or a CRC-U upgrade you can enjoy the most advanced automated assay capabilities — dose computation, isotope inventory control, radiochemical purity analysis. You'll have complete permanent printed records including ^{99}MO assay records and injection site records. ☐ In addition, you'll be able to meet NRC or state requirements for accountability. Important in keeping your department operating as controls get tighter. ☐ Why wait? Now's the time to replace your department's radioisotope dose calibration system (or upgrade your Capintec system) with the best selling, most respected, most capable equipment, from Capintec.

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

CAPINTEC
THE MEASURE OF EXCELLENCE

Test for Free and Total Thyroxine



NEW

SPIRIA FT4™

Offer It As a Test of Choice When

Total T_4 Test is Requested

SPIRIA-FT$_4$ provides more accurate clinical information for seemingly healthy patients being screened to rule out thyroid disorder.

Free Thyroxine Index is Requested

SPIRIA-FT$_4$ provides direct measurement of free thyroxine. This information is adequate when the physician suspects thyroid disorder and plans to do additional confirmatory tests. Only one test will provide the same information normally given by two tests.

Total T_4, T_3 Uptake and FTI are Requested

Simultaneous measurement of total T_4 and free T_4 provides clinical information on both free thyroxine level and TBG abnormalties. T_3 uptake test have limitations which arise out of methodology used and changes in binding capacity of TBG resulting from non-thyroid illness. T_3 uptake test is a weak link in thyroid function testing.

Use SPIRIA-FT$_4$ to

Provide improved clinical picture.
Increase throughput and productivity.
Reduce cost.

International Immunoassay Laboratories, Inc.
3046 Scott Blvd., Santa Clara, CA 95050 (408) 727-1279

POSITRON COMPUTED TOMOGRAPHY

A New Level of Diagnostic Capability

The Cyclotron Corporation's PCT 4600

A MAJOR ADVANCE IN PCT INSTRUMENTATION

With the advent of The Cyclotron Corporation's Multi-slice Positron Computed Tomograph (PCT 4600), a new level of diagnostic research capability is now possible. The PCT 4600 system provides high speed, high resolution quantitative images of positron emitting isotopes in the human brain.

QUANTITATIVE ACTIVITY LOCALIZATION

Conventional imaging techniques provide somewhat distorted views of radioactive isotopes because of variations in response and the compression of three dimensions into two. The PCT 4600 system delivers precise quantitative images of excellent quality in transverse sections. Additionally, the positron emitting isotopes used with the PCT 4600 enable the use of more straightforward techniques to evaluate physiological processes.

A POWERFUL RESEARCH TOOL YOU CAN USE TODAY

PCT 4600 systems are currently being built for a number of leading research institutions. Although the specific programs of research to be carried out at these institutions vary in focus, the PCT 4600 system may be used to quantitate the concentration of any suitably labeled compound in an area of study. This research capability may be extremely valuable in the measurement of flow, metabolism, and other biological processes in tissue. Research studies using The Cyclotron Corporation's PCT 4600 should help define the therapeutic efficacy of anticonvulsants in the brain.

NEW RESEARCH POSSIBLE

For the first time it may be possible to map in human subjects the response of specific brain receptors and transmitters to drugs with specified binding characteristics. This type of research may clarify the action of psychotropic agents on conditions such as schizophrenia and Parkinson's Disease. Studies of the permeability of tissues and research into the physiology of psychoses may now be possible. The PCT 4600 system provides the research tool necessary to view pathological conditions that have been difficult or impossible to obtain through other means. It moves diagnostic research to a new level of capability.

SPECIAL CONFIGURATIONS TO MEET YOUR RESEARCH NEEDS

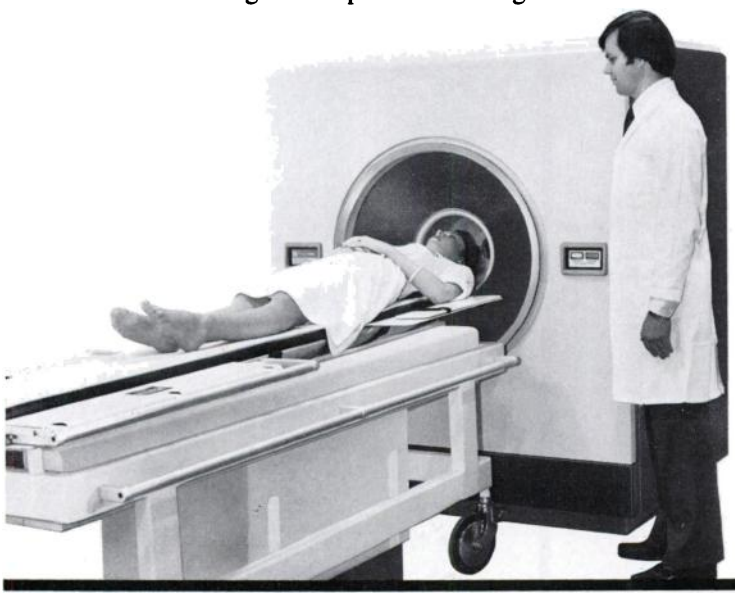
The PCT 4600 system is one of a family of high performance, research grade instruments designed for maximum effective countrate, optimum sensitivity, and rejection of unwanted background due to scatter and random events.

The signal processing data acquisition systems comprise a parallel ensemble of individual channels maintaining negligible deadtime, even at the highest countrate. A powerful computing system provides rapid image reconstruction plus the capability for efficient parametric analysis of time sequential studies.

The modular design approach employed in this family of tomograph systems allows The Cyclotron Corporation to configure systems to meet many different research applications by optimizing the tradeoffs between sensitivity, resolution and countrate.

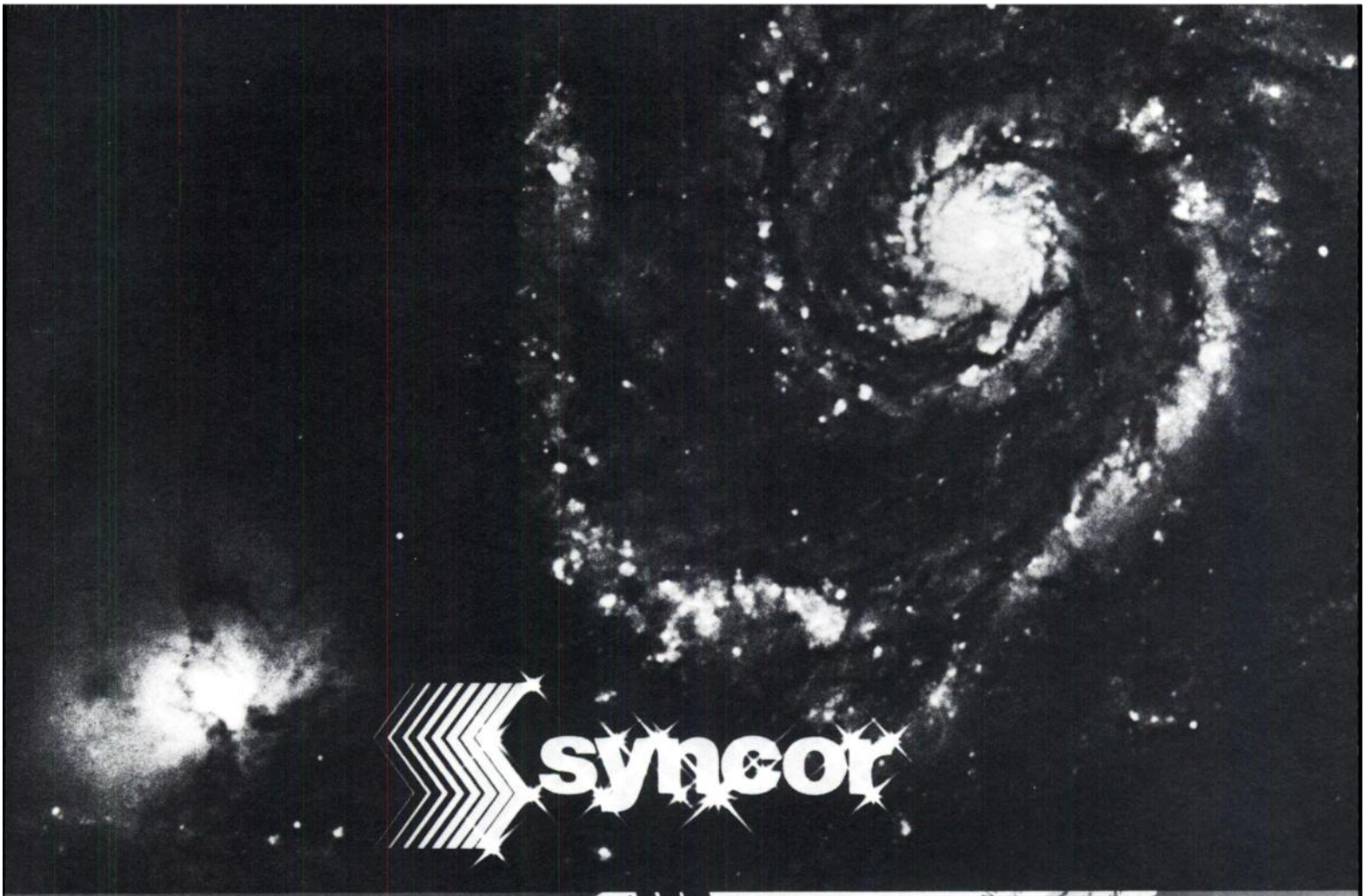
A RESPECTED LEADER IN NUCLEAR MEDICINE

The same technical expertise and commitment to developing state-of-the-art equipment that gained The Cyclotron Corporation its leading position in the manufacturing of cylotrons and neutron therapy systems can be found in the design of the PCT 4600. It is a valuable and powerful diagnostic research tool of unparalleled capability. In addition to the PCT 4600, the Cyclotron Corporation also manufactures a family of whole body, multi-slice PCT systems. Also available is a complete line of compact medical cyclotrons and accessories, including state-of-the-art targetry and processing systems for the production of the short-lived positron emitting isotopes used in positron imaging. We invite the opportunity to discuss your research interests and to configure a complete system to meet those specific requirements.



THE
CYCLOTRON
CORPORATION

950 Gilman Street, Berkeley, CA 94710
(415) 524-8670 Telex 910-366-7116



AN-MDP® Technetium Tc 99m Medronate Kit

"Is there anyone out there?"

The Arecibo Observatory in Puerto Rico houses the world's largest radio telescope dish. One thousand feet across, this ultrasophisticated instrument will soon be used by NASA to scan the heavens for faint radio waves which could indicate intelligent life in distant galaxies.

When it comes to diagnostic bone imaging, however, it takes more than sophisticated electronics. To help your camera produce clear, high-target-to-background bone images, you need a reliable, quality reagent like AN-MDP® from Syncor™.

AN-MDP is made from medronate and that means low soft-tissue uptake[1] and readily demonstrated bone pathology[2]. With only 4% to 10% remaining in circulation after two hours, time between injection and imaging is conveniently short.

Yet, AN-MDP is one medronate bone agent that meets your budgetary needs. That's because Syncor is geared toward producing high-quality nuclear imaging reagents while keeping expensive overhead down. For example, our 30-vial ECONO-PAK can allow you considerable savings on the same excellent product that is in our 5-vial kit.

Maximize your camera's true potential and minimize your costs. Start your bone imaging procedures with AN-MDP.

Syncor International Corporation
12847 Arroyo Street
Sylmar, California 91342
213/365-0655—Inside California
800/423-5620—TOLL FREE Outside California

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

syncor™

Please refer to the brief prescribing information on the following page.

AN-MDP® (Technetium Tc 99m Medronate Kit)

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

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

CONTRAINDICATIONS. None known.

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

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

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

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

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

Pregnancy Category C: Animal reproductive studies have not been conducted on Technetium Tc 99m Medronate. It is also not known whether Technetium Tc 99m Medronate can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Technetium Tc 99m Medronate should be given to a pregnant woman only if clearly needed. Ideally, examinations using radiopharmaceuticals, especially those elective in nature, of a woman of childbearing capability should be performed during the first few (approximately 10) days following the onset of menses.

Nursing Mothers: Technetium Tc 99m Medronate is excreted in human milk during lactation, therefore, formula feedings should be substituted for breast feedings.

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

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

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

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

Bone imaging: 10–20 millicuries Technetium Tc 99m Medronate. Scanning is optimal at 1–4 hours post-injection. The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration.

HOW SUPPLIED. The AN-MDP® Technetium Tc 99m Medronate Kit is supplied either as a set of 5 or 30 sterile and pyrogen-free vials. Each nitrogen-flushed vial contains in lyophilized form: medronic acid 10 mg, stannous chloride (minimum) 0.51 mg, maximum total stannous and stannic chloride 1.01 mg. The pH is adjusted with HCl or NaOH solutions prior to lyophilization. Included in each 5-vial kit is one package insert and 10 radiation labels. Included in each 30-vial pack is one package insert and 60 radiation labels. Refrigeration is not necessary. Technetium Tc 99m Medronate Kits contain no preservative. Vials are sealed under nitrogen: air or oxygen is harmful to the contents of the vials and the vials should not be vented.

DESCRIPTION	CATALOG NUMBER
5-vial kit	K-401
30-vial ECONO-PAK	K-401 EP

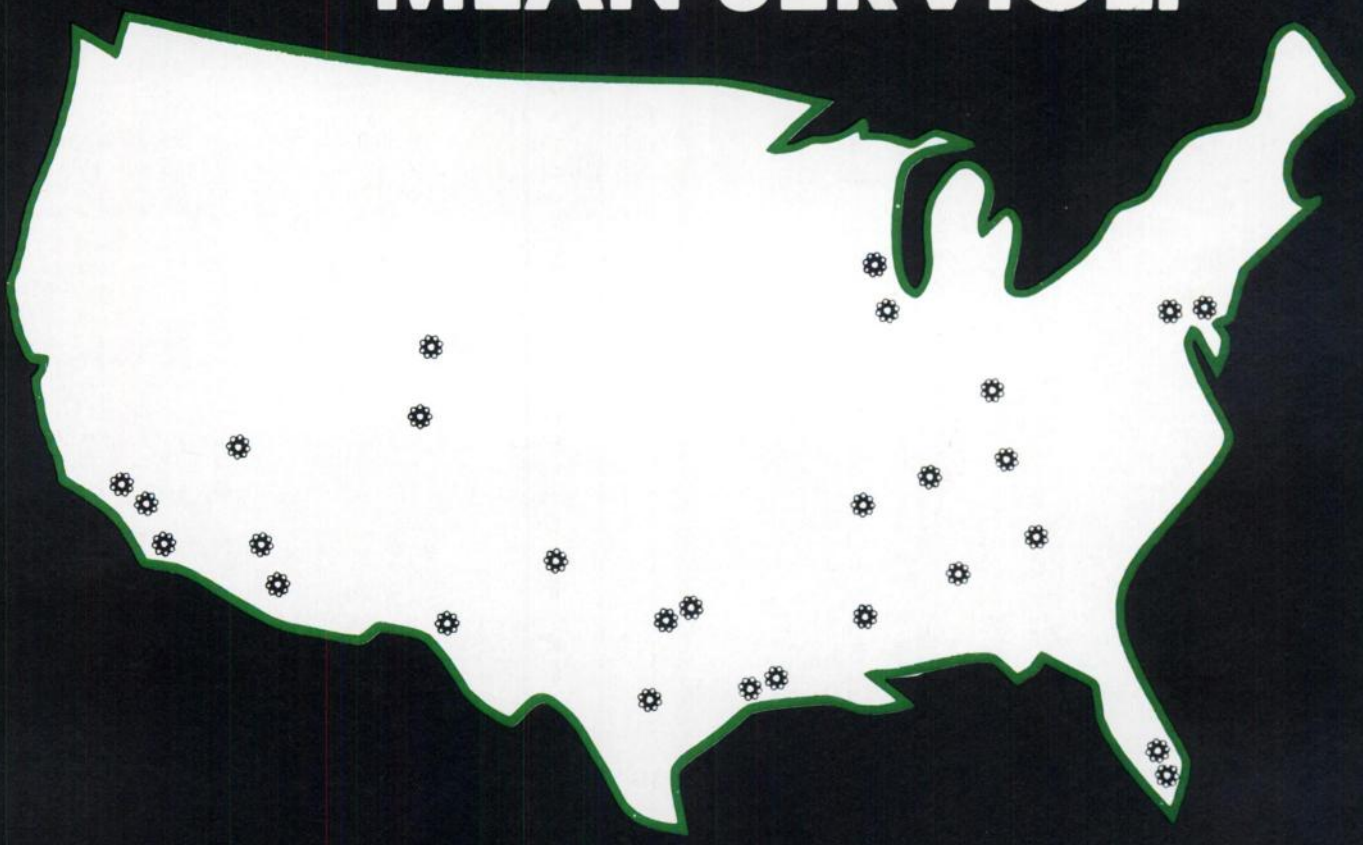
Syncor International Corporation
12847 Arroyo Street
Sylmar, California 91342

syncor™

AN-MDP® is a registered trademark of Syncor International Corporation.

With Nuclear Pharmacy...

25 NATIONWIDE CENTERS MEAN SERVICE!



WE BLANKET THE NATION...

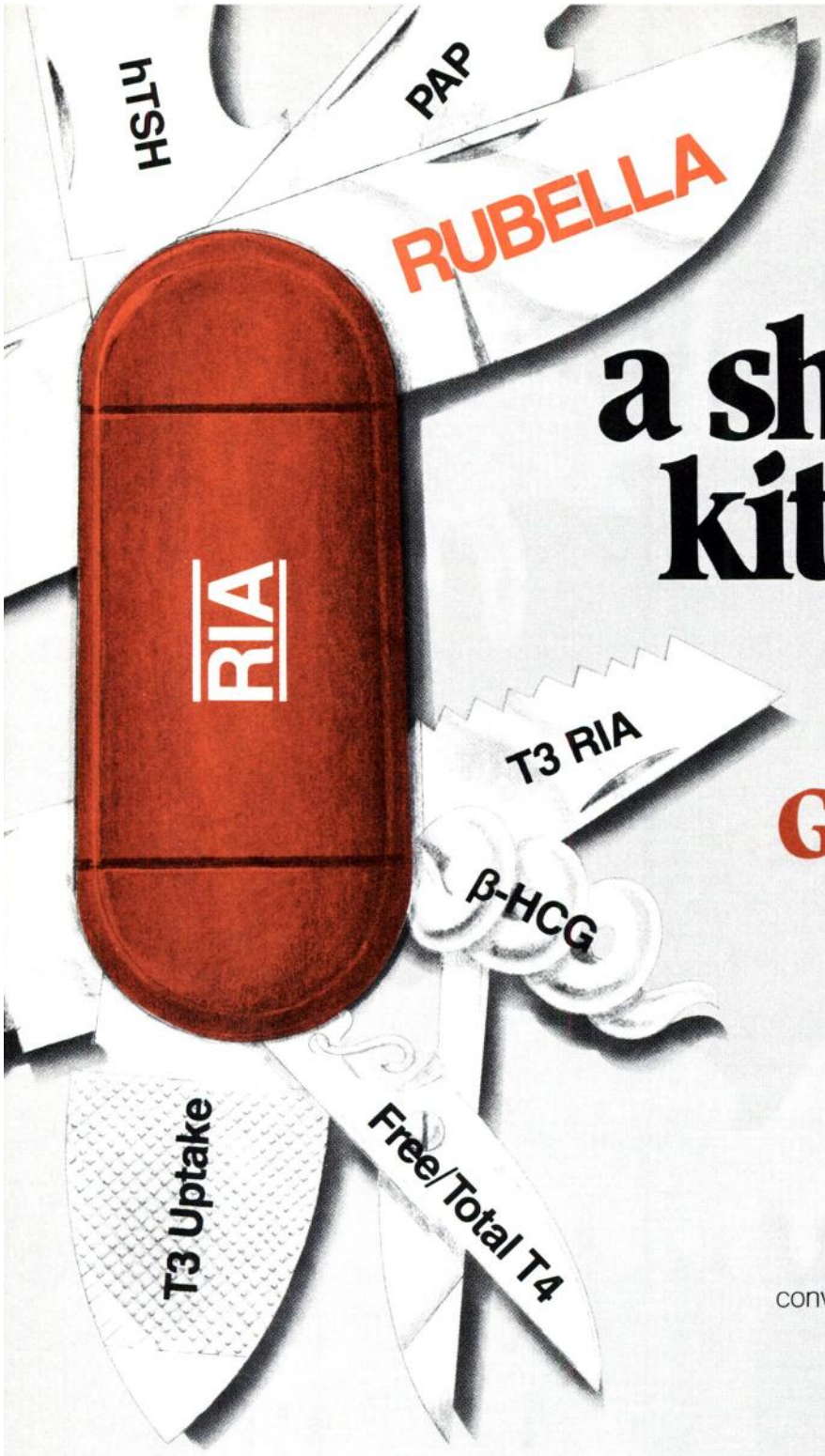
...and because we do, you get the immediate service you need. Only Nuclear Pharmacy can guarantee this kind of service because only Nuclear Pharmacy blankets the nation. And we're adding more distribution centers all the time.

Birmingham • Phoenix • Tucson
San Diego • Anaheim • Van Nuys
Denver • Colorado Springs* • Miami
Ft. Lauderdale • Atlanta • Chicago
Louisville • Jackson, MS* • El Paso
Las Vegas* • Philadelphia • Dallas
Harrisburg, PA • Memphis • Austin
Nashville • Knoxville* • Houston
Lubbock • Ft. Worth • Milwaukee
Beaumont/Port Arthur* *soon to open

For Service...With Speed!

nuclear pharmacy incorporated

P.O. Box 25141
Albuquerque, NM 87125
505/ 292-5820



There's a sharp new kit for your RIA lab.

GAMMACOAT™ RUBELLA ANTIBODY RIA KIT

Now you can test for rubella IgG antibodies in your own lab. And, you can do it with the convenience and accuracy of a coated-tube assay.

Features include:

- *Speed*—Same-day results.
- *Convenience*—All reagents are ready-to-use.
- *Superior Technology*—No need to rely on visual interpretation, as in HAI and PHA tests. No time-consuming serum pretreatment. No need for RBC's.

Call or write for more information or an evaluation kit.

CLINICAL ASSAYS
DIVISION OF TRAVENOL LABORATORIES, INC.

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

SNM BOOKS

SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY and Other Selected Computer Aspects. Ron R. Price, David L. Gilday, and Barbara Y. Croft, Eds. This volume, which was published in 1980, includes an overview of single photon emission computed tomography and numerous papers that describe and evaluate specific systems and techniques. Papers cover such topics as Anger Cameras; seven-pinhole and slant-hole collimators; brain, cardiac, and gated blood-pool studies; and the BICLET and SPECT systems. (SNM members: $18.00 + $2.50 postage and handling; list price $27.00)

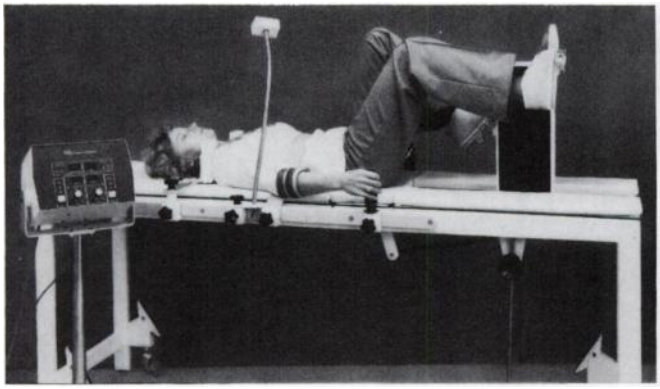
NUCLEAR MEDICINE REVIEW SYLLABUS. Peter T. Kirchner, Ed. This well-indexed volume is a comprehensive review of the major scientific and clinical advances that have occurred *since the early 1970's*. The chapter's include Radiopharmacology, Instrumentation, Radiation Effects and Radiation Protection, Cardiovascular, Central Nervous System, Endocrinology, Gastroenterology, Genito-Urinary System, Hematology-Oncology, Pulmonary, Radioassay, and the Skeletal System and were prepared by more than fifty recognized authorities in their fields. ($30.00 + $2.50 postage and handling.)

RADIOPHARMACEUTICALS II. PROCEEDINGS OF THE 2nd INTERNATIONAL SYMPOSIUM ON RADIOPHARMACEUTICALS. Vincent J. Sodd, David R. Allen, Dennis R. Hoogland, and Rodney D. Ice, Eds. This 809 page volume is a complete compilation of papers from the 1979 International Symposium, including a Keynote Address by former AEC Chairperson Dixy Lee Ray and a panel discussion entitled "International Regulatory Affairs Relating to Radiopharmaceuticals." Chapters cover such topics as quality control, organic and inorganic radiopharmaceuticals, functional imaging, RIA, pharmacokinetics, and various body systems. ($40.00 + $2.50 postage and handling. **Special Offer!** Buy *Radiopharmaceuticals II* for $40.00 and get *Radiopharmaceuticals* for only $10.00 + $2.50 each postage and handling!)

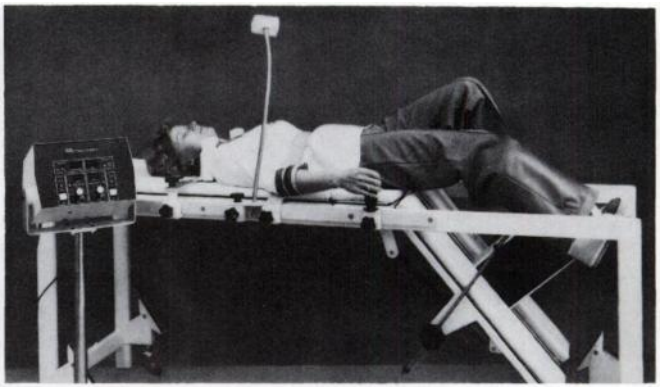
Other books available from the Society are *THE HERITAGE OF NUCLEAR MEDICINE* ($14.50), *NUCLEAR CARDIOLOGY: SELECTED COMPUTER ASPECTS* ($12.50), *NUCLEAR MEDICINE IN CLINICAL PEDIATRICS* ($22.50), *SEMICONDUCTOR DETECTORS IN THE FUTURE OF NUCLEAR MEDICINE* ($7.50), *TOMOGRAPHIC IMAGING IN NUCLEAR MEDICINE* ($12.00), and the *NUCLER MEDICINE SCIENCE SYLLABUS* ($30.00). For ordering and additional information please contact: Book Order Department, Society of Nuclear Medicine, 475 Park Avenue South, New York, NY 10016 or phone (212) 889-0717.

Upright Position with ergometer at partial extension

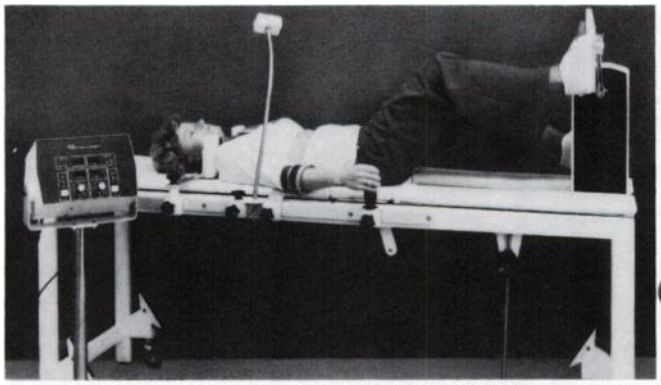
Upright Position with ergometer fully extended



Supine Position with ergometer elevated and partially extended



Supine Position with ergometer depressed and partially extended



Supine Position with ergometer elevated and fully extended

Table ready for general imaging with drop-in panel in place

Cardiac Stress?

How's this for VERSATILITY.

- Upright or Supine
- Large or Standard Field Cameras
- Workload or Heart Rate Control
- ECG or Computer Fed
- Anterior or Posterior Imaging
- Fixed or Mobile Cameras and — it can be used for Stress or General Imaging

With These Unmatched Features

- Imaging During Stress — Upright or Supine.
- All Digital Readout Provides Error-Free Indications.
- Fully Adjustable Ergometer Position and Angle to Fit Patients of any Size.
- Designed to be Used with Standard View and Large Field Cameras.
- Low Density Table Top.
- Posterior Viewing with any Camera.
- Controls Conveniently Located on Separate Console which can be Positioned anywhere.
- Heart Rate Control of Workload.
- Can Accept ECG and Computer Heart Rate Signals.
- Patient Monitors Own Speed, Thus Eliminating Unnecessary Directions.
- Rugged Construction.
- Visual Heartbeat Indicator; Aural Indication Available Through Front Panel Switch.
- Can be Calibrated in the Field.
- Automatic Load Drop-out at Low Pedal Speed.
- Table Can be Used for General Imaging.
- Elapsed Time Clock Updated Every Six Seconds.

edc **ENGINEERING DYNAMICS CORPORATION**

120 Stedman Street, Lowell, MA 01851
(617) 458-1456 Telex No. 951-779 EDC LOWE

137-AU1

With this Dosecalibrator you will always be up-to-date.

The RADX Assayer I isotope dosecalibrator is the heart of the RADX system. It is the **only** dosecalibrator with an atmospheric ionization chamber for high activity linearity. It also incorporates an optical scanner for isotope selection — no moving parts, no contacts to corrode. Other standard features include a remote chamber, automatic monitoring of background with subtraction, automatic ranging and much more. Unchallenged for reliability, accuracy and linearity.

The RADX Isotron is the only control unit which qualifies as a nuclear medicine inventory control computer. It keeps track of up to 20 radio pharmaceuticals in different chemical forms — simultaneously and independently, and provides constant inventory information on each radio pharmaceutical. It also performs dose volume calculations in real and totally variable future time. Computer programming skills not required.

The RADX Isocord produces a hard copy print out in triplicate for all of your record keeping needs, by patient name, and selected isotope. Addition of the Isocord completes the most advanced dosecalibration system available from anyone. RADX is the first to offer anything like it at anywhere near its price.

The RADX dosecalibration system meets all radiopharmaceutical inventory control and NRC or State accountability requirements. To get the complete story on staying completely up-to-date, call RADX. 713/468-9628.

RADX
P.O. Box 19164
Houston, Texas 77024

The JNM CLASSIFIED ADVERTISING SECTION

The *Journal of Nuclear Medicine* accepts classified advertisements for such listings as: "Positions Open," "Positions Wanted," "For Sale," "Equipment Wanted," "Seminars/ Courses," etc.

All ads must be received **in writing** by the first of the month preceding publication. No ads will be accepted by telephone. Ads must also be prepaid or accompanied by a purchase order.

RATES:

Small listings:

90¢ per word

*Special rate for members of 70¢ per word for Positions Wanted only.

Display Ads:

⅛ pg.	$150
¼ pg.	205
½ pg.	325
Full pg.	560

*Agency commissions are allowed on display ads only.

MEASUREMENTS:

For advertisers wishing to supply camera ready copy, please check the measurements below.

⅛ pg.	3⅛ × 2¼
¼ pg.	3⅛ × 4⅝
½ pg. horizontal	6½ × 4⅝
½ pg. vertical	3⅛ × 9½
Full pg.	7 × 9½

Please Note: No copy changes will be accepted after the closing date. If copy changes are necessary, there will be a production charge based on the amount of changes needed. This charge will be at the discretion of the publisher.

Send all orders and copy to:
Classified Advertising Department
Society of Nuclear Medicine
475 Park Avenue South
New York, NY 10016
(212) 889-0717

PLACEMENT

POSITIONS OPEN

NUCLEAR MEDICINE TECHNOLOGIST full-time positions available at Veterans Administration Medical Center, Martinez, CA, which is located 35 miles northeast of San Francisco with easy access to rapid transportation. This medical center is a teaching hospital affiliated with University of California School of Medicine, Davis, CA. Apply or send application to Personnel Service, VA Medical Center, 150 Muir Rd., Martinez, CA 94553, or call (415) 228-6800, ext. 221. Equal Opportunity Employer.

NUCLEAR MEDICINE TECHNOLOGIST. Parkview Episcopal Hospital, located in scenic Pueblo, Colorado, currently has a position open for a registered or registry-eligible Nuclear Med Tech. This is a great opportunity to join a progressive hospital with excellent benefits! Please submit resume to: Personnel Office, Parkview Episcopal Hospital, 400 W. 16 St., Pueblo, CO 81003. EOE.

NUCLEAR MEDICINE TECHNOLOGIST. Immediate opening for a registered or registry-eligible Nuclear Medicine Technologist. Experience with computers and nuclear cardiology desirable. NHMH is a modern 500-bed hospital serving southeastern North Carolina. This historic port city boasts beach resorts, tourist attractions, and a variety of cultural opportunities. Contact: Don Westmoreland, Employment Manager, New Hanover Memorial Hospital, P.O. Box 9000, Wilmington, NC 28402. EOE.

NUCLEAR MEDICINE TECHNOLOGIST. Welborn Hospital has an interesting and challenging position available for a staff Nuclear Medicine Technologist. This opportunity is in an ultra-modern and well-managed Nuclear Medicine lab with the latest computerized equipment for cardiology procedures. The successful candidate will be a graduate of an approved Nuclear Medicine program and will be registered or registry eligible. Welborn offers an excellent salary and comprehensive benefit program. Interested individuals should apply to: Employment Manager, Welborn Baptist Hospital, 401 S.E. Sixth St., Evansville, IN 47713, or call collect (812)426-8135. An Equal Opportunity Employer.

NUCLEAR MEDICINE RESIDENCY. Applications are invited for a first-year position that is available 7/1/82 at the Washington Hospital Center, a 900-bed not-for-profit teaching hospital in Washington, DC. The program is approved by the Liaison Committee for Graduate Medical Education of the AMA and is affiliated with George Washington University. The Nuclear Medicine Department performs 1,705 nuclear cardiology studies, 8,466 general imaging procedures, 16,113 radioassay studies, and administers 42 radioisotope therapy doses annually. It is equipped with the most modern instrumentation, is extensively computerized, and has facilities for single-photon emission tomography. Ample research facilities are available and elective rotations to other area institutions are encouraged. Extremely close working relations have been developed with other Clinical Departments, especially Cardiology, Radiology, and Nephrology/Transplant. For further information, please contact: Dr. Nicholas G. Nolan, Chairman of the Department of Nuclear Medicine at the Washington Hospital Center, 110 Irving Street, N.W., Washington, DC 20010.

ASSOCIATE PROFESSOR/PROFESSOR—Director of Radiopharmacy. Faculty position with University of New Mexico College of Pharmacy. Responsibility for undergraduate, residency, and research programs in radiopharmacy. Position open January 1, 1982, twelve-month appointment. Salary open. Prefer B.S. in pharmacy and Ph.D. in radiopharmacy or related field. Submit curriculum vitae to: G. Philip Lehrman, Ph.D., Chairperson, Search Committee, College of Pharmacy, University of New Mexico, Albuquerque, NM 87131. Equal Opportunity Employer.

PATHOLOGIST. NUCLEAR MEDICINE Physician wanted to join group practice at active general hospital in rapidly growing southern community that is educational, industrial, and governmental center. Certification by ABNM or board eligibility preferred. Outstanding opportunity for pathologist with special interest in nuclear medicine imaging. Reply: P.O. Box 64628, Baton Rouge, LA 70896.

EDUCATIONAL COORDINATOR. DIRECT and coordinate the educational program in nuclear medicine technology, according to hospital policies and national accreditation standards relating to nuclear and radiation safety. Prepare the budget and funding allocations for the educational program. Evaluate the program and related factors, such as selection, training, and placement of students. Plan and develop joint programs in conjunction with other medical facilities. Organize committees to provide technical and administrative assistance to program. Coordinate on-the-job training programs with employers, and evaluate progress of students in conjunction with program goals. Must have at least a bachelor of arts or science degree in medical technology or radiologic technology plus an advanced degree. Must also be registered radiologic technologist, and a nuclear medicine technologist, and have at least three (3) years experience as a nuclear medicine technologist. Forty (40) hours per week (Monday–Friday, 8:00 a.m. to 4:30 p.m.). Salary of $8.56 per hour. Contact the Employment Manager of the University of Tennessee Memorial Hospital of Knoxville at (615)971-3101.

RESIDENCIES IN NUCLEAR MEDICINE. The Nuclear Medicine Ultrasound Service at Veterans Administration Wadsworth Medical Center invites applications for its Residency Program, beginning July 1, 1982. This training program is approved by the Accreditation Council on Graduate Medical Education and satisfies the residency requirements of the American Board of Nuclear Medicine. Intensive experience in clinical nuclear medicine in a new modern facility is offered. Opportunity is also provided to develop competence in ultrasonography and other correlative imaging modalities, in vitro diagnostic procedures, radiopharmaceutical techniques, and therapy with unsealed radioactive sources. Didactic instruction includes mathematics, nuclear physics, radiochemistry, radiobiology, and physiology. Affiliation with nearby UCLA School of Medicine provides the opportunity for continued academic involvement. Salary range is $23,438 to $26,726, depending on prior postgraduate training. Contact: William H. Blahd, M.D., Chief, Nuclear Medicine Ultrasound Service, VA Wadsworth Medical Center, Wilshire and Sawtelle Blvds., Los Angeles, CA 90073. Affirmative Action/Equal Opportunity Employer.

NUCLEAR MEDICINE PHYSICIAN AT the Assistant Professor level. Applicant should be board certified or eligible in nuclear medicine (ABNM). Background in diagnostic radiology is preferred. Excellent clinical and research capabilities are available (positron emission tomography, dynamic x-ray computerized tomography, and nuclear magnetic resonance). Strong interest in research and teaching is highly desirable. Send curriculum vitae to A. Alavi, M.D., Chief, Division of Nuclear Medicine, Department of Radiology, Hospital of the Univ. of Pennsylvania, 3400 Spruce Street, Philadelphia, PA 19104. The University of Pennsylvania is an equal opportunity, affirmative action employer.

NUCLEAR MEDICINE TECHNOLOGIST. Join our team of professionals in our Radioisotope Department. Ideal opportunity for qualified Nuclear Medicine Technologist seeking to ensure a great future with a world-famous hospital. Previous experience is desirable and the applicant must be registered or registry eligible Nuclear Medicine Technologist (RIA). Excellent working environment and benefits. For immediate consideration please send resume or apply: Human Resources/Employee Relations, The Methodist Hospital, 6565 Fannin, Houston, TX 77030. EOE.

NUCLEAR MEDICINE TECHNOLOGIST, Ft. Lauderdale, Florida. Florida Medical Center, a 400-bed acute-care facility, has positions available for registered or registry-eligible technologists in its expanding and progressive Nuclear Medicine Department. The department contains six scintillation cameras, a MDS computer, RIA department, and radiopharmacy. Excellent starting salary and benefits. Inquire to Chief Technologist, Dept. of Nuclear Medicine, Florida Medical Center, 5000 West Oakland Park Blvd., Fort Lauderdale, FL 33313; (305) 735-6000.

POSITIONS WANTED

NUCLEAR MEDICINE RESIDENT, B.E. in Cardiology, seeks position primarily involving nuclear cardiology and echocardiography. Reply: Box 1001, Society of Nuclear Medicine, 475 Park Ave. So., New York, NY 10016.

32 Y/O ABNM, ABIM DIRECTOR OF Nuclear Medicine service in 300-bed government teaching hospital seeks new position. Reply: Box 1002, Society of Nuclear Medicine, 475 Park Ave. So., NY, NY.

NUCLEAR PHYSICIAN-PATHOLOGIST seeks hospital or private group practice. Available immediately. Numerous publications. Board eligible. Thyroidology. Nuclear cardiology. Reply: Box 1003. Society Nuclear Medicine, 475 Park Ave. So., New York, NY 10016.

FOR SALE

USED GAMMA COUNTER AT SUBSTANTIAL discount. Picker Pace-1 Stectroscaler 4 R. Contact: P.O. Box F, Maywood, NJ 07607 or (201)836-5593.

NUCLEAR MEDICINE TECHNOLOGIST

St. John's Hospital is seeking a staff technologist for its expanding nuclear medicine service. Candidates must be ARRT/NMTCB registered or registry eligible. Duties include radiopharmaceutical preparation and general nuclear imaging with participation in an aggressive nuclear cardiology program.

St. John's Hospital is an 850-bed teaching hospital affiliated with Southern Illinois University School of Medicine. A wide range of in vivo nuclear medicine procedures is performed. The nuclear medicine laboratory is equipped with both stationary and mobile scintillation cameras and computer capabilities.

We offer competitive salary and excellent benefits.

Qualified applicants contact:
William Berberet
Personnel Department
St. John's Hospital
800 East Carpenter
Springfield, Illinois 62709
(217)525-5600

EOE—M/F

NUCLEAR MEDICINE TECHNOLOGIST

The Medical Center of Beaver County, Inc., a new 500-bed acute-care hospital located 30 miles northwest of Pittsburgh, has immediate opening for an ARRT (NM), NMTCB, or ASCP Registered Technologist. One to three years experience required. Our modern facility has two stationary cameras, portable camera, rectilinear scanner, RIA department, and we will be getting a computer and a whole-body table in the late fall.

We offer a competitive salary and fringe benefits program. Please forward resume to: Personnel Department

Medical Center of
Beaver County, Inc.
1000 Dutch Ridge Rd.
Beaver, PA 15009

An Equal Opportunity Employer M/F

BAYLOR COLLEGE OF MEDICINE
Nuclear Medicine Fellowship and Residency Program
1982–1983

Residency and fellowship positions are available in an AMA approved residency program which includes training in two large nuclear medicine laboratories: (1) St. Luke's Episcopal-Texas Children's Hospitals and Texas Heart Institute joint facilities and (2) Ben Taub General Hospital.

Residency training encompasses the full spectrum of nuclear medicine procedures, both in vivo and in vitro, in pediatric and adult patients. A mobile nuclear medicine capability emphasizes critically ill patients. Because of a substantial commitment to education, including a bachelor's degree program in nuclear medicine technology, the faculty of the Nuclear Medicine Section is very broad based. Trainees attend lectures and laboratories in radiation physics, instrumentation, radiopharmacy, radioimmunoassay, radiobiology, and radiation health in addition to the usual clinic nuclear medicine courses and seminars.

Fellowships with emphasis on cardiac and pulmonary disease are available in association with the Texas Heart Institute. With the mobile capabilities and a large population of critically ill patients (total hospital beds, 1200; intensive care beds, 190), participation in one of the most rapidly growing areas of clinical nuclear medicine is possible with potential for participation in several research projects related to cardiovascular, pulmonary, and critical care nuclear medicine.

Requests for further information should be directed to: John A. Burdine, M.D., Chief, or Paul H. Murphy, Ph.D., Residency and Fellowship Coordinator, Nuclear Medicine Section, Department of Radiology, Baylor College of Medicine, Houston, TX 77030.

NUCLEAR MEDICINE LABORATORY MANAGER

This is a position in clinical Nuclear Medicine at the University of California at Davis. Person is responsible for supervision, evaluation, and coordination of Nuclear Medicine Technologists; coordination and participation in the technologist training program, performing and/or supervising studies; and preparation of departmental business statistics, budget and administrative reports. The department has four scintillation cameras, two MDS computers, one Pho/Con and three well counters. The department provides in vivo, in vitro, and imaging services to the 375-bed university teaching hospital.

Minimum qualifications include certification as a nuclear medicine technologist (ARRT, CNMT, or ASCT), extensive experience as a clinical nuclear medicine technologist, including three years supervisory experience. In addition to a degree in science, other administrative training or experience such as a business degree would be helpful, and knowledge and abilities essential to the successful performance of the duties assigned.

UCD
UC DAVIS MEDICAL CENTER MC

Nuclear Medicine Technologist

We have an opportunity in our growing Radiology Department for a Nuclear Medicine Technologist. You would be involved in a full complement of scanning procedures using a large-field-of-view gamma camera and a Digital Gamm II computer. Responsibilities include nuclear medicine procedures, isotope preparation, and quality control. Candidates must have completed an accredited nuclear medicine program. ARRT registration in nuclear medicine or eligibility for registration is required. The position offers a commensurate starting salary based on background and experience. An excellent benefits program, including a hospital-paid employee-owned retirement program, is provided.

●

Call or write: Barbara L. Murray, Personnel Representative, The Mary Imogene Bassett Hospital, Cooperstown, NY 13326. Tel: (607)547-3121.

●

Located in a rural resort village, The Bassett Hospital is a regional referral and teaching center affiliated with Columbia University. There are approximately 70 physicians on the staff, which is organized as a hospital-based group medical practice.

The University of Nevada, Las Vegas, College of Allied Health Professions, Department of Radiologic Technology,

is anticipating an opening for a faculty member to serve as the **Nuclear Medicine Educational Coordinator.**

Position will begin approximately August 23, 1982, and involves planning and administration of the Bachelor Degree Program of Nuclear Medicine. The position also requires teaching responsibilities. Qualifications include: Doctorate preferred, registry in nuclear medicine awarded by the American Registry of Radiologic Technologists or Nuclear Medicine Technologist Certification Board (a second registry in radiography preferred); a minimum of two years of teaching at the collegiate level.

Salary commensurate with qualifications. Deadline for application is December 1, 1981. Send curriculum vita to the Department of Radiologic Technology, University of Nevada, Las Vegas, 4505 Maryland Parkway, Las Vegas, NV 89154.

The University of Nevada, Las Vegas, is an Equal Opportunity/Affirmative Action Employer

Chief Nuclear Medicine Technologist

Saint Agnes Medical Center, a 300-bed university-affiliated hospital, seeks a chief technologist for expanding nuclear medicine department with strong interests in cardiovascular procedures, pulmonary imaging, renal examinations, and emission tomography. The department is equipped with three scintillation cameras and ADAC computers; incumbent technical of three. Two nuclear medicine physicians hold faculty appointments at University of California, San Francisco and participate in clinical instruction and investigation. Applicants should hold Bachelors degree, be certified in nuclear medicine technology, and have experience in supervision and computer data processing.

Central California location offers delightful living conditions and ready access to mountains and seashore.

Equal Opportunity Employer. Please address inquiries to: c/o Personnel Services, H.F. Corbus, M.D., Director, Nuclear Medicine, Saint Agnes Medical Center, 1303 East Herndon Avenue, Fresno, CA 93710.

NUCLEAR MEDICINE RESIDENT TRAINING PROGRAM

Applications for enrollment in this program leading to eligibility to write the Royal College of Physicians and Surgeons of Canada specialty examination are invited. The program is available as either a first or second discipline training.

Applications with resume should be submitted to:

Dr. B.C. Lentle
Dept. of Nuclear Medicine
Cross Cancer Institute
11560 University Ave.
Edmonton, Alberta, Canada T6G 1Z2

RESIDENCY IN NUCLEAR MEDICINE

Two-year approved program offering broad clinical experience including tertiary care and community hospitals, oncology and pediatrics, ultrasound and CT, strong basic science teaching, radiation safety. Central radiopharmacy and RIA. Opportunity for research. An integrated program at the State University of New York at Buffalo School of Medicine. Available January 1, 1982. Contact: M.A. Bender, M.D., Program Director, Dept. of Nuclear Medicine, Roswell Park Memorial Institute, 666 Elm St., Buffalo, NY 14263 or M. Blau, Ph.D., Chairman, Dept. of Nuclear Medicine, SUNY/Buffalo, 3495 Bailey Ave., Buffalo, NY 14215.

Radiopharmaceutical Technical Services

As the world leader in the field of Nuclear Medicine, New England Nuclear is continually expanding to meet the steady increase in customer demand. As a result of this growth, we currently have a position open with our Radiopharmaceutical Technical Services Group.

The ideal candidate for this position will have a minimum of an M.S. in analytical chemistry (Ph.D. preferred) with 3-5 years experience in a radiopharmaceutical/pharmaceutical analytical laboratory. Prior supervisory experience is necessary. Primary responsibilities for this position will be supervising the operation, staff, and maintenance of the Technical Service laboratory, as well as designing analytical experiments for testing radiopharmaceutical products and directing their implementation. Additional duties involve supervising a program designed to select and evaluate elastomer closures for use with NEN's radiopharmaceutical products.

Interested candidates should submit a resume with salary history to Ms. Erin Moore, Personnel, New England Nuclear, 601 Treble Cove Road, Billerica, MA 01862.

NEN New England Nuclear
...A Better World.
An Equal Opportunity Employer M/F

nuclear medicine technologist

SwedishAmerican is a 420-bed general acute care hospital located in the pleasant community of Rockford, Illinois, in the Rockriver Valley. We have an immediate opening for a registered Nuclear Medicine Technologist with at least 6 months of actual experience in nuclear medicine (exclusive of training) preferred. Selected applicant must be able to perform the full complement of in-vivo nuclear medicine scanning, imaging procedures, including calibrations of equipment and radionuclide dose calibrations. The applicant will be required to participate on stand-by call. We have a modern department with the latest state-of-the-art equipment. Nuclear cardiology procedures will be added in the near future; experience in this would be a plus.

The candidate we choose will receive a competitive salary, and outstanding benefits including free medical, dental, life and disability insurance and flexible paid time off. For interview, Call Collect:

(815) 966-2080
PERSONNEL DEPARTMENT

SwedishAmerican
PEOPLE WHO CARE
...about each other
1400 Charles Street
Rockford, IL 61101

An Equal Opportunity Employer

MEDICAL PHYSICIST INSTRUCTOR
Brooke Army Medical Center, San Antonio, Texas

Immediate opportunity for a medical physicist instructor at one of the Army's largest medical centers in a nuclear medicine clinic with a large clinical case load. Full complement of most modern imaging equipment and computers, including seven gamma cameras and two complete MDS computer systems, an RIA laboratory, and a nuclear pharmacy.

This position is responsible for the teaching programs at both college undergraduate and graduate levels, emphasizing the relationship between the physical sciences and clinical medicine to nuclear medicine fellows, radiology residents, and nuclear medicine technologists. Participates in all phases of research and equipment evaluation as a full team member.

Interested applicants must be fully trained in nuclear and medical physics. Experience in computer programming is very desirable.

San Antonio, in south central Texas, is rich in cultural and historical events, and offers excellent recreational and educational opportunities. This is a federal civil service position at the GS-13 level, with a starting salary of $32,048 per year and liberal benefits.

Send resume to: Robert J. Telepak, M.D.
Lt. Colonel, Medical Corps
Chief, Nuclear Medicine Service
Brooke Army Medical Center
Fort Sam Houston, TX 78234
Tel: (512)221-2062

AD INDEX

Welcome Back!

AN-Sulfur Colloid
Technetium Tc 99m Sulfur Colloid Kit

Halley's Comet, which was last seen in 1910, will return from the outer reaches of the solar system and be visible again in 1986. As it orbits around the sun, this spectacular comet will be traveling at speeds of up to 185 miles per second.

Another speedy object is currently making a welcomed reappearance, right here on earth. Syncor's AN-Sulfur Colloid, formerly within the CIS orbit, requires only **one three-minute boil,** making it the fastest kit of its kind in the known universe. The reagents are supplied in a lyophilized reaction vial and ready-to-use, disposable syringes. That's good news for nuclear medicine professionals whose time is more effectively spent imaging patients than it is preparing reagents.

And AN-Sulfur Colloid can be quite economical. You can stock up at quantity discounts because AN-Sulfur Colloid is also among the most stable of its kind. In fact, in the 18 months to 2 years that it takes for your kit to expire, Halley's Comet will have traveled almost 2 billion miles!

But you needn't wait until 1986 to become acquainted with this reliable performer. You can order the fastest known Sulfur Colloid in the galaxy today by calling Syncor toll-free at 800-423-5620. California customers call (213) 365-0655.

Syncor International Corporation
12847 Arroyo Street
Sylmar, California 91342

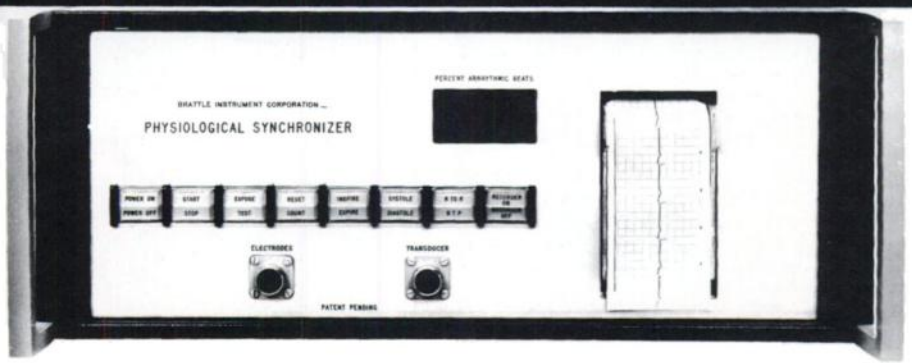
syncor™

Please refer to the brief prescribing information on the following page.

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

CintiChem®

Technetium Tc 99m Generators

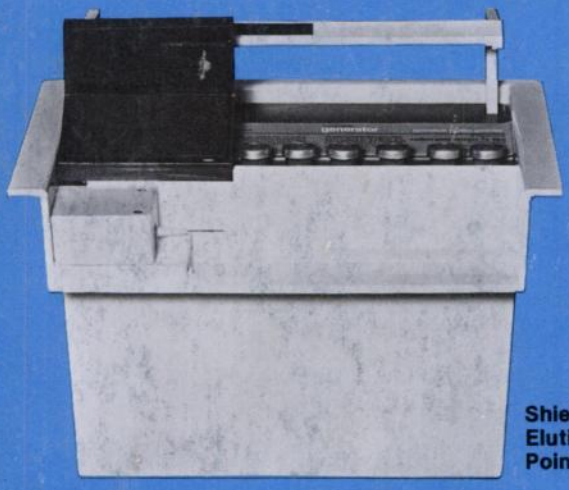
INCORPORATE THE FOLLOWING ADVANTAGES:

ONLY CINTICHEM®
Technetium 99m Generators are produced *in total* at one domestic production site which:

- Possesses its own Nuclear Reactor for the production of high specific activity Fission Products Mo 99,
- manufactures and purifies by a patented process high specific activity Fission Product Mo 99,
- loads Fission Product Mo 99 onto columns,
- assembles the Generators,
- performs quality control procedures including an elution check on each Generator,
- ships Generators directly to the user

This provides you with a reliable product supply and a uniformly high quality product.

Elution Transfer Point Shielded Hood Maximizes Radiation Protection During the Elution Process Itself



Shielded Elution Transfer Point

CINTICHEM® TECHNETIUM Tc 99m GENERATORS

DIRECT FROM THE SOURCE

CINTICHEM, INC.

a wholly owned subsidiary of

Medi-Physics, Inc.

P.O. BOX 816, TUXEDO, NEW YORK 10987 • FOR PRODUCT INFORMATION CALL TOLL FREE (800) 431-1146, IN N.Y.S. CALL (800) 942-1986

CintiChem® Technetium Tc 99m Generators are jointly manufactured by Union Carbide Corporation and Cintichem® Inc., a wholly owned subsidiary of Medi-Physics, Inc.

827-5