

Heavyweight



**CintiChem[®] Technetium 99m Generators
Are The Heaviest You'll Find—
On Purpose**

Your Safety Is Our Concern, Too

Technetium 99m Generators from CintiChem, Inc. have 3.77 inches of lead surrounding the column for maximum radiation protection. The secondary shield adds 5/8" more lead to make our generators safer yet. And only MPI Generators offer depleted uranium shielding in higher calibrations, designed to maximize radiation protection, convenience and reduce costs. With 20 sizes and 2 calibration days, we can meet virtually every need.

Convenience is also designed INTO every MPI Generator. It is the only generator with rapid, easy horizontal elution via a shielded elution port. The simple, one-step elution reduces work time while eliminating direct eye exposure during the elution process. Eluate sterility is assured by the 0.22 micron filter on the terminal fluid line and an autoclaved column.

And all CintiChem Technetium 99m Generators from Medi-Physics incorporate the following important advantages:

- **A NEW STERILE NEEDLE** is utilized for each elution, reducing the chances of a septic or pyrogenic situation occurring in routine clinical usage.
- **5cc, 10cc AND 20cc EVACUATED ELUTION VIALS** are available, allowing you to optimize the elution concentration to meet your needs.
- **RIGID QUALITY CONTROL TESTING**, which includes an elution check on each Generator, assures that it meets our rigid internal specifications. The assurance that 20 years experience in nuclear medicine brings.
- **ACCESSIBLE CUSTOMER SERVICE** on toll free telephone numbers. Our service personnel have in depth backgrounds in research, development, technical and clinical applications in nuclear medicine.

We are concerned about your safety. That will be evident when you receive your first CintiChem generator from MPI.

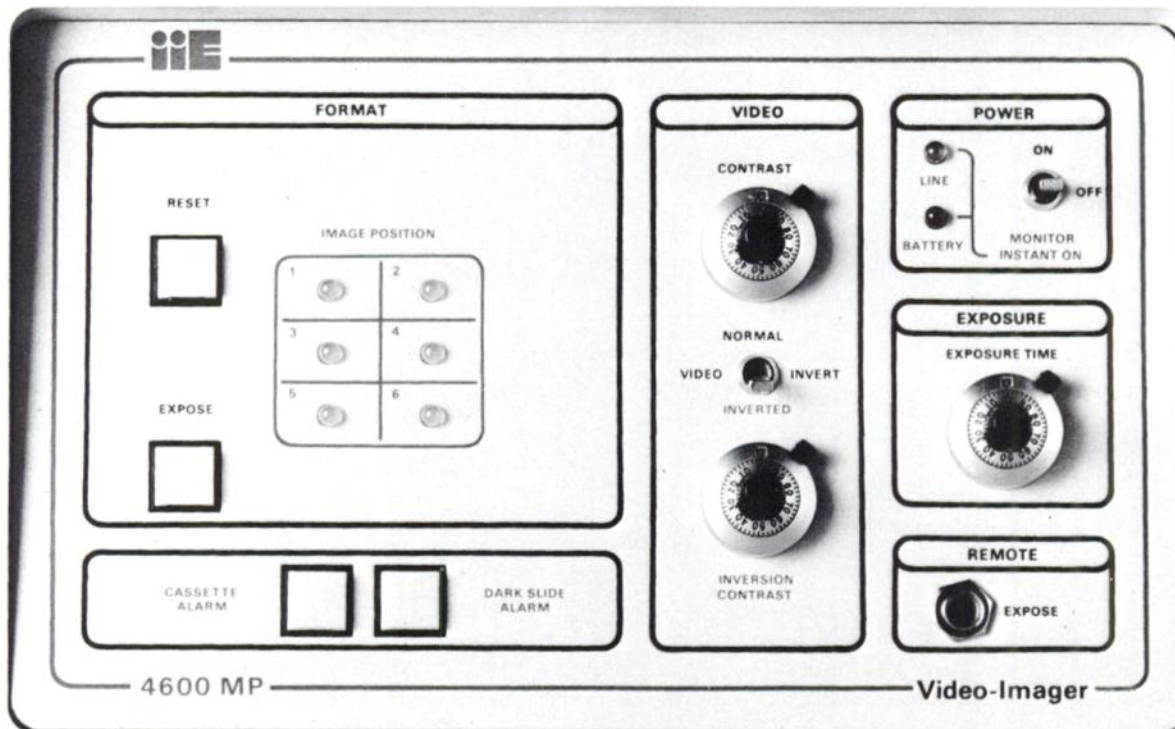
medi+physics™

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CintiChem® Technetium Tc99m Generators are jointly manufactured by Union Carbide Corporation and CintiChem, Inc.
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In which range is Gastrin test sensitivity most important?



normal

questionable

abnormal

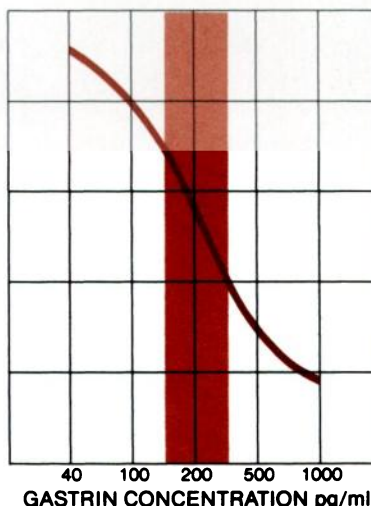
The answer is "questionable."

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.

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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



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CLINICAL ASSAYS
DIVISION OF TRAVENOL LABORATORIES, INC.

Thallous Chloride Tl 201

Thallous Chloride Tl 201

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

DESCRIPTION: Thallous Chloride Tl 201 is supplied in isotonic solution as a sterile, nonpyrogenic diagnostic radiopharmaceutical for intravenous administration. Each unit dose contains 1 milliliter and each milliliter contains 2 millicuries of Thallous Chloride Tl 201 at calibration time. pH adjusted to 5.0-8.0 with hydrochloric acid and/or sodium hydroxide. Contains no bacteriostatic preservative. Thallium Tl 201 is cyclotron produced and is essentially carrier-free. Radionuclidic purity at calibration time is at least 98.0% with less than 1.0% Thallium Tl 200, 1.0% Thallium Tl 202 and 0.2% Lead Pb 203. The concentration of each radionuclidic contaminant changes with time.

INDICATION AND USAGE: Thallous Chloride Tl 201 may be used in cardiac imaging to define the extent 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: When studying patients suspected or known to have myocardial infarction or ischemia, 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

Do not use after the expiration time and date (4 days after calibration time) stated on the label.

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

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

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

Thallous Chloride Tl 201 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 patient consistent with proper patient management.

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.

Carcinogenesis, Mutagenesis, Impairment of Fertility

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

Animal reproduction studies have not been conducted with Thallous Chloride Tl 201. It is also not known whether Thallous Chloride Tl 201 can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Thallous Chloride Tl 201 should be given to a pregnant woman only if clearly needed.

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 Thallous Chloride Tl 201 is administered to a nursing woman.

Pediatric Use

Safety and effectiveness in children have not been established.

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

HOW SUPPLIED: Thallous Chloride Tl 201 is supplied as a sterile, nonpyrogenic, isotonic solution in unit dose vials containing 1 milliliter. Each milliliter contains 2 millicuries of Thallous Chloride Tl 201 at calibration time. Contains no bacteriostatic preservative.

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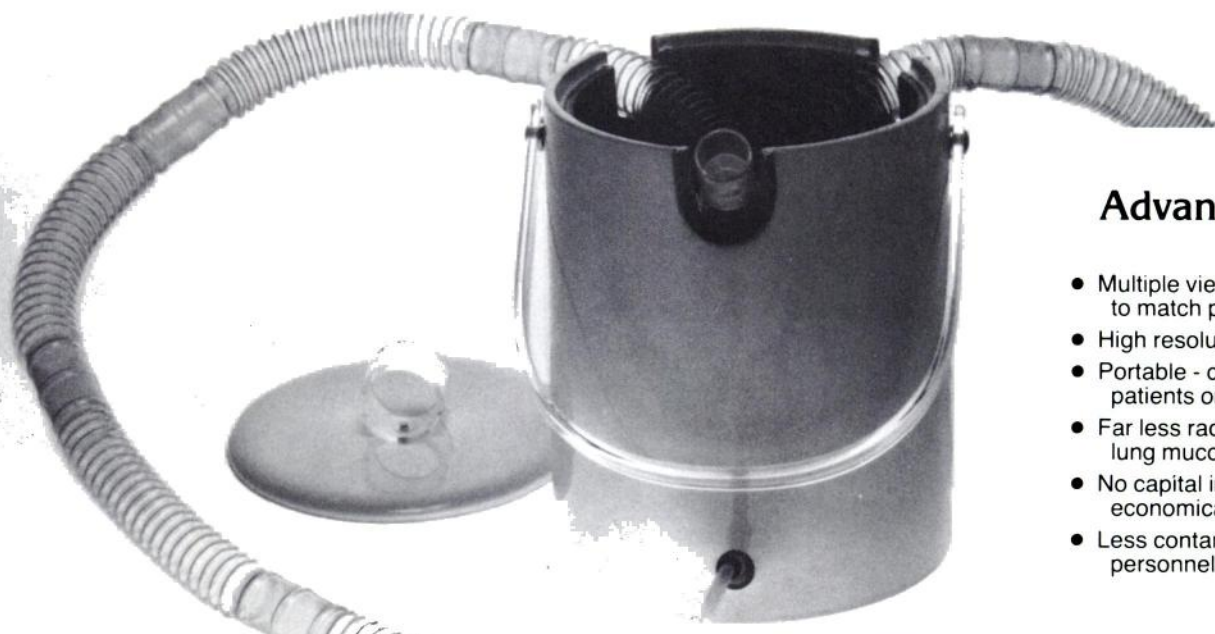
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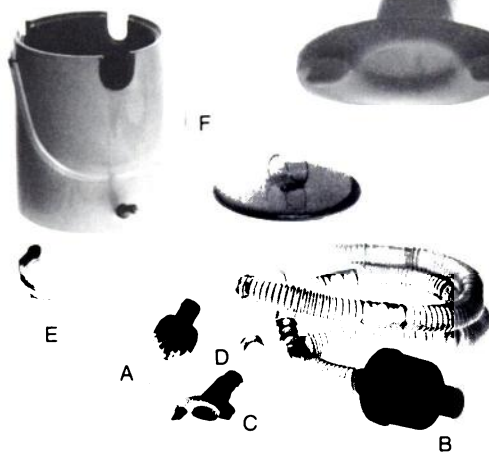
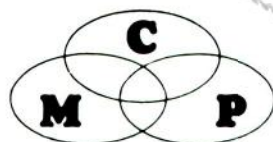
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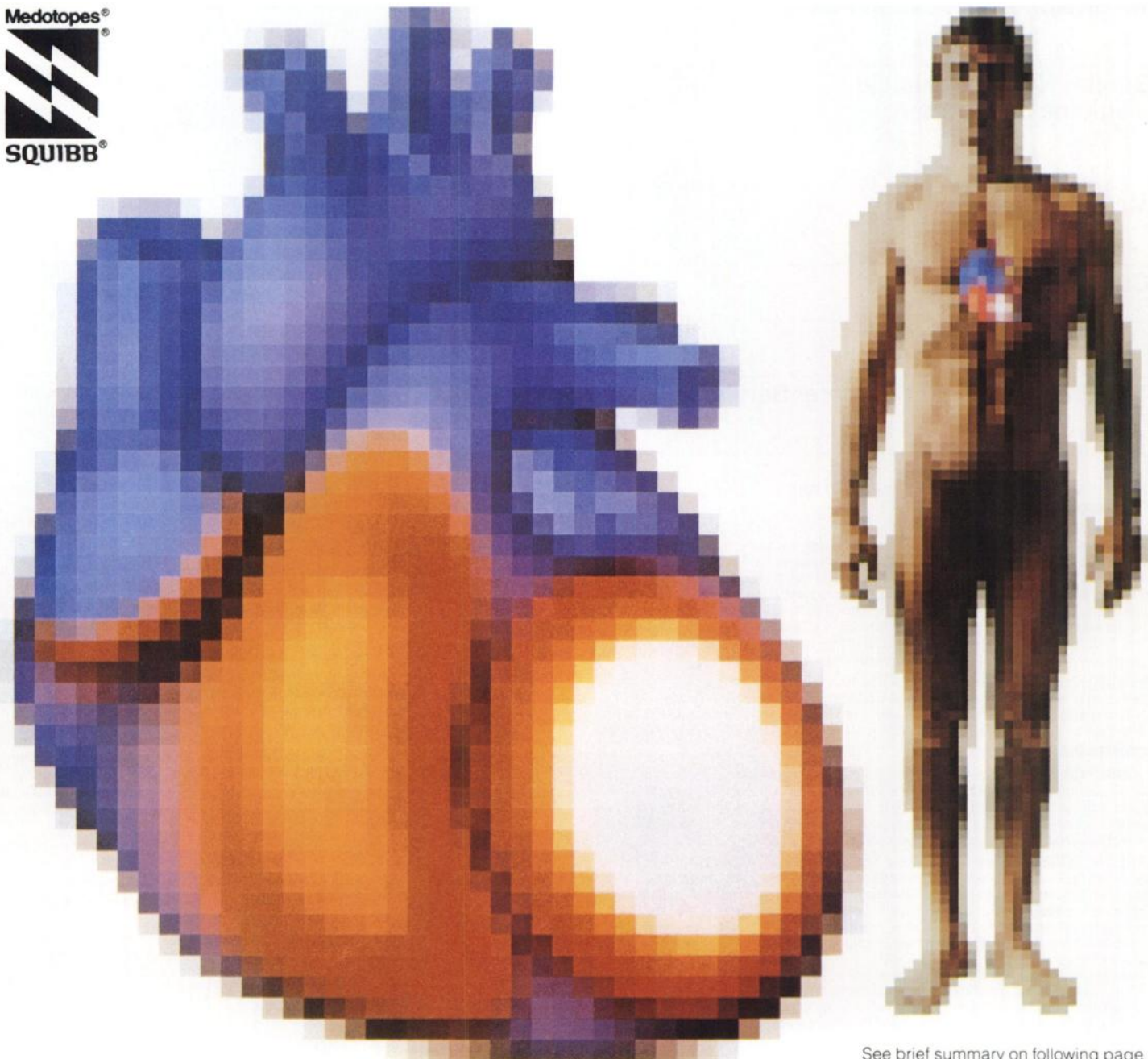
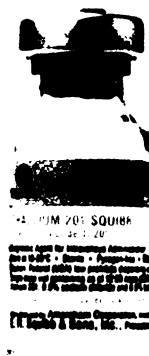
Thallium 201-Squibb®

Thallos 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

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See brief summary on following page.

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Squibb National Nuclear Medicine Management Seminars	The 2½-day seminar provides opportunity, ideas and techniques for nuclear medicine and clinical laboratory supervisors to enhance their managerial skills.
Technologist Education Plan	When spent Minitec® (Technetium Tc 99m) Generators are returned, Squibb puts money into customers' accounts for educational purposes.
Squibb National Nuclear Medicine Seminars	Education for technologists: 2½ days on <i>in vivo</i> procedures, 1½ days on <i>in vitro</i> 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.
Medical Education	Squibb helps further medical education through its support of state and local nuclear medicine societies' meetings, medical symposia and scientific exhibits.
Customtec®	Computerized report of a laboratory's daily technetium Tc 99m needs.
Delivery	Reliable, fast delivery service from manufacturing facilities and distribution centers throughout the U.S.
Toll-Free Technical Customer Service	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.

THALLIUM 201-SQUIBB® (Thallous Chloride TI 201) For Diagnostic Use

DESCRIPTION: THALLIUM 201-SQUIBB (Thallous Chloride TI 201) is supplied in isotonic solution as a sterile, nonpyrogenic diagnostic radiopharmaceutical for intravenous administration. The aqueous solution at calibration time contains 1 mCi/ml Thallous Chloride TI 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 TI 201 is cyclotron-produced with no carrier added. Radionuclidic purity at calibration is at least 97.0% Thallium TI 201 with less than 0.25% Lead Pb 203, 1% Thallium TI 202, and 1% Thallium TI 200. The concentration of each radionuclidic contaminant changes with time.

INDICATIONS AND USAGE: Thallous Chloride TI 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 TI 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

TI 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.

Carcinogenesis — No long-term animal studies have been performed to evaluate carcinogenic potential, mutagenicity potential, or whether Thallous Chloride TI 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 TI 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 TI 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 TI 201 is supplied in a 2.2 millicurie size and a 6.6 millicurie 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.

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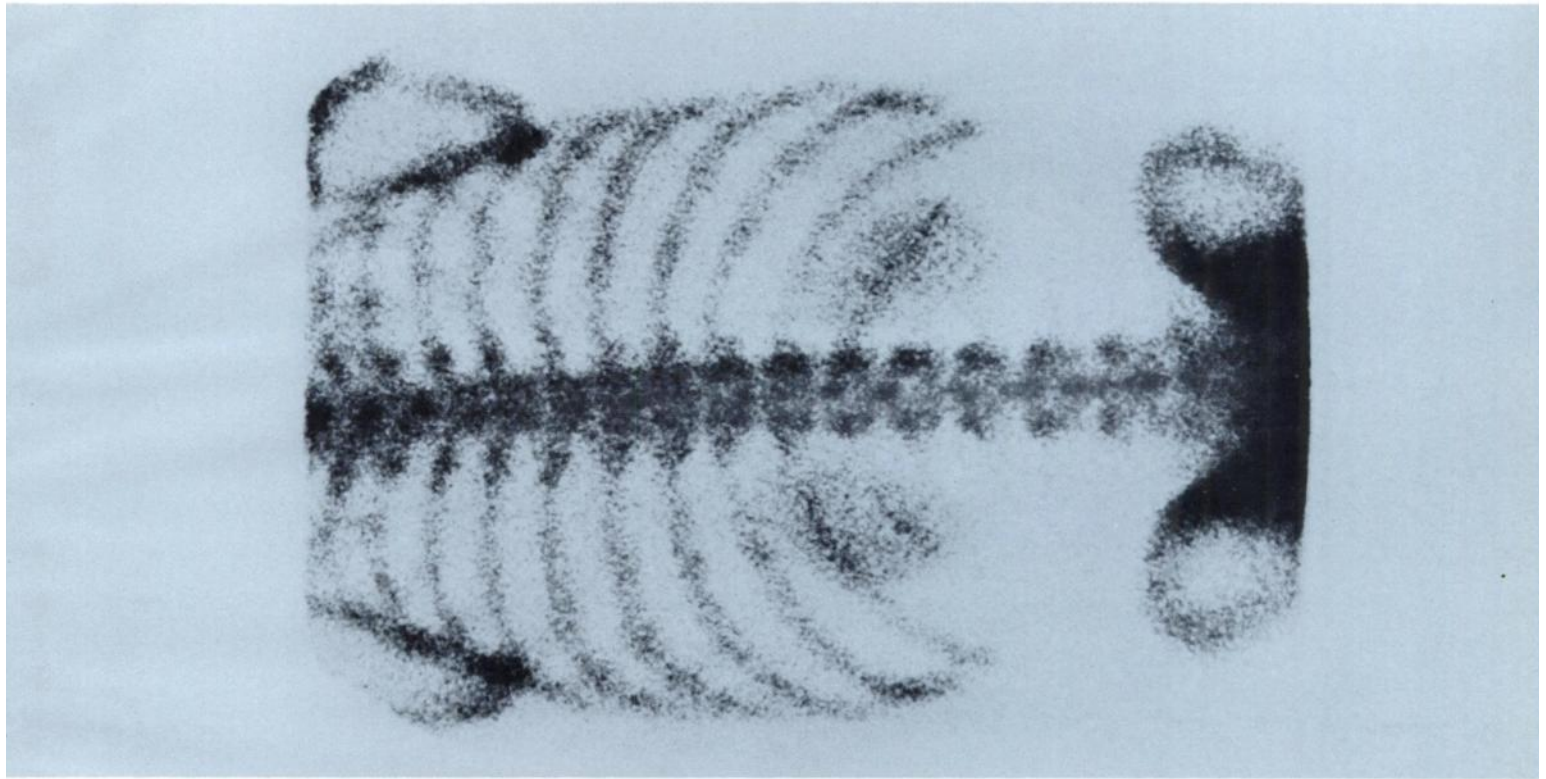
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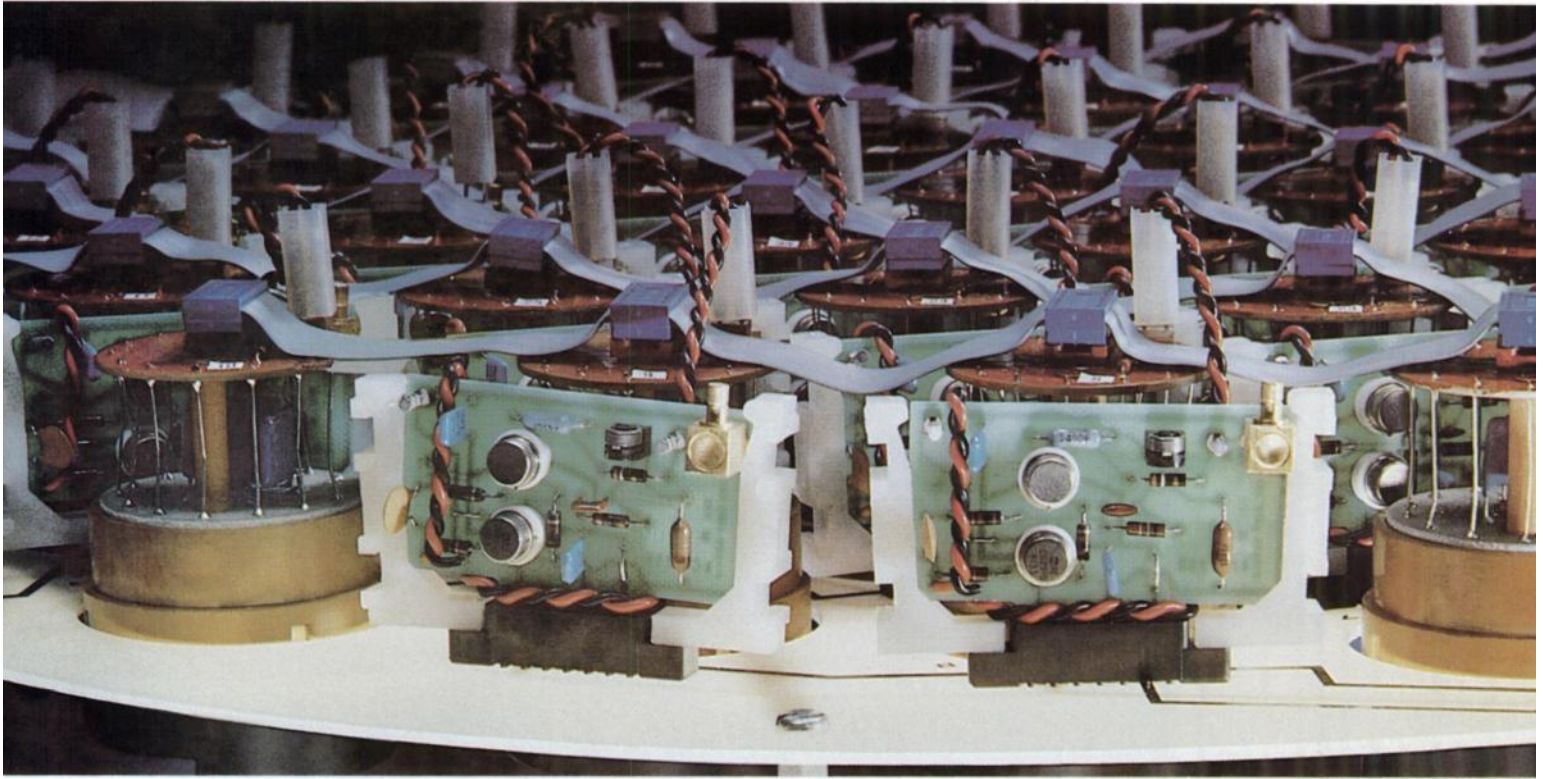
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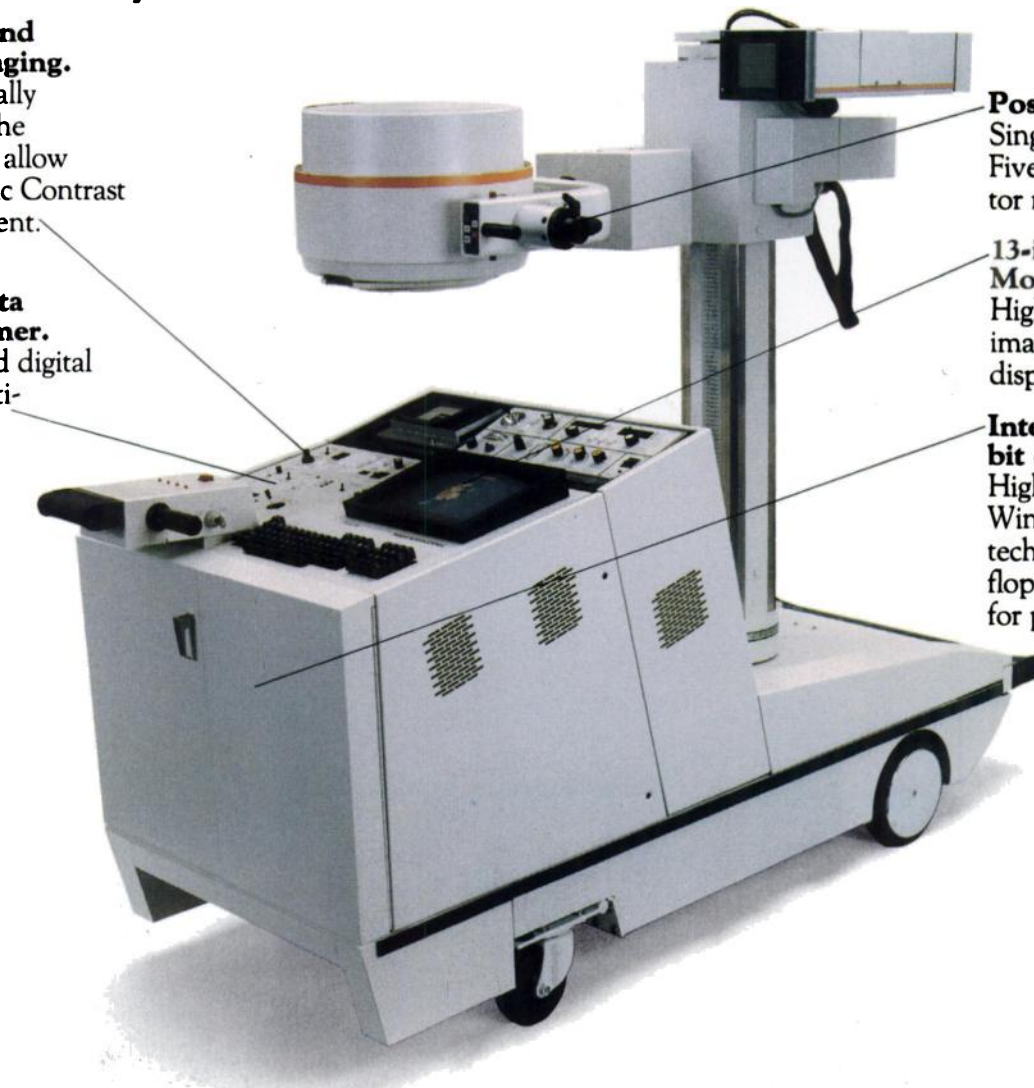
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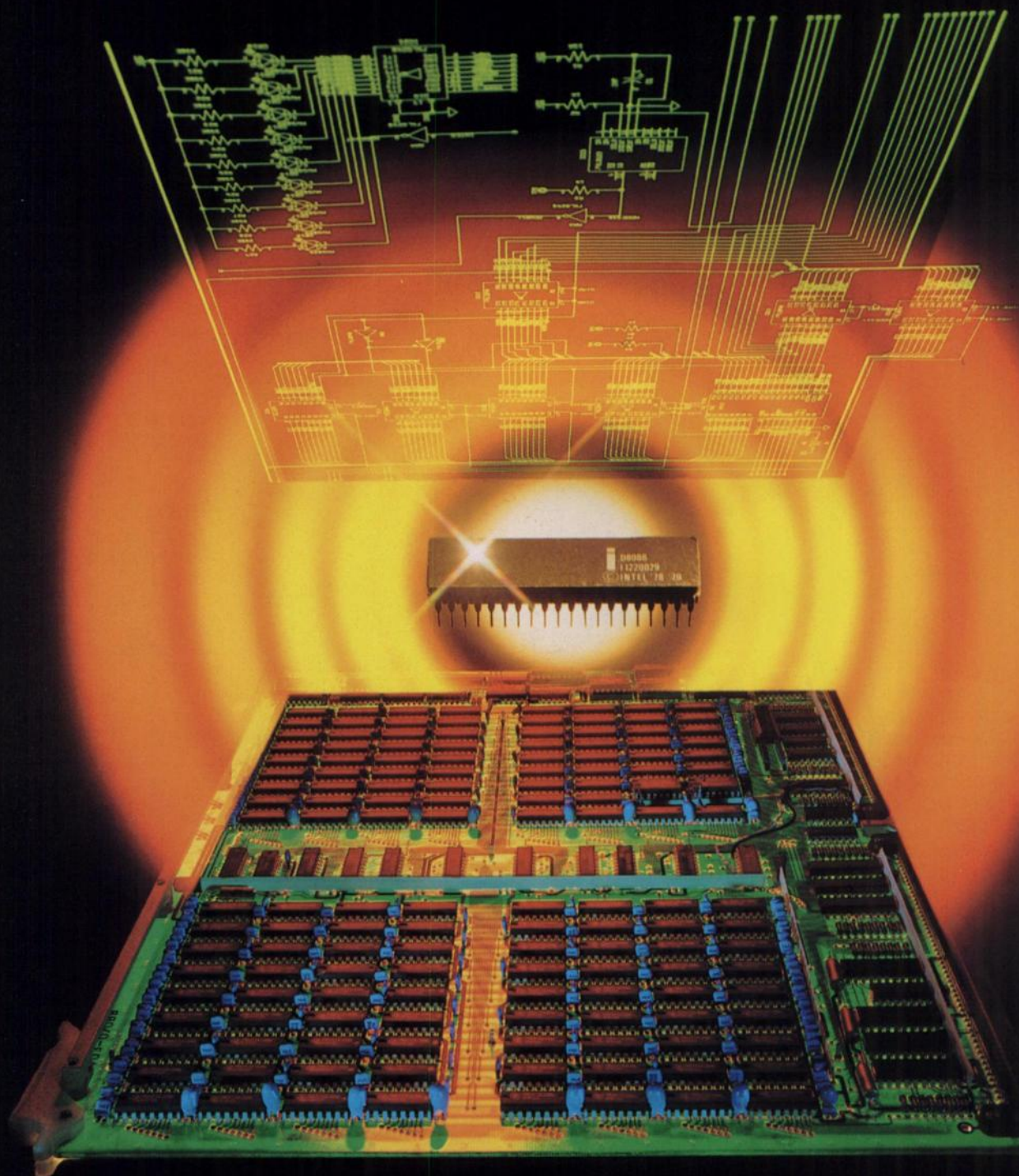
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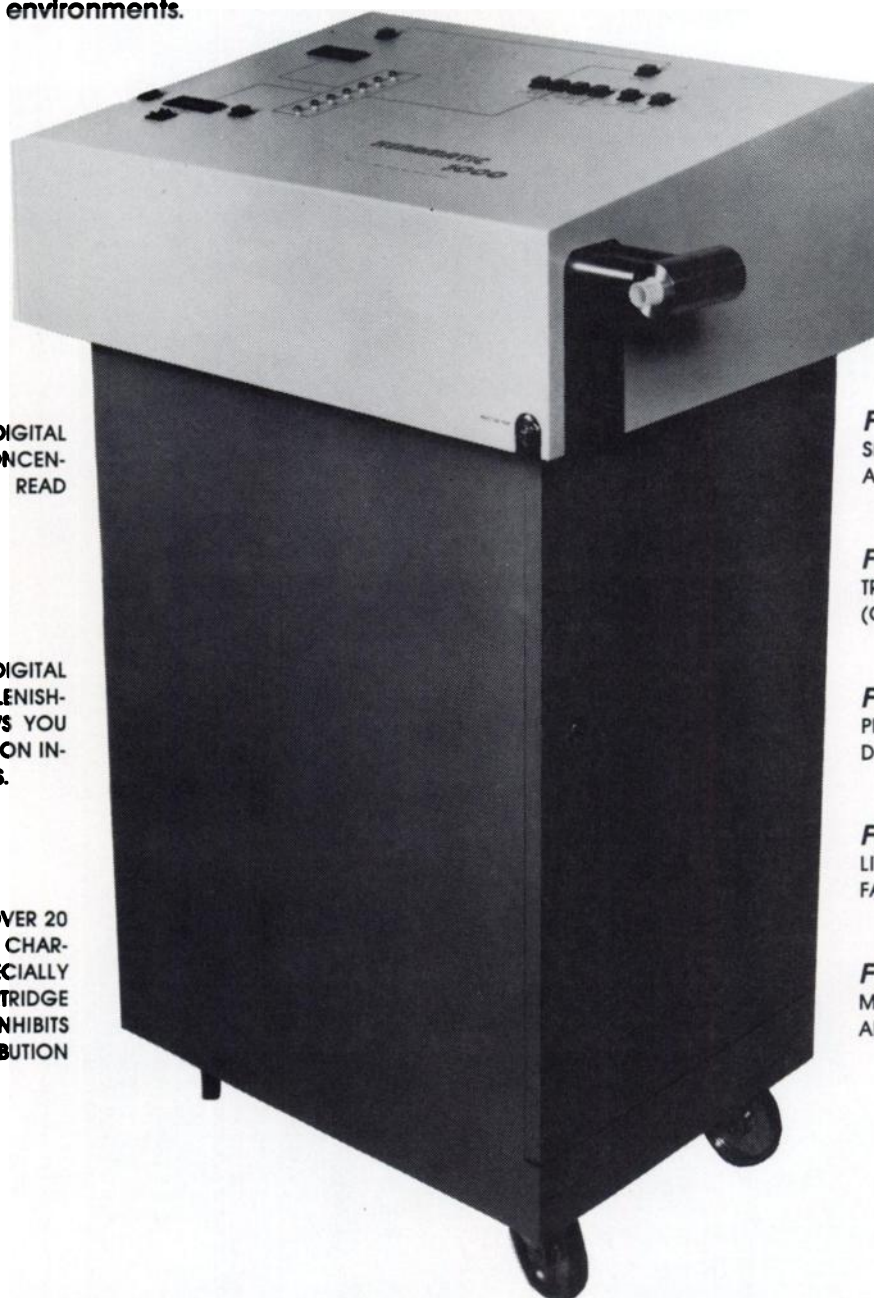


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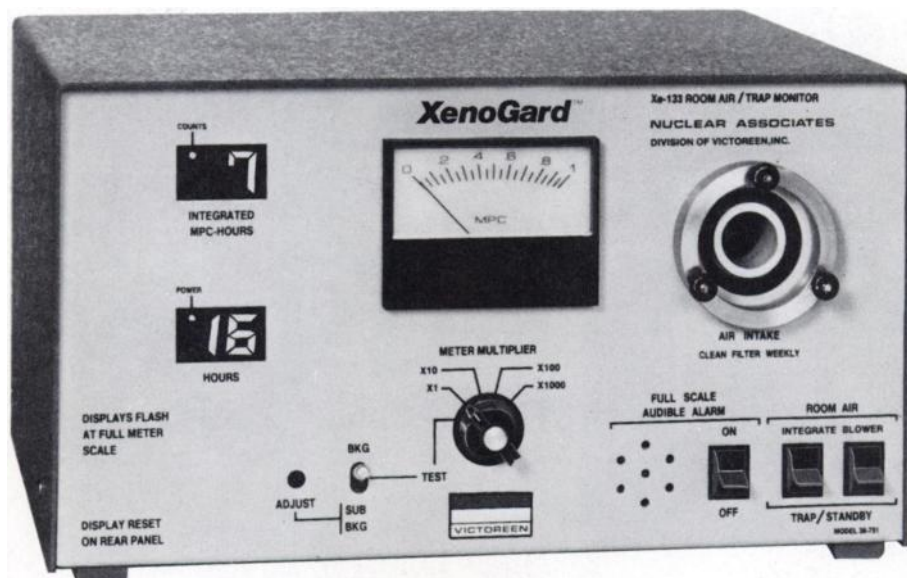
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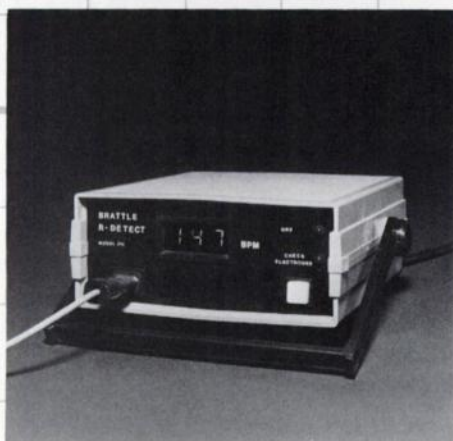
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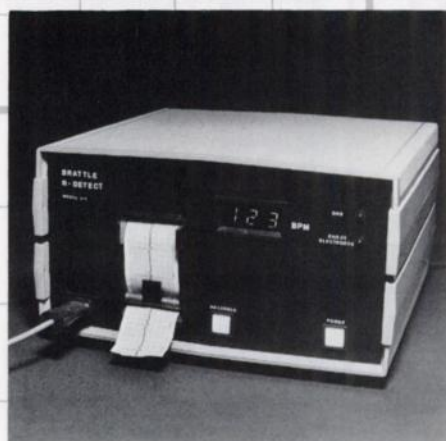
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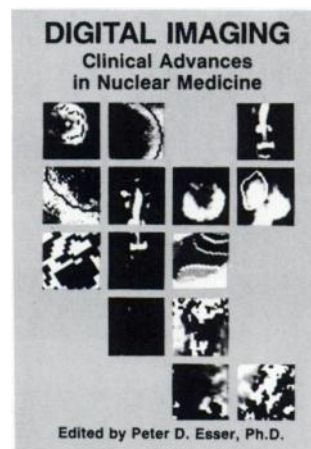
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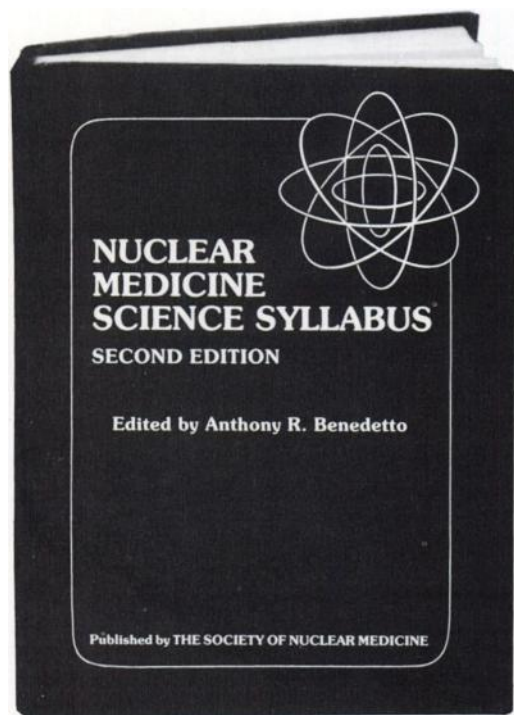
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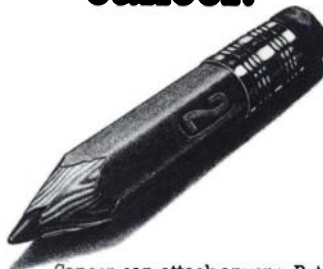
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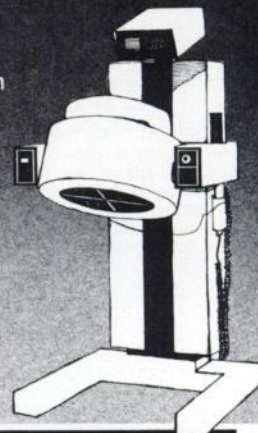
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Requests for further information should be directed to:

John A. Burdine, MD, Chief
or Paul H. Murphy, PhD, Training Coordinator
Nuclear Medicine Section, Department of Radiology
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1984

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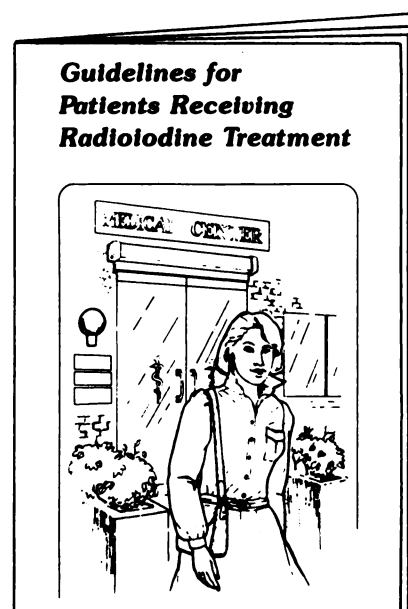
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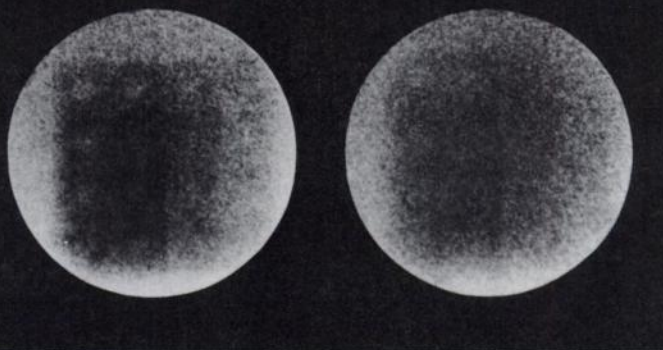
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Time of Calibration 24 Hours Post TOC
Low Energy Pinhole Collimator (Picker)
(p, 2n) Commercial I 123

Hines, H.H., Lagunas-Solar, M: Comparison of Scintillation Camera Images for I 123 Produced by (p, 2n) and (p, 5n) Reactions. J Nucl Med 23:P121, 1982 (Sci Exhibit).

Brief Summary—for complete prescribing information consult package insert.

Sodium Iodide I 123

Diagnostic—Capsules for Oral Administration

Description: BNPI Sodium Iodide I 123 ($\text{Na } ^{123}\text{I}$) 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

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

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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.

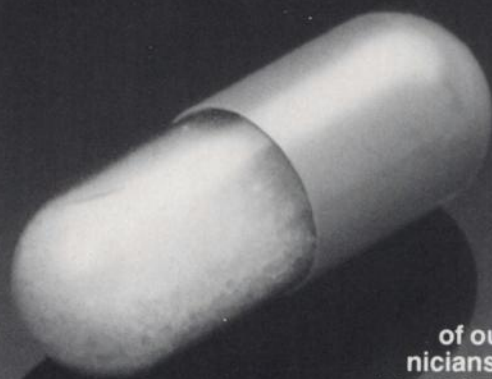
Safety and effectiveness in children have not been established.

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.

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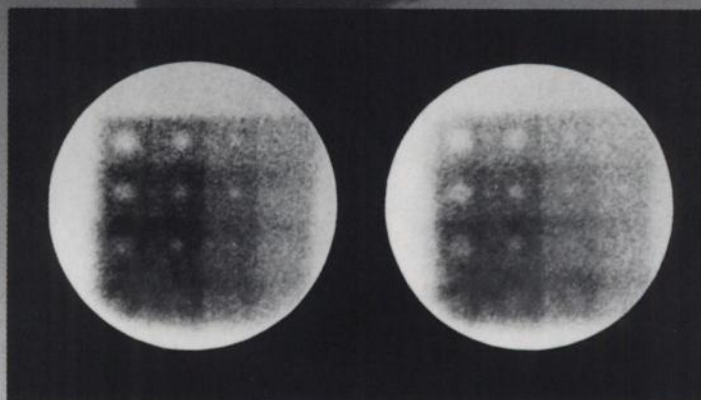
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Time of Calibration 24 Hours Post TOC
Low Energy Pinhole Collimator (Picker)
(p, 5n) BNPI I 123



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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 radioactivity 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, 2n) Sodium Iodide I 123 or Sodium Iodide I 131 at Time of Calibration (TOC) is shown below:¹

Target Organ	Absorbed Dose (rads/100 uCi TOC)			
	Maximum Thyroid Uptake (%)	Sodium Iodide I 123		Sodium Iodide I 131
		BNPI (p, 5n)	Commercial (p, 2n)	
Thyroid	5	0.5	1.2	26.0
	15	1.6	3.6	80.0
	25	2.9	6.0	130.0

¹Reference: MIRD Dose Estimate Report No. 5 "Summary of Current Radiation Dose Estimates to Humans From ¹²³I, ¹²⁴I, ¹²⁵I, ¹²⁶I, ¹³⁰I, ¹³¹I, and ¹³²I Sodium Iodide." J Nucl Med 16:857-60, 1975.

Special Consideration: Radiopharmaceuticals should be used only by individuals who are qualified by training and experience in the safe use and handling of

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