ANNOUNCING

MPI Indium DTPA In 111
(Pentetate Indium Disodium In 111)
In Cisternography

Cisternography presents the dynamics of CSF flow

When you need to know function—
cisternography is useful in the evaluation of:
• Patients who may need ventricular shunts
• Shunt patency and/or site of blockage
• Patients with symptoms of “normal pressure” hydrocephalus
• Patients with symptoms of “communicating” hydrocephalus
• CSF rhinorrhea patients
CLINICAL CRITERIA

"An ideal radiopharmaceutical for cisternography would satisfy the following criteria: (I) physiologically governed by CSF flow, (II) adequate half-life for desirable period of study, (III) photons suitable for scanning, (IV) low radiation dose, (V) least probable chemical toxicity, and (VI) controlled pharmaceutical quality. Chelated \(^{111}\)In satisfies all these conditions."

COMPARISON OF TWO RADIOPHARMACEUTICALS USED IN EVALUATION OF CEREBROSPINAL FLUID PATHWAYS

<table>
<thead>
<tr>
<th></th>
<th>(^{152})Yb DTPA</th>
<th>(^{111})In DTPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Half-Life</td>
<td>32 days</td>
<td>2.8 days</td>
</tr>
<tr>
<td>Biological Half-Life</td>
<td>12 hours</td>
<td>10 hours</td>
</tr>
<tr>
<td>Useful Photons (energy MeV)</td>
<td>0.177, 0.198, 0.173, 0.247</td>
<td></td>
</tr>
<tr>
<td>Useful Photons (% disintegration)</td>
<td>0.57</td>
<td>1.85</td>
</tr>
<tr>
<td>Whole Body Dose</td>
<td>0.069/500 μCi</td>
<td>0.039/500 μCi</td>
</tr>
<tr>
<td>Spinal Cord Surface Dose (rads)</td>
<td>8.0/500 μCi*</td>
<td>1.9/500 μCi*</td>
</tr>
</tbody>
</table>

1. Dose to spinal cord and brain surface

DESCRIPTION: MPI Indium DTPA In 111 is a diagnostic drug for intrathecal use. It is available as a sterile, pyrogenic, isotonic, aqueous solution, buffered to pH 7 to 8. At calibration time each milliliter contains 1 millicurie of Pentetate Indium Disodium In 111 (no-carrier-added), 20 to 50 micrograms of pentetic acid, and sodium bicarbonate for pH adjustment. The drug is to be discarded after single use. Radionucliod purity at calibration time is at least 99.0% with less than 0.1% Indium In 114m and 0.1% Zinc Zn 65. The concentration of each radionuclidic contaminant changes with time. Graph 1 shows maximum concentration of each radionuclidic impurity as a function of time.

INDICATIONS AND USAGE: Pentetate Indium Disodium In 111 is recommended for use in radionuclide cisternography.

CONTRAINDICATIONS: None known.

WARNINGS: The contents of the vial are radioactive. Adequate shielding of the preparation must be maintained at all times.

Since the drug is excreted by the kidneys, caution should be exercised in patients with severely impaired renal function.

PRECAUTIONS: Pentetate Indium Disodium In 111, as well as other radioactive drugs, must be handled with care and appropriate safety measures should be used to minimize external radiation exposure to clinical personnel, and to minimize radiation exposure to the patients consistent with proper patient management.

Do not use after the expiration time and date (7 days after calibration time) stated on the label.

Discard vial after a single use. Do not use if contents are turbid.

Carcinogenesis, Mutagenesis, Impairment of Fertility

Pregnancy Category C

Animal reproductive studies have not been conducted with MPI Indium DTPA In 111. It is also not known whether Pentetate Indium Disodium In 111 can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Pentetate Indium Disodium In 111 should be given to a pregnant woman only if clearly needed.

PRECAUTIONS: 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

It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when Pentetate Indium Disodium In 111 is administered to a nursing mother.

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: Aseptic meningitis and pyrogenic reactions have been rarely (less than 0.4%) observed following cisternography with Pentetate Indium Disodium In 111.

HOW SUPPLIED: Pentetate Indium Disodium In 111 (no-carrier-added) is supplied in single dose glass vials, each containing 1.5 ml of solution with a concentration of 1 millicurie per ml and a total activity of 1.5 millicurie per vial at calibration time.
Meet the best radiation detective in the business.

Teledyne Isotopes TLD
IT'S RUNNING THE FILM BADGE SERVICE OUT OF TOWN!

Low fade, high beta response
Teledyne TLD fade rate is no more than 1% per month at 32° C. And without the heavy casings of a film badge, TLD has little or no filtration, so the beta response is superior. High sensitivity phosphors measure radiation doses as low as 10mRem... by comparison, film fades out of the picture!

TLD is tougher
Our Teflon TLD dosimeter is rugged, durable and re-usable, taking all the abuse your employees can dish out. TLD withstands moisture, temperature changes, and even being cycled through a washing machine.

Lowest TLD prices available
Teledyne Isotopes is the only TLD manufacturer offering its own badge service as well. We can deliver lower cost-per-badge prices than anyone else in the business, and our efficient, on-time dose reports can save your company additional time and money in processing of data.

TELEDYNE ISOTOPES
50 Van Buren Avenue
Westwood, NJ 07675
201-664-7070 TELEX 134-474

Want to join the Teledyne TLD Detective Squad? Send in the coupon and we'll send you your own TLD Badge... and all the information you need to become a radiation detective.

Name
Title
Company
Address
City
State
Zip
Unbelievable ease of operation—superior image quality

"Continuous capacity for more than 60 exposures and no operator — it's great." "The best image quality we've seen." "By the time you make the second trip to the darkroom you know why you want this camera." These are just a few of the scores of comments we've been getting from users of the new Radx Video Imaging Camera.

Users demand high quality images — and ease of operation. Radx delivers both. Many believe it sets a new standard in multi-format imaging.

Check these features:
- No standby operator needed. Physician or technologist easily makes images with foot switch.
- 4600 paper images or 2300 film images

with one magazine loading — enough for over 200 examinations.
- Large, high-resolution images (2.6 by 3.5 or 3.5 by 4.8 inch image size).
- Throughput is up to twenty times greater than with cut film systems; schedule more patients.
- Lightweight, mobile, extremely versatile — quickly "tunes-in" to principal imaging system.

See for yourself how the Radx system can optimize operations in your department. Ask for a personal contact. Radx manufactures equipment for Radiology-Nuclear Medicine-NMR-Ultrasound and Video Imaging. Call 713/468-9628 or write:

RADX
1390 WEST BELT DRIVE • HOUSTON, TEXAS 77043
Order your data raw...or processed. Only one imager delivers both.

The 5000C combination nuclear detector and computer/video imager from IIE.

Until now, computer assisted nuclear imaging required two separate hard copy imagers: one for the gamma camera and one for the computer. Now there's an imager that does both.

Actually, the 5000C does a lot more. It's the first combination imager that lets you alternate from raw data to computer at a flip of a switch. And allows side-by-side x,y and video studies on the same sheet of 8 x 10 film. It even offers a choice of format sizes and separate contrast controls for each mode. And features the proven reliability of IIE's patented electromagnetically controlled shutter.

In fact, compared to any two single mode imagers, the 5000C is one investment that can advance the efficiency of your nuclear department—while saving time, space and the cost of extra equipment. And that's good news, no matter how you look at it!

For complete information, call or write, IIE, 901 S. Kay. Addison, IL 60101. (312) 543-4878. Attn: Marketing/Sales.

We Never Stop Advancing

© 1983 IIE, Inc.
In which range is Gastrin test sensitivity most important?

The answer is “questionable.”

Why? Because values in the “questionable” range (150 pg/ml-350 pg/ml) could reflect any of a number of disorders. Exactly where a value falls within this range can help the physician determine what might be wrong, and what follow-up tests or clinical observations could resolve the “questionable” diagnosis.

So it is within this elevated range that accurate gastrin values can be of greatest clinical significance to the physician.

And the GAMMADAB® Gastrin RIA Kit is designed to provide exactly that. Unlike other gastrin kits, its greatest sensitivity is in this critical “questionable” range.

In addition, our double-antibody gastrin kit is convenient to run. All reagents come ready-to-use, with just two pipetting volumes. Total room temperature incubation is only 70 minutes, for fast turnaround.

For more information about the value of gastrin testing in the questionable range, or for an evaluation kit, please contact us. Call or write Clinical Assays, Division of Travenol Laboratories, Inc., 620 Memorial Drive, Cambridge, Massachusetts 02139. Toll free in U.S.: (800) 225-1241. In Massachusetts: (617) 492-2526.

GammaDab® Gastrin RIA Kit

Innovating for Life™
CLINICAL ASSAYS
DIVISION OF TRAVENOL LABORATORIES, INC.
These products are available for purchase by investigators for use in laboratory animal testing, in vitro testing, Radioactive Drug Research Committee 21 CFR 361.1, and IND holders. In addition, these products are available for purchase by manufacturers of in vitro and in vivo products. Sodium Iodide I-123 and Indium Chloride In-111 are autoclaved at 121°C for 33 minutes to insure stability during storage. However, these products are not certified to be sterile or non-pyrogenic and no such guarantee is implied.

CAUTION: THESE PRODUCTS ARE NOT FOR HUMAN USE IN PRESENT FORM AND ARE NOT TESTED FOR STERILITY OR APYROGENICITY.

For technical information or product literature, please call toll free 800-227-0492 (in California 800-772-2477, internationally 415-652-7650), or TELEX 335-491 (answer back MEDI-PHYS EMVIL). Or, you may write to Marketing Manager, Radiochemicals, at the address below.

RESEARCH GRADE RADIOCHEMICALS

FOR LABELING:
Monoclonal Antibodies
Chelates
Antibodies
Blood Cells
Proteins

FOR LABELING IN
IN-VITRO RESEARCH:
HIGH SPECIFIC ACTIVITY SODIUM IODIDE I-125
Medium pH, medium concentration
Medium pH, high concentration
Low pH, medium concentration
Low pH, high concentration
TIN 113/INDIUM 113m GENERATORS
5 mCi-100 mCi

FOR LABELING IN IMAGING RESEARCH:
SODIUM IODIDE I-123
INDIUM CHLORIDE In-111
HIGH SPECIFIC ACTIVITY SODIUM IODIDE I-131

medi+physics

Medi-Physics Inc., 5801 Christie Avenue, Emeryville, California 94608
All reactor products are jointly produced by UNION CARBIDE CORPORATION and CINTICHEM, INC., a wholly-owned subsidiary of MEDI-PHYSICS, INC.
That's a lot of hospitals and clinics and it's the number of customers we're serving today. It's a source of pride to us because it reflects confidence. Today we operate the largest chain of centralized nuclear pharmacies in the United States. And we want to meet your needs for radiopharmaceuticals and our exclusive services ranging from waste disposal to radiation safety consultation to instrument calibration as well as many new services continually being added. We have a Pharmacy Service Center near you. Call us.

We're No.1 and we earn the right every day.

For Service...With Speed!

505/345-3551
P.O. Box 25141, Albuquerque, NM 87125

NEW COUNTERBALANCED THYROID PROBE FEATURES MULTICHANNEL ANALYZER!

Thyroid uptake tests have been done for decades, and multichannel analyzers have been available for decades. Now, however, the ND62T thyroid probe system marries both these proven techniques. A 2" x 2" well crystal is used in a design which makes possible a whole new range of clinical applications. A unique feature is a counterbalanced arm for quick, simple, accurate positioning. Write or phone for product brochure.
Now. An on-board computer and high resolution images. Anywhere.

New Data Mo™ Computerized Mobile Camera System from Picker International.

Micro Z and ACE™ Imaging. Automatically calibrates the detector to allow Asymmetric Contrast Enhancement.


13-inch Color Monitor. High resolution image and ECG display.

Integrated 16 bit computer. High capacity Winchester disc technology. Plus floppy disc drive for patient data.

Picker International's new Data Mo™ is a completely integrated mobile camera and computer. Its mobility brings all the benefits of high resolution imaging and quantitative analysis right to the patient. Fully supported software is available for your clinical setting. Use the Data Mo in intensive care, cardiac care unit or emergency room. Even right in the Nuclear Medicine Department to take the strain off peak workload periods.

Call your local Picker International representative to get all the information about the computer power of Data Mo with its high resolution images. Or write: Picker International, Nuclear and Ultrasound, 12 Clintonville Road, P.O. Box 99, Northford, CT 06472, (203) 484-2711.
Baird does it.

Again and again and again.

In 1981 alone there were 140,000 individual good reasons to choose Baird's System Seventy-Seven® gamma camera. Patients. Baird's nuclear images were the basis for unprecedented ease and accuracy in their diagnosis. Write or call our Nuclear Medicine Department. We'll see that you get complete information, including an extensive bibliography. Baird Corporation, 125 Middlesex Turnpike, Bedford, MA 01730. Telephone (800) 343-4827, in Massachusetts (617) 276-6500.
THE LAST SHALL BE FIRST

The XENAMATIC Series of Xenon Gas Delivery Systems is the most recent Xenon system to be developed yet it is the FIRST in a number of VERY IMPORTANT FUNCTIONS.

FIRST: To deliver a forced breathing system that can duplicate all the functions of a respirator, including PEEP and allows you to study patients with chronic lung disease that require breathing assistance and controlled O₂ environments.

FIRST: WITH DIGITAL RADIOACTIVE CONCENTRATION (mC/L) READ OUT.

FIRST: WITH DIGITAL PRECISION O₂ REPLENISHMENT THAT ALLOWS YOU TO STUDY PATIENTS ON INCREASED O₂ LEVELS.

FIRST: WITH OVER 20 FT. OF ACTIVATED CHARCOAL IN A SPECIALLY DESIGNED CARTRIDGE PACK THAT INHIBITS XENON REDISTRIBUTION WHEN NOT IN USE.

FIRST: WITH REVERSIBLE BREATHING PORT ON A FULLY LEAD LINED ARM.

FIRST: WITH ELECTRONIC REMOTE CONTROL (OPTIONAL).

FIRST: WITH A COMPLETELY SHIELDED EXPANDABLE INTERFACE.

FIRST: WITH A 150 LITER EXPANDABLE INTERFACE.

FIRST: WITH AUTOMATIC XENON TRAP ON AND OFF.

OTHER STANDARD FEATURES INCLUDE: Xenon Trap exhaust port monitor/alarm, low dead space, retractable and reversible breathing port arm, totally mobile, easy open CO₂ and Moisture Trap jars, low breathing resistance, inline bacteriological filter, reuse of stored Xenon, and ease and simplicity of operation found in no other unit.

The XENAMATIC Series was designed to meet the stringent requirements of rCBF. The same requirements can expand your Xenon lung function capabilities.

FOR MORE INFORMATION, CALL OR WRITE TODAY:

DIVERSIFIED DIAGNOSTIC PRODUCTS, INC.
7007 Brittmoore # 15
Houston, Texas 77041
713-466-9728
Another innovation from Novo...
The Novo BMC-LAB™ 22a
Dual Photon System for Determining Bone Mineral Content of the Axial Skeleton

Reliable data from the right source
Novo provides the most advanced technique—dual photon emission—for more reliable data. BMC-LAB22a utilizes this advanced technique in analyzing the axial skeleton, the site where predominant bone resorption occurs, for faster detection of osteoporosis, renal osteodystrophy and osteopenia. Analysis of BMC also produces important data for monitoring the patient on hemodialysis and for assessing ongoing nutrient supplementation, exercise and drug administration programs.

Constant right-angle view with ease and safety
Four convenient pushbutton programs scan the lumbar spine and right and left femoral necks, as well as separate vertebrae. This gives a constant right-angle view without moving the patient. Minimal radiation dosage is received, so repeated measurements can be performed. Advanced software allows for ease of operation, without special training. And special safety features lower the incidence of accidental and superfluous radiation exposure. Special precautions are not required.

BMC-LAB22a provides VDC display of scanned bone, as well as hard copy and scan reports from an integral printer.

Novo Is Represented In Major Markets Worldwide.

Novo Diagnostic Systems
A Division of Novo Laboratories, Inc.
59 Danbury Road
Wilton, Ct. 06897
U.S.A.
203-762-240

Novo Diagnostic Systems
A Division of Novo Industri A/S
Novo Allé
DK-2880, Bagsvaerd
Denmark
(02) 982333, Telex 37714

THE JOURNAL OF NUCLEAR MEDICINE

16A
Announcing HONEYCOMB 60
The PMT with 7% greater photocathode coverage.

New series gives you “voidless” scan area, excellent reliability, PHR and stability for both new and retrofit nuclear imaging systems.

The strength/weight/efficiency advantages of the honeycomb design has long been acknowledged as unique. Our “honeycomb” PMT series offers equipment designers unusual advantages too. The hex shape optimizes the individual tube’s cathode coverage thus providing a “voidless” honeycomb configuration for more efficient scintillator coverage. Our tubes exhibit excellent array PHR, plus stability (0.5%*) and uniformity.

The first of the Honeycomb series is the 60 mm, and is now joined by the 2½ and 3 inch hex. New literature is available on the Amperex full line of hex and round tubes from ¾” to 3” for Gamma, PET and RIA applications. Write today for your copy.

Amperex
A NORTH AMERICAN PHILIPS COMPANY

Amperex
230 Duffy Avenue, Hicksville, New York, 11802
Phone (516) 931-6200, TWX (510) 221-1839

In Europe: Philips Electronic Components and Materials Division • 5600 MD Eindhoven, The Netherlands, TELEX 3500 PHTC NL/NLJEVEO

* — long term (16H)
There are 32 reasons why Apex Processors are better than any other Nuclear Medicine Data Systems. This is reason Number 20.

With an apex rotating-gantry NM system, you will not need an extra ECT processor, it's built-in!

Elscint's apex line

Elscint has prepared a full-color booklet detailing all 32 reasons. Contact us today for your personal copy.
The same built-in APEX processor which controls gantry rotation also provides tomographic reconstruction on high-resolution 128² matrices – in just seconds. The APEX ECT processor obtains thallium cardiac sections using semipanoramic 180° anterior rotations. It reconstructs not only transverse slices, but also coronal, sagittal and general oblique views. Add outstanding linearity, uniformity, and Digital Guard™ auto-alignment of APEX processor-controlled gamma cameras, and two things become eminently clear: the APEX image – and the APEX image.

Apex ECT: Pacesetter of the Tomographic Era.

Elscint Inc. 930 Commonwealth Avenue, Boston, MA 02215, U.S.A. Call Toll Free: 800-343-9504.
Elscint European Operations, 40 Rue Jean Jaurès, 93170 Bagnolet, France. Tel: (01)362.13.05.
Cardiac Stress

Here is EDC’s Hi-Low Model 8430 Cardiac Stress Testing System with these features:

- UL Listed
- 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.
- Stands on Four Legs — Retracting Wheels.
The heart of the matter—quality and value

Thallium 201-Squibb®
Thallous Chloride Ti 201
For myocardial perfusion imaging

- Choice of quantities: 2.2 and 6.6 mCi at calibration time (noon Central Time)
- Precalibrated doses available
- Excellent images
- Can be consolidated with your Minitec® (Technetium Tc 99m) Generator and other Squibb products to save delivery charges
See your Squibb Representative for details or call toll-free 800-257-5181 (New Jersey 800-582-5913).
<table>
<thead>
<tr>
<th>Diagnostics Representatives</th>
<th>Special representatives with extensive training and experience in radiopharmaceuticals, contrast media and RIA who can provide your laboratory with many extra services: troubleshooting, technologist training, expediting of deliveries, and inventory checks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Squibb National Nuclear Medicine Management Seminars</td>
<td>The 2½-day seminar provides opportunity, ideas and techniques for nuclear medicine and clinical laboratory supervisors to enhance their managerial skills.</td>
</tr>
<tr>
<td>Technologist Education Plan</td>
<td>When spent Minitec® (Technetium Tc 99m) Generators are returned, Squibb puts money into customers' accounts for educational purposes.</td>
</tr>
<tr>
<td>Squibb National Nuclear Medicine Seminars</td>
<td>Education for technologists: 2½ days on in vivo procedures, 1½ days on in vitro procedures. Accredited by the Society of Nuclear Medicine Technologist Section, American Society of Radiologic Technologists, and American Society for Medical Technology for continuing education credit.</td>
</tr>
<tr>
<td>Medical Education</td>
<td>Squibb helps further medical education through its support of state and local nuclear medicine societies' meetings, medical symposia and scientific exhibits.</td>
</tr>
<tr>
<td>Customtec®</td>
<td>Computerized report of a laboratory's daily technetium Tc 99m needs.</td>
</tr>
<tr>
<td>Delivery</td>
<td>Reliable, fast delivery service from manufacturing facilities and distribution centers throughout the U.S.</td>
</tr>
<tr>
<td>Toll-Free Technical Customer Service</td>
<td>Trained personnel are available at Squibb headquarters to answer questions and give expert assistance when problems arise. Call 800-257-5181. In New Jersey, 800-582-5913.</td>
</tr>
</tbody>
</table>

**THALLIUM 201-SQUIBB® (Thallous Chloride Tl 201)**

**For Diagnostic Use**

**DESCRIPTION:** Thallium 201-SQUIBB (Thallous Chloride Tl 201) is supplied in isotonic solution as a sterile, nonpyrogenic diagnostic radiopharmaceutical for intravenous administration. The aqueous solution at calibration time contains 1 mCi/mi Thallous Chloride Tl 201 adjusted to pH 4.5-6.5 by the addition of hydrochloric acid and/or sodium hydroxide solution. It is made isotonic with 0.9% sodium chloride and is preserved with 0.9% benzyl alcohol. Thallium Tl 201 is cyclotron-produced with no carrier added. Radionuclidic purity at calibration is at least 97.0% Thallium Tl 201 with less than 0.25% Lead Pb 203, 1% Thallium Tl 202, and 1% Thallium Tl 200. The concentration of each radionuclidic contaminant changes with time.

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

**CONTRAINDICATIONS:** None known.

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

**PRECAUTIONS:** General — Data are not available concerning the effect on the quality of Thallium Tl 201 scans of marked alterations in the blood glucose, insulin, or pH (such as is found in diabetes mellitus). Attention is directed to the fact that thallium is a potassium analog, and since the transport of potassium is affected by these factors, the possibility exists that the thallium may likewise be affected. Data are not available concerning the effect of drug treatment (such as antihistamines and cimetidine, either alone or in combination).

A myocardial imaging study was unsuccessful in one clinical study involving a patient taking cortisone and cimetidine the day of the study.

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.

As in the use of any radioactive material, care should be taken with Thallous Chloride Tl 201 to minimize radiation exposure to the patient consistent with proper management and to ensure minimal exposure to occupational workers. This drug should not be used after the expiration date on the label. The expiration date will be six (6) days or less after the calibration date. Do not use if contents are turbid.

It is recommended that the product be administered close to calibration time to minimize the effect of higher levels of radionuclidic contaminant pre- and post-calibration.

**Careful Judgement**

No long-term animal studies have been performed to evaluate carcinogenic potential, mutagenicity potential, or whether Thallous Chloride Tl 201 affects fertility in males or females.

**Pregnancy Category C** — Adequate reproduction studies have not been performed in animals to determine whether the drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. Thallous Chloride Tl 201 should not be used in pregnant women except when benefits clearly outweigh the potential risks.

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

**Nursing Mothers** — It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, as a general rule nursing should not be undertaken when a patient is administered radioactive material.

**Pediatric Use** — Safety and effectiveness in children below age 18 have not been established.

**ADVERSE REACTIONS:** A single adverse reaction to Thallous Chloride Tl 201 has been reported consisting of hypotension accompanied by pruritus and rash which responded to antihistamines and steroids within one hour.

**HOW SUPPLIED:** Thallous Chloride Tl 201 is supplied in a 2.2 milliliter size and a 6.6 milliliter size. Each package contains one vial. The contents of the vial are radioactive. Adequate shielding and handling precautions must be maintained.

For full prescribing information, consult package insert.
CIS labels fibrinogen with Technetium 99m

Fibrinocis (TCK49)

- Human Fibrinogen labelled with 99mTc.
- High yield of labelling (more than 95%).
- Excellent In-Vivo stability between 6 and 24 H.
- Good preservation of physico-chemical and biological properties of the native fibrinogen.
- Very favourable dosimetry for the patient.
  - Imaging of very high quality.

The kit contains 5 vials.

Not available in U.S.A.

CIS is the first to offer you a human Fibrinogen kit labelled with Technetium 99m.
For superior SPECT imaging... Get the best camera and a computer of your choice.

High quality SPECT imaging starts with a superior gamma camera. Siemens offers you today's best—the high performance ZLC gamma camera. We'll provide you with a turnkey SPECT system which incorporates our proven ZLC cameras and a nuclear medicine computer of your choice.

The ZLC camera combines the mechanical stability and accurate rotational positioning of the Orbiter with unsurpassed detector linearity and uniformity—prerequisites for high resolution, artifact-free SPECT imaging.

ZLC cameras ensure user-friendly interface with contemporary nuclear medicine computers. Siemens will assure all service and application training with ADAC and MDS computers. And, of course, you can also choose the ZLC 3700 S or ZLC 7500 S camera with our ECT Processor.

To protect your investment, our SPECT systems are offered with comprehensive service programs backed by one of the industry's largest technical service organizations dedicated to nuclear medicine. For additional information on our SPECT systems, contact your local Siemens representative or:

Siemens Medical Systems, Inc.
Nuclear Medicine Division
186 Wood Avenue South
Iselin, NJ 08830. (201) 321-4500.

Siemens.
Meeting your diagnostic requirements...into the future.
Another innovation from Novo...
The Novo Cerebrograph® 32c
System for measurement of regional cerebral blood flow for use by the neurosurgeon, neurologist, nuclear medicine physician and psychiatrist

Applications
The Novo Cerebrograph® 32c quantifies various hemodynamic and functional changes in the brain through measurement of regional Cerebral Blood Flow (rCBF). The system's simplicity and accuracy make it a true clinical tool. And Novo, the leading rCBF systems innovator since 1966, has helped create a vast data pool for a broad range of applications. Useful in CVD, head trauma, migraine, dementia, pre- and post-op evaluation in vascular surgery. Also investigates neurotoxic effects of drugs and organic solvents; studies higher mental function and abnormality.

Features

Novo Diagnostic Systems
59 Danbury Road
Wilton, Ct. 06897
U.S.A.
203-762-240

NOVO

Novo Diagnostic Systems
A Division of Novo Industri A/S
Novo Allé
DK-2880, Bagsvaerd
Denmark
(02) 982333, Telex 37714

NV-1012

Volume 24, Number 4
SNM presents a new educational pamphlet that answers patients' most frequently asked questions about home care after receiving radioiodine treatment for thyroid conditions.

Prepared in collaboration with the U.S. Nuclear Regulatory Commission, this 8-page pamphlet outlines in easy-to-read language important precautions patients can follow to help reduce radiation exposure to others. It also contains a checklist that physicians can review with their patients to determine which guidelines are appropriate for them and how long they should be followed.

Health care professionals in private practice, hospitals, and clinics will find this pamphlet provides a brief, attractive, and inexpensive way to educate patients and their families about the importance and safety of proper health care.

ORDER FORM

Ordering Information:
30¢ per pamphlet
The minimum order accepted is 25 copies.
Note: Single copies are available for review
     @ $1.50 each.
(Prices include postage and handling.)

Prepayment required in U.S. funds drawn on U.S. banks only.
Check or purchase order must accompany all orders. Make checks payable to: The Society of Nuclear Medicine.

Prices are in U.S. dollars and subject to change without notice.

Please send me _____ copy(s) of
Guidelines for Patients Receiving
Radioiodine Treatment

Please Print:

Name

Address

SOCIETY OF NUCLEAR MEDICINE
Book Order Department, 475 Park Avenue South, New York, NY 10016
(212)889-0717
CIS DMSA: the winner!

DMSA (TCK-12)

CIS DMSA (TCK-12) is an excellent agent for morphologic and functional renal investigations:
- High affinity for renal cortex
- Very good renal uptake
- Excellent imaging
- No critical background
- 45° of the activity fixed after only two hours.

The kit contains five vials.

CIS has a complete range, think about DMSA.
You've heard a lot of talk about improvements in linearity...or uniformity...or resolution.

But the gain in one parameter is usually at the expense of others. In short—a compromise.

With Raytheon nuclear systems, there is no such compromise. All factors are optimized in a superbly balanced, thoroughly proven system. One that gives you a closer, more detailed view of every patient.

**A good head for numbers.**

Performance is, ultimately, a function of the detector head. And in our Step One gamma camera, Raytheon's technological expertise comes to the fore.

In the largest useful field of view, Raytheon uses a "honeycomb" array of 91 two-inch tubes. And couples it to a specially-designed ½-inch receptor crystal and 8-stage dynode PMT. Thus, your Raytheon nuclear system can record the full spectrum of static and dynamic studies...with optimized efficiency.

What's more, the system is ultra sensitive, extremely fast. A 1-million count image takes about one minute. That's up to 50% faster than other systems. And represents a considerable time savings for you.

**Triple-pulse analysis adds still more detail.**

The exclusive Raytheon detector head is interfaced with a specialized triple-pulse height detector. This advanced electronic system accepts peak pulses only and analyzes each one separately. So you can study up to three Ga67 photo peaks at one time...and know you've captured the most significant detail.

**A protected investment, too.**

The basic Raytheon nuclear system includes the Step One gamma camera and Step Two digital image format-
ter with remote control, patient data entry and exceptional information density.

Raytheon also offers the unique Micro-Blend TBI. With an image window far larger than other systems, each scanned sector is electronically blended with the others. The result is virtually distortion-free imaging—head to foot.

All Raytheon nuclear systems are designed to stand up to the heaviest case loads. Their technology and construction is based on more than 12 years of continuous, in-depth participation in nuclear medicine.

Why don’t you give a closer look at the systems that give you a closer look. Raytheon.

Call your Raytheon dealer. Or contact Raytheon Medical Systems, 2020 North Janice Avenue, Melrose Park, Illinois 60160. Phone (800) 323-0207, in IL (312) 865-2600. Telex: 923455.

© 1982 Raytheon, Inc.
We were first to make ECT practical...
By working closely with clinicians, we were able to introduce the MaxiCamera™ 400T as the first nuclear diagnostic system with tomographic capability. It effectively meets real clinical needs, such as better contrast enhancement with more sensitive transaxial images in liver and soft tissue studies, and positive identification of cardiac infarcts. And for greater productivity, it can perform the whole range of routine and specialized nuclear procedures, including single pass, whole body studies.

MaxiCamera 400A makes spatial distortion corrections practical.
Now you can achieve even better resolution, linearity and uniformity with the advanced MaxiCamera 400A with Autotune ZS. This camera automatically retunes each photomultiplier tube many times each second to provide the stable detector response necessary to make real time spatial distortion and energy corrections practical for an analog system. With no delays in your system’s operation, and no decrease in sensitivity.

Star computer provides automatic ECT data acquisition and analysis.
By adding the Star™ data acquisition system and tomographic software to your MaxiCamera 400T system you can have comprehensive ECT capability, with touch-button convenience. Camera movement and data acquisition are automatically controlled according to your specifications. And you can display reconstructions as transaxial, sagittal, coronal and oblique angle projections. The Star system also features a full range of automatic programs for routine and specialized liver and cardiac studies, which dramatically increase diagnostic information while saving you precious time.

For greater investment value, GE nuclear systems are designed for upgradeability. And backed by our worldwide service network and parts availability. With practical, proven nuclear imaging systems from a single source, your choice could be practically automatic.

Liver data shown in a transaxial, sagittal and coronal view projection. Fully automatic cardiac analysis with the P.A.G.E. software program.

Now we’ve made it practically automatic.
We bring good things to life.

GENERAL ELECTRIC
Clear-Pb™ Nuclear Medicine Mobile Barrier

- Permits unobstructed observation of patients.
- Made of rugged, shatterproof lead-acrylic.

The "Clear-Pb" Nuclear Medicine Mobile Barrier protects working personnel from radiation emitted by patients undergoing nuclear medicine exams. It features a large "Clear-Pb" lead-acrylic viewing panel that blocks nearly 90% of Tc-99m gamma rays. The panel is optically clear, distortion-free and shatter-resistant. Its attractive amber tint is easy on the eyes.

Viewing Panel: Made of distortion-free "Clear-Pb" Lead Acrylic. Lead equivalency 0.8 mm. Size 24" high x 36" wide x 18 mm thick.
Opaque Lower Panel: Contains 1/16" (1.5 mm) lead shielding. Size 34" high x 36" wide x 1" thick.
Overall Size: 58" high x 36" wide. Net 110 lbs.
56-602B  "Clear-Pb" Mobile Barrier $895.00

Clear-Pb™ Bench-Top Shield

- Permits distortion-free views of work area.
- Standard, Jumbo or Mini sizes.

Let the "Clear-Pb" Bench-Top Shield protect you from radiation exposure when working with radionuclides. It features a fully-transparent, lead-acrylic window that attenuates gamma radiation to your face and body while permitting crystal-clear views of your operations. The rugged, shatter-resistant viewing panel comes in standard or jumbo sizes and rests on sturdy clear-acrylic legs. For strength, protection and clarity, nothing beats a "Clear-Pb" lead-acrylic barrier.

<table>
<thead>
<tr>
<th>Nuclide</th>
<th>I-125</th>
<th>Xe-133</th>
<th>Co-57</th>
<th>Tc-99m</th>
<th>I-123</th>
<th>Ge-67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attenuation</td>
<td>99.99%</td>
<td>97.6%</td>
<td>99.8%</td>
<td>98%</td>
<td>99.5%</td>
<td>67%</td>
</tr>
<tr>
<td>Panel thickness</td>
<td>35 mm (1½&quot;)</td>
<td>Lead equiv. 1.5 mm (½&quot;)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
56-606B  Standard Bench-Top Shield, 18" high x 12" wide $295.00
56-607B  Jumbo Bench-Top Shield, 24" high x 15" wide $395.00
56-609B  Mini Bench-Top Shield, 12" high x 9" wide $195.00
COMMITTED TO THE FUTURE OF NUCLEAR MEDICINE

More Than Just The Leaders In Dose Calibrators... Capintec, Your Answer For Quality Assurance.

- The CRC®-50 Quality Assurance Center
  All the radionuclide dose calibration data you need is at your fingertips with the CRC-50. The compact modular system provides future dose planning, inventory control, and record keeping capabilities. You'll have push-button access to ten program modes, CRT display, both ticket and page-size reports plus a minicassette record — all together in an easy-to-operate, easy-to-own system.

- The CAP-MAC™ Moly Assay Canister
  A fully shielded method for molybdenum breakthrough assays. The CAP-MAC encloses the vial during "milking" of your technetium generator; during transport to the ionization chamber; during Mo99 and Tc99m activity measurement; and, finally, for safe removal from the chamber. It's safe — and simple.

- The Vanderbilt Cardiac Phantom (CP-201)
  The CP-201 provides unparalleled simulation of left ventricle and atrium geometry. It produces a variable heart-beat rate and assesses ejection fraction. It rotates to allow for exact determinations of wall motion. The Vanderbilt Cardiac Phantom is the new standard in total imaging system evaluation, including gated studies.

Contact the leader: A Capintec sales representative is ready to demonstrate the latest developments in nuclear medicine quality assurance technology.

CAPINTEC, INC.
6 Arrow Road • Ramsey, N.J. 07446
In N.J. 201-825-9500
Toll Free 800-631-3826
Telex 642375 CAPINTEC RASY
BRATTLE IS BACK... with the R-DETECT you've been waiting for.

MODEL 210

The Brattle R-Detect offers reliable, fully-automatic R-wave triggering, compatible with all nuclear medicine computers.

Features include:
- Selectable PVC rejection
- Digital heart rate readout
- Pacemaker pulse rejection
- Flashing LED to indicate each QRS
- LED indicating faulty electrode connection
- Analog ECG output

Model 211, in addition to the above features, has a strip chart recorder with event marker showing location of the R-Detect signal.

Medical Electronics Corporation
Brattle Division
335 Newbury Street
Boston, Massachusetts 02115
(617) 536-8300
MEDX responds to your clinical nuclear imaging needs with the broadest range of new and remanufactured cameras and upgrades available from any source. MEDX systems performance is equal to, or in many cases, superior to new camera competitive products. No matter what your criteria of value, you can find a MEDX system to satisfy your needs...and at a fraction of the cost.

Cost
Under the new Medicare guidelines, diagnostic capability is coupled with fiscal responsibility. It is imperative that consideration be given to maximize the cost/benefit ratio of price to performance. MEDX multi-purpose nuclear imaging systems deliver top-performance at a modest cost with absolutely no sacrifice in performance.

Overall Specifications
Advanced MEDX detector technology and high speed electronics developed primarily for the new LF-61 Large Field System are incorporated into our entire remanufactured product line. Our upgrade and factory remanufactured systems offer efficiency, high speed, resolution, and uniformity that far exceed original specifications.
Clinical Performance
The measure of any camera system is the quality of the final image. MEDX engineers design systems whose clinical performance is unparalleled in the industry. They are proven clinical systems, designed to perform in the clinical environment. Whatever your needs, in nuclear cardiology, or routine imaging, compare the performance of MEDX cameras.

Service
We guarantee next-day service anywhere in the U.S. by the most experienced service force in the industry ... a proven capability that is attested to by over 800 users.

MEDX is committed to serving the entire nuclear medicine community with products that perform. We are nuclear imaging equipment specialists attuned to your needs. Let us show you why . . .

MEDX is your logical choice for nuclear medicine instrumentation.

MEDX INC.
501 South Vermont Street
Palatine, Illinois 60007
312/991-0660
800/323-3847
Telex: 206689
Cardiac STRESS SYSTEMS at almost ½ PRICE of others!

SUPINE SYSTEMS

UPRIGHT SYSTEMS

CONVERTIBLE SYSTEMS

- Compatible with every major ergometer on the market
- Modular designs simplify system updating
- Heavy-duty welded-steel frames for extra stability

INDEX TO ADVERTISERS

ADC MEDICAL
Farmingdale, NY ........................................... 45A
AMPEREX
Hicksville, NY ............................................. 17A
BAIRD CORPORATION
Bedford, MA ................................................ 14A
BENEDICT NUCLEAR PHARMACEUTICALS
Golden, CO .................................................. 46A, IBC
CAPINTEC, INC.
Montvale, NJ ................................................. 33A
CLINICAL ASSAYS
Cambridge, MA .............................................. 6A
DIVERSIFIED DIAGNOSTIC PRODUCTS, INC.
Houston, TX .................................................. 15A
EDC MEDICAL IMAGING CORPORATION
Lowell, MA ................................................... 20A
ELSCINT, LTD.
Haifa, Israel ............................................... 18A, 19A
G.E. MEDICAL SYSTEMS
Milwaukee, WI .............................................. 30A, 31A
Gelman SCIENCES, INC.
Ann Arbor, MI ............................................... 45A
ILLINOIS IMAGING ELECTRONICS
Wheaton, IL ................................................... 5A
INTERNATIONAL CIS
Cedex, France ............................................. 23A, 27A
MEDICAL ELECTRONICS, INC.
Boston, MA ................................................... 35A
MEDI-PHYSICS, INC.
Emeryville, CA ............................................. IFC, 1A, 8A, BC
MEDX COMPANY
Palantine, IL .................................................. 36A, 37A
NOVO MEDICAL
Wilton, CT ..................................................... 16A, 25A
NUCLEAR ASSOCIATES/VICTOREEN
Carle Place, NY ............................................ 32A
NUCLEAR DATA MEDICAL PRODUCTS
Ann Arbor, MI ............................................... 12A, 38A, 39A
NUCLEAR PACIFIC
Seattle, WA .................................................... 39A
NUCLEAR PHARMACY, INC.
Albuquerque, NM ........................................... 10A
PICKER INTERNATIONAL
Northford, CT ............................................... 13A
RADX CORPORATION
Houston, TX .................................................. 3A
RAYTHEON MEDICAL SYSTEMS
Melrose Park, IL ........................................... 28A, 29A
SIEMENS CORPORATION
Iselin, NJ ..................................................... 24A
SNM PLACEMENT
New York, NY .............................................. 41A, 42A, 43A
E.R. SQUIBB & SONS, INC.
Princeton, NJ ................................................ 21A, 22A
TELEDYNE ISOTOPES
Westwood, NJ ................................................ 2A
Look into this syringe shield!
Its high visibility lead glass offers the radiation protection of solid lead.

Offering optically clear, 360 degree visibility, Nuclear Pacific syringe shields are safe, light-weight and easy to handle. Equally important, their professional appearance reduces patient anxiety.

Used extensively by hospitals world-wide, their anti-roll, no-leak design reduces radiation exposure of 99mTc by a factor of 6 HVL. Models for 1cc, 3cc, 5cc, and 10cc syringes with or without Luer Locks are available.

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

Nuclear Pacific, Inc.

1. Radiation shielding eyeglasses
2. Syringe Shields
3. Vial shields
4. Radiation dose shield

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

ND Medical presents a family of video film formatters. These include a one-on-one imager, a six-on-one imager, and a nine-on-one imager. The ND Medical Video Formatters are in compact, space-saving cabinets and are considerably less expensive than all other commercially available formatters.

We offer the most complete line of nuclear stress equipment in the industry. Complete literature on request.

ND Medical Products

ND MEDICAL PRODUCTS  221 FELCH STREET
ANN ARBOR, MICHIGAN 48103  (313) 665-9777
SUBSIDIARY OF
NUCLEAR DATA INC  GOLF & MEACHAM RDS.
SCHAUMBURG, ILLINOIS  (312) 884-3636
NEW FROM SNM

DIGITAL IMAGING
Clinical Advances in Nuclear Medicine

6 x 9" softcover; 324 pages
$25.00 members; $35.00 non-members

Digital-imaging computer systems are now used clinically in nuclear medicine departments around the world. To keep the nuclear medicine community abreast of exciting new developments in this area, the Society of Nuclear Medicine has prepared Digital Imaging: Clinical Advances in Nuclear Medicine.

Compiled from the 1982 symposium of the Computer and Instrumentation Councils, this volume covers a broad range of topics related to digital imaging such as renal function, time-domain imaging, cardiac imaging, tomography, optical memories, and system architecture.

The book will appeal to a broad audience of practitioners in nuclear medicine and radiology. Clinicians and scientists, as well as those individuals involved in industry and academia, will benefit from this detailed examination of the current and future state-of-the-art in digital imaging.

Ordering Information:
Add $2.50 postage and handling for each book ordered. Pre-payment required in U.S. funds drawn on U.S. banks only. No foreign funds accepted. For payments made in U.S. dollars, but drawn on a foreign bank, add a bank processing fee of $1.50 for Canadian bank drafts or $20.00 for all other foreign bank drafts. Check or purchase order must accompany all orders. Make checks payable to: The Society of Nuclear Medicine, 475 Park Avenue South, New York, NY 10016. Prices are subject to change without notice.

Low-Level Radiation Effects: A Fact Book

Edited by
A. Bertrand Brill, M.D.

"Only when information issued in a publication such as this becomes widespread and understood can rationality prevail in the public's attitude toward low-level radiation."
—from the Foreword by, Rosalyn Yalow, Ph.D, Nuclear Medicine Pioneer, Nobel Laureate

This book represents a sincere attempt to provide an unbiased, up-to-date source of knowledge regarding the potential long- and short-term effects of radiation exposure to humans.

Consisting of tables, figures, and data obtained from scientific and government agencies such as the NCRP, ICRP, UNSCEAR, and NAS, this volume examines radiation doses received by people from various sources, data on their somatic and genetic effects, comparative risks, and risk perceptions. Information on the effects observed in plant and animal studies is also included.

Because radiation exposure is an important and controversial topic, a tremendous amount of material on the subject is available. This fact book contains a concise reference list for readers wishing to obtain additional, or more detailed, information.

Prepared in looseleaf format to facilitate periodic additions, the book will prove indispensable to a wide range of physicians, scientists, technologists, and students involved in the field.

8½ x 11" looseleaf format; 155 pages; ISBN 0-932004-14-8
Price: $25.00, plus $2.50 per book for postage and handling.

ORDER NOW!
Prepayment required in US funds drawn on US banks only. No foreign funds accepted. Check or purchase order must accompany all orders. Make checks payable to: The Society of Nuclear Medicine, 475 Park Avenue South, New York, NY 10016. Prices are subject to change without notice.
**PLACEMENT**

**POSITIONS OPEN**

**NUCLEAR MEDICINE RESIDENCIES.** One or two years training ABR and ABNM approved available July 1, 1983 at the University of Missouri Health Sciences Center, Harry S. Truman Memorial Veterans Hospital, Columbia, Missouri. Contact: Richard A. Holmes, M.D., Chief, Nuclear Medicine Service (ID), VA, Hospital Drive, Columbia, MO 65201 or phone (314)444-2511, x6765.

**NUCLEAR MEDICINE RADIOLOGIST.** Physician wanted to join 4-man Pediatric Radiology Staff at University of Michigan. Expected to direct nuclear medicine section opening in the fall of 1983. Private practice opportunity in primary pediatric teaching hospital. Contact Dr. Edward B. Franklin, University School of Medicine. Clinical, research, and teaching responsibilities. Must be Board certified in radiology (even better if pediatric radiologist) and certified or eligible in nuclear medicine or nuclear radiology. Respond with curriculum vitae to: T. Stovis, M.D., Dept. of Radiology, Children's Hospital of Michigan, 5901 Beaumont Blvd., Detroit, MI 48201.

**NUCLEAR MEDICINE TECHNOLOGIST.** Position now available for an experienced Nuclear Medicine Technologist certified by SNM or registered technologist in a progressive outpatient nuclear medicine laboratory in a large city in a large medical center in the Sun Belt. Knowledge of radioimmunoassay and experience in all modalities of nuclear medicine. Excellent salary and benefits. For more information contact: Personnel, Sacred Heart Medical Center, W. 101 Eighth Avenue, TAF-CS, Spokane, WA 99220, or call (509)435-3911. E.O.E.

**NUCLEAR MEDICINE TECHNOLOGISTS.** Ft. Lauderdale, Florida. Florida Medical Center, Chief, Nuclear Medicine Department. 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 radiochemistry laboratory. Excellent starting salary and benefits. Interested, inquire to: Chief Technologist, Department of Nuclear Medicine, Florida Medical Center, 500 West Oakland Park Blvd., Fort Lauderdale, FL 33313. (305)785-6000.

**NUCLEAR MEDICINE TECHNOLOGIST.** Two permanent full-time positions at VA Medical Center, Portland, OR, an 850-bed general medical and surgical hospital. Starting salary $11,138. For information or application contact or call: Mr. Crawford: (206)696-4061 ext. 301. Equal Employment Opportunity Employer.

**NUCLEAR MEDICINE TECHNOLOGIST.** To join our expanding Nuclear Medicine Technologist staff at University of Michigan. Excellent opportunity for a Certified Nuclear Medicine Technologist. Experience in nuclear cardiology preferred. Full benefits. Salary commensurate with experience. Please send resume to: Personnel Officer, University of Michigan Medical Center, 475 Park Ave. So., New York, NY 10016.

**NUCLEAR MEDICINE PHYSICIAN.** Experienced Nuclear Medicine Physician in expanding progressive private in vivo and in vitro NM outpatient laboratory. Applicants should be Board certified by ABNM or board eligible in Nuclear Medicine with preferably two years internal medicine residency training. Medical school association or affiliation possible if desired. Please send resume to: Box 401, Societate of Nuclear Medicine, 475 Park Ave. So., New York, NY 10016.

**NUCLEAR CARDIOLOGY TECHNOLOGIST.** Progressive Idaho hospital in four-season, southeast Idaho seeks a nuclear specialist with at least one year's nuclear cardiology experience and a basic cardiology background, who will use an MDS nuclear cardiology computer in a new lab. This full-time, day position involves interpretation of tests with opportunity to fine skiing, camping, and fishing. Candidates looking for a rewarding career opportunity should send resumes to: Wanda Sorensen, Idaho Falls Consolidated Hospitals, P.O. Box 2077, Idaho Falls, ID 83401. EOE.

**CHIEF NUCLEAR MEDICINE TECHNOLOGIST.** Perform and assume responsibility for in vivo and in vitro medical physics programs. Licensed, professional registration, instrumentation quality control, radiopharmacy quality control, and specialized computer operations. Technical resource to hospital faculty and departmental technologists in interpretation and manipulation of procedure protocols. Requires Bachelor level in science field plus completion of Nuclear Medicine Technologist training program. Minimum three years experience in nuclear medicine. Supervise 4 employees. Hospital is located in Fresno, California, and offers a starting salary of $26,130 per year. Send this ad and your resume to: Job #8267, P.O. Box 865, Sacramento, CA 95804, not later than April 30, 1983.

**NUCLEAR MEDICINE TECHNOLOGIST.** Montrose Memorial Hospital, a 72-bed acute care facility is seeking a registered technologist. Located in Western Colorado, with unsurpassed recreational opportunities, including excellent fishing and hunting in the region. Excellent salary and benefits are offered. Applicants with diagnostic ultrasound experience preferred. Write: Nuclear Medicine Department, Montrose Memorial Hospital, 400 South 3rd Street, Montrose, CO 81401. (303)249-2211, ext. 357. Equal Opportunity Employer.

**NUCLEAR MEDICINE TECHNOLOGIST.** Full-time dayshift position available at 552-bed acute care medical center. Use of three computers, portable gamma camera, emission tomography, active radiology program, and additional facilities. For information contact: Personnel, Sacred Heart Medical Center, W. 101 Eighth Avenue, TAF-CS, Spokane, WA 99220, or call (509)435-3911. E.O.E.

**NUCLEAR MEDICINE TECHNOLOGISTS.** Ft. Lauderdale, Florida. Florida Medical Center, Chief, Nuclear Medicine Department. 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 radiochemistry laboratory. Excellent starting salary and benefits. Interested, inquire to: Chief Technologist, Department of Nuclear Medicine, Florida Medical Center, 500 West Oakland Park Blvd., Fort Lauderdale, FL 33313. (305)785-6000.

**NUCLEAR MEDICINE TECHNOLOGIST.** Two permanent full-time positions at VA Medical Center, Portland, OR, an 850-bed general medical and surgical hospital. Starting salary $11,138. For information or application contact or call: Mr. Crawford: (206)696-4061 ext. 301. Equal Employment Opportunity Employer.

**NUCLEAR MEDICINE TECHNOLOGIST.** To join our expanding Nuclear Medicine Technologist staff at University of Michigan. Excellent opportunity for a Certified Nuclear Medicine Technologist. Experience in nuclear cardiology preferred. Full benefits. Salary commensurate with experience. Please send resume to: Personnel Officer, University of Michigan Medical Center, 475 Park Ave. So., New York, NY 10016.

**NUCLEAR MEDICINE TECHNOLOGIST.** To join our expanding Nuclear Medicine Technologist staff at University of Michigan. Excellent opportunity for a Certified Nuclear Medicine Technologist. Experience in nuclear cardiology preferred. Full benefits. Salary commensurate with experience. Please send resume to: Personnel Officer, University of Michigan Medical Center, 475 Park Ave. So., New York, NY 10016.

**NUCLEAR MEDICINE PHYSICIAN.** Experienced Nuclear Medicine Physician in expanding progressive private in vivo and in vitro NM outpatient laboratory. Applicants should be Board certified by ABNM or board eligible in Nuclear Medicine with preferably two years internal medicine residency training. Medical school association or affiliation possible if desired. Please send resume to: Box 401, Societate of Nuclear Medicine, 475 Park Ave. So., New York, NY 10016.

**NUCLEAR CARDIOLOGY TECHNOLOGIST.** Progressive Idaho hospital in four-season, southeast Idaho seeks a nuclear specialist with at least one year's nuclear cardiology experience and a basic cardiology background, who will use an MDS nuclear cardiology computer in a new lab. This full-time, day position involves interpretation of tests with opportunity to fine skiing, camping, and fishing. Candidates looking for a rewarding career opportunity should send resumes to: Wanda Sorensen, Idaho Falls Consolidated Hospitals, P.O. Box 2077, Idaho Falls, ID 83401. EOE.

**CHIEF NUCLEAR MEDICINE TECHNOLOGIST.** Perform and assume responsibility for in vivo and in vitro medical physics programs. Licensed, professional registration, instrumentation quality control, radiopharmacy quality control, and specialized computer operations. Technical resource to hospital faculty and departmental technologists in interpretation and manipulation of procedure protocols. Requires Bachelor level in science field plus completion of Nuclear Medicine Technologist training program. Minimum three years experience in nuclear medicine. Supervise 4 employees. Hospital is located in Fresno, California, and offers a starting salary of $26,130 per year. Send this ad and your resume to: Job #8267, P.O. Box 865, Sacramento, CA 95804, not later than April 30, 1983.

**NUCLEAR MEDICINE TECHNOLOGIST.** To join our expanding Nuclear Medicine Technologist staff at University of Michigan. Excellent opportunity for a Certified Nuclear Medicine Technologist. Experience in nuclear cardiology preferred. Full benefits. Salary commensurate with experience. Please send resume to: Personnel Officer, University of Michigan Medical Center, 475 Park Ave. So., New York, NY 10016.

**NUCLEAR MEDICINE PHYSICIAN.** Experienced Nuclear Medicine Physician in expanding progressive private in vivo and in vitro NM outpatient laboratory. Applicants should be Board certified by ABNM or board eligible in Nuclear Medicine with preferably two years internal medicine residency training. Medical school association or affiliation possible if desired. Please send resume to: Box 401, Societate of Nuclear Medicine, 475 Park Ave. So., New York, NY 10016.

**NUCLEAR CARDIOLOGY TECHNOLOGIST.** Progressive Idaho hospital in four-season, southeast Idaho seeks a nuclear specialist with at least one year's nuclear cardiology experience and a basic cardiology background, who will use an MDS nuclear cardiology computer in a new lab. This full-time, day position involves interpretation of tests with opportunity to fine skiing, camping, and fishing. Candidates looking for a rewarding career opportunity should send resumes to: Wanda Sorensen, Idaho Falls Consolidated Hospitals, P.O. Box 2077, Idaho Falls, ID 83401. EOE.
NUCLEAR MEDICINE TECHNOLOGISTS:

Have you seen the New audiovisual programs from the Society of Nuclear Medicine?

SNM 205
Cat Scanning—A Correlation With Nuclear Medicine Studies

The basic principles of computed x-ray tomography are presented in this audiovisual program and illustrated with explanatory diagrams and scans. The complementary role of nuclear medicine is emphasized with multiple clinical examples. This program is designed for the nuclear medicine technologist in training as well as in practice and the medical student interested in nuclear medicine.

SNM 210
Writing Scientific Papers

The former editor of the Journal of Nuclear Medicine Technology discusses the preparation of a manuscript for scientific publication in accordance with the guidelines required by most scientific journals. The proper use of support illustrations, tables and bibliography are illustrated with good as well as poor examples. This audiovisual program is designed for the nuclear medicine technologist and resident physician interested in the publication of their work.

Each audiovisual program consists of a series of slides and a tape cassette for use in any automatic or manually operated slide projector/tape player.

Please send me a free brochure (or call (312)-943-0450)
Please send me the following programs

| SNM 201 | $50 | Quantity | Programs are $50.00 each ($60.00 outside the U.S.). |
| SNM 202 | $50 | | EVALUATING |
| SNM 203 | $50 | | TRAUMA may be purchased as a set for $360.00 ($432.00 outside the U.S.). |
| SNM 204 | $50 | | |
| SNM 205 | $50 | | |
| SNM 206 | $50 | | |
| SNM 207 | $50 | | |
| SNM 208 | $50 | | |

SNM 206
Evaluating Trauma with Radionuclide Techniques

Severe trauma has become a frequent occurrence of modern life. The traditional means of diagnostic evaluation, the x-ray, has been replaced in many instances by newer imaging modalities. This series of audiovisual programs provides a comprehensive review of the role of nuclear medicine in the traumatized patient. The advantages of nuclear medicine include its noninvasiveness, cost effectiveness, ability to visualize the entire organ or organ system and its accuracy. The functional aspects of nuclear medicine offer dynamic angiographic displays and complement the anatomic aspects of other diagnostic modalities such as ultrasound and computed tomography.

These programs are designed for the senior nuclear medicine technologist, the resident physician in training and the general practitioner in nuclear medicine. The philosophical approach to the severely traumatized patient, techniques of examination and the clinical interpretation of typical images are emphasized with numerous diagrams, graphs, and scintigraphs.

SNM 201 RADIONUCLIDE APPROACH TO TRAUMA
SNM 202 IATROGENIC ALTERATIONS IN RADIO-PHARMACEUTICAL BIODISTRIBUTION
SNM 203 PERIPHERAL VASCULAR TRAUMA
SNM 204 LUNG TRAUMA
SNM 206 LIVER—Spleen TRAUMA
SNM 207 HEAD TRAUMA
SNM 209 BONE AND SOFT TISSUE TRAUMA
SNM 211 RENAL TRAUMA

Make check payable to FOTO-COMM CORP.
Send all orders to:
Society of Nuclear Medicine
c/oFoto-Comm Corp.
215 W. Superior St.
Chicago, Illinois 60610

NAME _________________________
RADIOLOGY
College of Medicine and Medical Sciences
King Faisal University
Dammam, Saudi Arabia

The Department of Radiology at King Faisal University announces immediate openings and invites applications from qualified men and women.

PREREQUISITES: Applicants must be Members or Fellows of one of the Royal Colleges of Radiology or have American Boards of Radiology or the equivalent and a minimum of two years university teaching experience with special expertise in nuclear medicine, ultrasound and special procedures.

Salaries are highly competitive and negotiable. Contracts are for one year and renewable. Instruction is in English.

Benefits include furnished housing, air tickets to and from Saudi Arabia once per year for a family of four, a 60-day paid vacation, generous luggage overweight allowance and educational allowance for up to four children. No Saudi tax.

Please send curriculum vitae with contact address and telephone numbers and the names and addresses of three references to:
Dr. Tawfik Tamimi
Dean, College of Medicine and Medical Sciences
KFSU Recruiting Office
c/o J.R. Recruiting Office
King Faisal University
2425 West Loop South, Suite 540
Houston, Texas 77027

GIVE TO
PROJECT HOPE
1958-1983
Twenty-five years of improving world health through education
You Can’t Discover A Great Career Without Looking Into It.

Finding the right career takes more than a list of potential employers. It takes an inventory of your specialties and strengths to determine your personal and professional goals. You have to know what you’re looking for. When you know what it takes to have a great career, look into Shands Hospital at the University of Florida.

The Challenge Of Exceptional Patients.
As the major teaching hospital and referral center of the Southeast, Shands has diverse and challenging patients who require exceptional care. Innovative treatments and procedures. A wide variety of clinical specialties and specialists.

An Environment Of Fine Minds In Your Specialty.
Our affiliation with the University of Florida expands the traditional health care team. You work closely with an experienced and innovative faculty, and improve your knowledge and skill. You’ll teach and you’ll learn. You’ll consult with other professionals and have a critical impact on patient care.

The Support Of Superb Technology: From New To Tried And True.
At Shands, we’re constantly improving the quality of our care. Testing new procedures. Innovating and applying the latest equipment. Our outlook is to the future-of-the-art of health care. And our technology is second to none.

At Shands, yesterday’s research is saving lives today.

As the pacesetter of Florida’s hospitals, Shands offers high pay with a low cost of living, excellent fringe benefits and an environment conducive to quality health care.

Gainesville combines the ambiance of country living with the stimulation of a University town. At Shands you can focus on a great career.

Call us today at (904) 392-5985, or write us: Employment Coordinator, Box J-337, Shands Hospital at the University of Florida, Gainesville, Florida, 32610.
Gelman's **Instant TLC:**

**A cut above the rest**

Gelman's ITLC is the thin layer chromatography medium that you can cut. Use an individual strip to eliminate waste, or a special shape to concentrate substances.

Glass microfibre sheets are impregnated with an adsorbent, to give you the accuracy of glass with the convenience of paper. Get colorimetric, fluorescent, or radioactive results—3-5 times faster than with conventional TLC.

Six reasons to choose ITLC:
- uses less solvent than other TLC methods
- contains no organic binders
- lets you chromagenically develop by dipping or spraying
- offers reduced drying times
- so thin it can be used in many scanning instruments
- easier to store than glass plates

Gelman ITLC is available through: American Scientific Products, Curtin Matheson Scientific, Fisher Scientific, or VWR Scientific. For additional technical literature, contact Gelman Sciences.

Gelman Sciences
600 S. Wagner Rd., Ann Arbor, Michigan 48106

---

**For the Love of Life**

St. Jude wants to give children more tomorrows.

For information on how you can help this life-saving research continue, please write St. Jude Children's Research Hospital, 505 N. Parkway, Box 3704, Memphis, Tennessee 38103.

*and the hope of tomorrow*

Danny Thomas, Founder

---

**OVER 200 REASONS THAT YOU ARE RIGHT!!**

**THYROID UPTAKE SYSTEMS**

**EXCLUSIVES**

1. "STATE OF THE ART" SUPER STABLE SPECTROMETER/SCALER SYSTEM ALLOWS MANUAL OR AUTOMATIC OPERATION
2. DUAL DETECTOR SELECTION SYSTEM UTILIZING INDIVIDUAL PREAMPLIFIERS ALLOWS INSTANT DETECTOR CHANGEOVER FROM PROBE TO WELL WITHOUT RECALIBRATION
3. UNIQUE UNIVERSAL SWIVEL MOTION ENABLES YOU TO ACHIEVE ANY PATIENT/DETECTOR GEOMETRY AND POSITIONING NOT POSSIBLE WITH OTHER SYSTEMS.
4. PRECISE COUNTER-BALANCE OF THE DETECTOR ARM, ALLOWS FINGER-TIP POSITIONING AND ELIMINATES THE USUAL "EVER-FAIL" LOCKS.
5. DOUBLE CABLE DETECTOR SUPPORT ELIMINATES THE DANGER OF A PATIENT ACCIDENT.
6. TOTAL MOBILITY AND STORAGE IN AN AREA OF LESS THAN 24" x 24" ADD VERSITITY TO THE SYSTEM.

ADD THAT HALF DOZEN REASONS TO THE MORE THAN 200 SATISFIED USERS OF ADC MEDICAL'S 1115 AND 1115Z THYROID UPTAKE SYSTEMS AND YOU KNOW YOU HAVE MADE THE RIGHT CHOICE!

FOR ADDITIONAL INFORMATION CALL OR WRITE US

ADC Medical
400 Smith Street, Farmingdale, N.Y. 11735
(516) 732-9655
**Sodium Iodide I 123**

**Diagnostic—Capsules for Oral Administration**

**Description:** BNPI Sodium Iodide I 123 (NaI) for diagnostic use is supplied in capsules for oral administration. The capsules are available in a strength of 200 microcuries (uCi) Iodine 123 at time of calibration.

The I 123 utilized in the preparation of BNPI's Sodium Iodide I 123 capsules contains 1.9% or less I 125 as the only detectable radionuclidic impurity at time of calibration. At time of expiry, the capsules contain not less than 91.2% I 123, not more than 8.4% I 125 and not more than 0.4% all other radionuclides.

**Indications and Use:** Administration of Sodium Iodide I 123 is indicated as a diagnostic procedure to be used in evaluating thyroid function and/or morphology.

**Contraindications:** To date there are no known contraindications to the use of Sodium Iodide I 123 capsules.

**Warnings:** Females of childbearing age and children under 18 should not be studied unless the benefits anticipated from the performance of the test outweigh the possible risk of exposure to the amount of ionizing radiation associated with the test.

**Precautions:** Pregnancy Category C. Animal reproduction studies have not been conducted with Sodium Iodide I 123. It is also not known whether Sodium Iodide I 123 can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Sodium Iodide I 123 should be given to a pregnant woman only if clearly needed. It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when Sodium Iodide I 123 is administered to a nursing woman.

Safety and effectiveness in children have not been established.

**Adverse Reactions:** Although rare, reactions associated with the administration of Sodium Iodide isotopes for diagnostic use include, in decreasing order of frequency, nausea, vomiting, chest pain, tachycardia, itching skin, rash and hives.
Ours

- Purity  No interfering radionuclidic contaminants.
- Dosimetry With comparable administered activity, less than one-half the radiation dose to the thyroid.
- Useful Life  Expiration time is 30 hours after time of calibration.
- Image Quality  Images retain high quality throughout the useful life of the agent.

The Image of Excellence Begins with Benedict Nuclear

Sodium Iodide I 123 is the first radiopharmaceutical to be commercially distributed by Benedict Nuclear Pharmaceuticals, Inc. And our first is the finest.

We are a company with a sole purpose—to develop and make available the highest quality radiopharmaceuticals in the world. And though our name may be new, the names of our scientists, researchers, technicians and management are known and respected throughout the field of nuclear medicine.

As advocates of quality studies, we share your concerns and welcome your inquiries. We invite you to get to know Benedict Nuclear so you can experience the finest right from the start.

BNPI Sodium Iodide I 123

Dosage and Administration: The recommended oral dose for the average patient (70 kg) is 100–400 uCi. The lower part of the dosage range (100 uCi) is recommended for uptake studies alone, and the higher part (400 uCi) for thyroid imaging. The individual patient dose should be measured by a suitable radionuclide calibration system (dose calibrator) immediately prior to each administration. The determination of I 123 concentration in the thyroid gland may be initiated at six hours after administering the dose and should be measured in accordance with standardized procedures.

Radiation Dosimetry: A comparison of the estimated absorbed radiation dose to the thyroid of an average patient (70 kg) from an oral dose of 100 uCi of BNPI Sodium Iodide I 123 (p. 5n), Commercial (p. 3n) Sodium Iodide I 123 or Sodium Iodide I 123 at Time of Calibration (TOC) is shown below:

<table>
<thead>
<tr>
<th>Target Organ</th>
<th>Maximum Uptake (%)</th>
<th>Absorbed Dose (rads/100 uCi TOC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thyroid</td>
<td>15</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Table:<br>

<table>
<thead>
<tr>
<th>Target Organ</th>
<th>Maximum Uptake (%)</th>
<th>Absorbed Dose (rads/100 uCi TOC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thyroid</td>
<td>15</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>2.9</td>
</tr>
</tbody>
</table>

References:


How Supplied: BNPI Sodium Iodide I 123 is supplied as capsules for oral administration in a strength of 200 uCi at time of calibration.
**Indium Oxine In 111**

**CAUTION:**
NEW DRUG LIMITED BY FEDERAL LAW TO INVESTIGATIONAL USE.

**A STERILE, APYROGENIC SOLUTION**
Contains: Indium Oxine In 111, 0.05 mg Oxyquinoline, 0.05 ml alcohol.

- In 111 activity per vial: 1mCi at noon PST, day of calibration
- Specific Concentration: 20mCi/ml
- Volume per vial: 0.05ml
- Radiochemical purity: not less than 90%
- Radionuclidic Purity and Identity at Calibration:
  - In-111 not less than 99.0%

---

**MPI Indium Chloride In 111**

**Indium Chloride In 111**
Radiochemical

**CAUTION:**
FOR MANUFACTURING, PROCESSING, REPACKING, OR IN THE PREPARATION OF A NEW DRUG OR NEW ANIMAL DRUG LIMITED BY FEDERAL LAW TO INVESTIGATIONAL USE.

Each lot is tested for sterility following release. The manufacturing system is periodically tested for apyrogenicity.

- In 111 activity per vial: 3.0mCi
- Specific Concentration: 2.0mCi/ml
- Volume per vial: 1.5ml
- Radiochemical purity: not less than 90%
- pH: 1.0-3.0
- Radionuclidic Purity and Identity at Calibration:
  - In-111: not less than 99.0%
  - In-114: not more than 0.1% (1μCi/mCi In 111)
  - Zn-65: not more than 0.1% (1μCi/mCi In 111)
- Total chloride as sodium chloride: 0.7-0.9%

---

For More Information, Please Call (415) 652-7650
Inside California Toll Free (800) 772-2477 • Outside California Toll Free (800) 227-0492.

*Now available from MPI to investigators used under the following conditions: A. In vitro testing; B. Laboratory animals; C. Radioactive Research Committee 21 CFR 361.1; D. IND holders; MPI is not sponsoring any clinical investigation for this product.*