Introducing

Nephroflow™

IODOHIPPURATE SODIUM I 123 INJECTION

Normal Transplant Renogram¹

NEPHROFLOW, Iodohippurate Sodium I 123 Injection, 1.0 mCi

High Count Rate
High Detector Efficiency

Iodohippurate Sodium I 131 Injection, 0.15 mCi

Low Count Rate
Low Detector Efficiency

NEPHROFLOW provides better counting statistics and higher data density.

To Order call (800) MEDI-123

¹Reference: Data on file, Medi-Physics, Inc., Richmond, CA
Particularly useful in obstructed patients
Slight advantage in photon intensity
Major advantage in 1/4 inch crystal efficiency
Imaging should be performed as close to calibration time as possible

Comparison of I 123 and I 131

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>I 123</th>
<th>I 131</th>
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<tr>
<td>Mode of Decay</td>
<td>Electron capture</td>
<td>Beta-</td>
</tr>
<tr>
<td>Half-Life</td>
<td>13.2 hours</td>
<td>193 hours</td>
</tr>
<tr>
<td>Principal Gamma Energy (keV)</td>
<td>159</td>
<td>364</td>
</tr>
<tr>
<td>Intensity</td>
<td>84%</td>
<td>82%</td>
</tr>
<tr>
<td>Half-Value layer, lead, cm</td>
<td>0.037</td>
<td>0.24</td>
</tr>
<tr>
<td>Detection Efficiency:</td>
<td>74.5%</td>
<td>22.5%</td>
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NEPHROFLOW™
IODOHIPPURATE SODIUM I 123 INJECTION

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

DESCRIPTION: Iodohippurate Sodium I 123 Injection is supplied as a sterile, pyrogenic, aqueous, isotonic saline solution for intravenous administration. Each milliliter of the solution contains 37 megabecquerels (1 milliCuries) iodohippurate Sodium I 123 at calibration time, 2 milligrams iodohippurate Sodium, 1 percent benzyl alcohol (as a preservative), 8 milligrams sodium chloride for isotonicity, and up to 0.1 percent ethanol. The solution is buffered with sodium phosphate and the pH is adjusted to 7.0-8.5 with sodium hydroxide or hydrochloric acid. The radiouclide composition at calibration time is not less than 94.7 percent I 123, not more than 4.8 percent I 124, and not more than 0.5 percent all others (I 125, I 128, I 130, Na 24, Te 121). The radiouclide composition at expiration time is not less than 85.5 percent I 123, not more than 12.9 percent I 124, and not more than 1.6 percent all others.

INDICATIONS AND USAGE: Iodohippurate Sodium I 123 Injection is a diagnostic aid in determining renal function, renal blood flow, and urinary tract obstruction, and as a renal imaging agent.

CONTRAINDICATIONS: None Known.

WARNINGS: None Known.

PRECAUTIONS:

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

Do not use after the expiration time and date (24 hours after calibration time) stated on the label.

The prescribed iodohippurate Sodium I 123 dose should be administered as soon as practical from the time of receipt of the product (i.e., as close to calibration time as possible) in order to minimize the fraction of radiation exposure due to relative increase of radionuclidic contaminants with time.

Iodohippurate Sodium I 123, 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. Care should also 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 iodohippurate Sodium I 123 affects fertility in males or females.

Pregnancy Category C
Animal reproduction studies have not been conducted with this drug. It is also not known whether iodohippurate Sodium I 123 can cause fetal harm when administered to a pregnant woman, or can affect reproductive capacity. Iodohippurate Sodium I 123 should be given to a pregnant woman only if clearly needed.

Ideally, examinations using radiopharmaceuticals, especially those elective in nature, in women of childbearing capacity should be performed during the first few (approximately ten) days following the onset of menstrual flow.

Nursing Mothers
Since Iodine-123 is excreted in human milk, formula-feeding should be substituted for breast feeding if the agent must be administered to the mother during lactation.

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

ADVERSE REACTIONS: As with all organic iodine containing compounds, the possibility of allergic reactions must be kept in mind. Nausea, vomiting, and fainting have been reported in conjunction with the administration of iodohippurate Sodium I 123.

HOW SUPPLIED: Iodohippurate Sodium I 123 Injection is supplied in nominal 5.5 ml vials as a sterile, nonpyrogenic, aqueous, isotonic saline solution for intravenous injection. Each milliliter contains 37 megabecquerels (1 milliCurie) of iodohippurate Sodium I 123 at calibration time.

It is available in individual vials, in the following sizes:

- MPI Catalog No. 2041: 1 ml and 37 megabecquerels (1 mCi) per vial
- MPI Catalog No. 2042: 2 ml and 74 megabecquerels (2 mCi) per vial

Vials are packaged in individual lead shields with plastic outer container.
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Circle Reader Service No. 6
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LUNAR RADIATION CORPORATION

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Raytheon: Excitement in nuclear imaging.
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Edited by
A. Bertrand Brill, M.D.

This book represents a conscientious attempt to provide an unbiased, up-to-date source of knowledge regarding the potential long- and short-term effects of radiation exposure to humans. Because radiation exposure is an important and controversial topic, so much material is available. This fact book contains a concise reference list for readers wishing to obtain additional, or more detailed, information.

Important new sources of information provided the stimulus for publishing the 1985 updates to keep the fact book current. New reports issued by UNSCEAR, ICRP, and NCRP and references to recent publications of findings among Japanese A-bomb survivors have been added.

Available alone, or included with the original document, the 1985 updates will prove indispensable to a wide range of physicians, scientists, engineers, and technologists involved in the field.

"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. Nobel Laureate

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- Genetic Effects
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- Appendix: Sources of Documents
- References
- Recommended Readings

8½ x 11" looseleaf format: original text, 156 pages, including binder; 1985 updates, 80 pages, without binder.

Prices: $32.00 for original document plus 1985 update package $10.00 for 1985 update package purchased alone

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   - radioactive package surveys

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5. RADIATION EMERGENCY RESPONSE

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CONGRESS 1985
The Barbican Hall, London, Sept. 3–6, 1985

PARTICIPATING ORGANIZATIONS
The Society of Nuclear Medicine-Europe
23rd Meeting
The European Nuclear Medicine Society
8th Meeting
The British Nuclear Medicine Society
13th Meeting

SCIENTIFIC PROGRAM: The clinical contribution of nuclear medicine to patient management and clinical strategy in relation to other imaging procedures will be emphasized together with the scientific contribution of nuclear medicine to the basic physiology and biochemistry of health and disease. There will be lectures from invited speakers, scientific and clinical papers, symposium, poster sessions, a technologist program, and pre-congress teaching courses.


DATES: Saturday, August 31st, and Sunday, September 1st. (The Congress has applied for Category 1, AMA accreditation.) £25 before May 15; £35 after May 15.

EXPOSITION: A comprehensive exhibition of equipment and radiopharmaceuticals will be held in the Barbican Exhibition Hall A. Products and applications will be featured from over 50 manufacturers.

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REGISTRATION: £75 after May 15, 1985
All payments must be made in British pound sterling as a sterline bank draft. Please make drafts payable to: European Nuclear Medicine Congress 1985.

Mailing address for payment and further information: European Nuclear Medicine Congress 1985, Institute of Nuclear Medicine, Middlesex Hospital Medical School, Mortimer Street, London W1N 8AA, U.K. Telephone: 01-6311066
Fundamentals of Nuclear Medicine

Edited by
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and Fred S. Mishkin, MD

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Add $2.50 postage and handling for each book ordered. Prepayment required in U.S. funds drawn on U.S. banks only. For payments made in U.S. dollars, but drawn on a foreign bank, add a bank processing fee of $4.50 for Canadian bank drafts or $40.00 for all other foreign bank drafts. Check or purchase order must accompany all orders. Make checks payable to: The Society of Nuclear Medicine. Prices are in U.S. dollars and are subject to change without notice.

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All AccuSync-5R features with the exception of the Strip Chart Recorder.

All AccuSync-5R features with the exception of Digital CRT Monitor.

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All AccuSync-3 features with the exception of the Heart Rate/R-R int. display.

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**Model**

- **AccuSync-6**
- **AccuSync-IR**
- **AccuSync-2R**
- **AccuSync-2M**
- **AccuSync-3**
- **AccuSync-4**

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FOR DIAGNOSTIC USE

INDICATIONS AND USAGE: Technetium Tc 99m Albumin Colloid is indicated for use as a diagnostic imaging agent for visualization of the functioning renalunitmental (RF) system of the liver, spleen and bone marrow.

CONTRAINDICATIONS: Technetium Tc 99m Albumin Colloid is contraindicated for persons who receive multiple doses.

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

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

The contents of the vials are sterile and non-pyrogenic. It is essential that the user follow the directions carefully and adhere to strict aseptic procedures during the preparation of the radiodiagnostic Technetium Tc 99m Albumin Colloid should be used within six hours from the time of reconstruction. Reconstitute immediately before use and immediately for use at 5°C (39°F) after reconstitution. If blood is withdrawn from the syringe, unnecessary delay prior to injection may result in clot formation in situ.

Do not use if clumping of the contents is observed.

Technetium Tc 99m Albumin Colloid (MICROLITE)™ as well as other radioactive drugs should 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.

Carcinogenesis, Mutagenesis, Impairment of Fertility

No animal studies have been performed to evaluate carcinogenic potential or whether Technetium Tc 99m Albumin Colloid affects fertility in males or females.

Pregnancy Category C

Animal reproductive studies have not been conducted with Technetium Tc 99m Albumin Colloid. It is not known whether Technetium Tc 99m Albumin Colloid can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Technetium Tc 99m should be given to a pregnant woman only if clearly needed.

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

Nursing Mothers

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

Pediatric Use

Safety and effectiveness in children below the age of 18 have not been established.

General

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

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

ADVERSE REACTIONS: Although no adverse reactions associated with the use of Microlite have been reported, hypersensitivity reactions are theoretically possible. Sulfur-containing materials such as Tc 99m-labeled aggregated albumin are used in man. Eosinophils, antihistamines and corticosteroids should be available for use in the event such a reaction occurs.

DOSEAGE AND ADMINISTRATION: The recommended intravenous dose range for the average (150 lb) patient is 37-298 MBq (1-8 microcuries). The patient dose should be measured by a suitable radionuclide calibration system immediately prior to patient administration. Re-suspend colloid by repeated inversion of the shielded vial immediately prior to withdrawal of dose into syringe. Inspect the vial for foreign particulates. Do not administer if foreign particulates are found in the colloid. If blood is drawn into the syringe, any unnecessary delay prior to injection may lead to clot formation in situ. Do not baculaize the syringe. Slow injection is recommended and for optimum results imaging may begin about 15 minutes after injection. Radiochemical purity should be checked prior to patient administration, using the following or equivalent procedure (Please see complete prescribing information.)

HOW SUPPLIED: MICROLITE™ Kit for use in the preparation of Technetium Tc 99m Albumin Colloid is supplied in kits of five or thirty vials. sterile and non-pyrogenic. Each vial containing in lyophilized form:

Albumin Colloid

Normal Human Serum Albumin

10mg

Total T, maximum (as ammonium chloride HCl) 0.17mg

Sodium Citrate (NaC03, 2H20) (mmnimum) 0.006mg

Potassium 1.0mg

Mediate sodium 0.12mg

Sodium Phosphate (anhydrous) 10mg

Prior to lyophilization the pH is adjusted with HC and/or NaOH. The contents of the vial are lyophilized and stored under nitrogen. Included in each kit (5) vial kit are one (1) package insert and twelve (12) radiation labels. Included in each thirty vial kit are one (1) package insert and seventy-two (72) radiation labels. Before reconstruction store at room temperature (35°F, 39°C) and protect from light.

The components of the Kit for use in the preparation of Technetium Tc 99m Albumin Colloid are supplied sterile and non-pyrogenic. Aseptic procedures normally employed in making additions and withdrawals from sterile, non-pyrogenic containers should be used during addition of pertrahemoglobin solution and the withdrawal of doses for patient administration.

Technetium Tc 99m Albumin Colloid is prepared by adding 2-6 ml of oxidant-free sodium pertechnetate to Technetium Tc 99m solution to the vial and swirling for about one minute. Shielding should be utilized when preparing the Technetium Tc 99m Albumin Colloid.

Catalog Number NRP-470 (5-Vial Kit)

Catalog Number NRP-470C (30-Vial Kit)

May 1984

51616

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5 (Revised) Estimates of specific absorbed fractions for photon sources uniformly distributed in various organs of a heterogeneous phantom (1978)

10 Radionuclide decay schemes and nuclear parameters for use in radiation-dose estimation (1975)

11 ‘S’ absorbed dose-per-unit cumulated activity for selected radionuclides and organs (1975)

12 Kinetic models for absorbed dose calculations (1977)

SUPPLEMENTS

3 Includes the original pamphlet #5: “Estimates of absorbed fractions for monoenergetic photon sources uniformly distributed in various organs of a heterogeneous phantom.” (1969)

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NUCLEAR MEDICINE PHYSICIAN wanted. Well trained and experienced Board Certified Nuclear Medicine Physician with Board Certification on Board, or interested in becoming a Board certified Nuclear Medicine physician who has been in solo practice of nuclear medicine (non-subsidized) for 5-10 years who would be interested in becoming a partner in a successful independently owned outpatient nuclear medicine clinic and lab, fully equipped for in vivo and in vitro studies. Includes private office with technical and administrative staff. Must be willing and capable of assuming administrative and technical responsibility. Medical school affiliation possible if desired. Please send resume to: Box 701, Society of Nuclear Medicine, 475 Park Ave. So., New York, NY 10016. EOE.


NUCLEAR MEDICINE PHYSICIAN. Must have or be eligible to take the nuclear medicine examinations of the Royal College of Physicians and Surgeons of Canada. Position available September 1985. Victoria Hospital is an academic institution of 550 beds which is affiliated with the University of western Ontario. The position is non-resident and is not an appointment is attached to the position. Duties include clinical service and resident teaching. Opportunities exist for research and academic development. To comply with Canadian Immigration Department regulations preference will be given to qualified Canadians. Please send resume to: Dr. A.A. Drindger, Department of Nuclear Medicine, Victoria Hospital, 375 South St., London, Ontario, Canada N6A 4G5; (519)432-5241, ext. 529. EOE.

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RESEARCH PHYSICIAN opening in the Biology and Medicine Division, Lawrence Berkeley Laboratory, University of California. Seek physician licensed in California and Board Certified in nuclear medicine for research and clinical science activities, emission imaging, and nuclear magnetic resonance. Responsibilities include: conduct studies on radiation necrosis, treatment planning, noninvasive studies of aging and central nervous system vascular diseases. Previous experience in nuclear medicine, radioactive isotope procedures, and nuclear magnetic resonance imaging techniques and interpretations is required. Opportunities for independent research in noninvasive imaging and metabolic studies are supported by the availability of two positron emission tomographs and two NMR units (0.5T and 2.3T). Salary range: $2150-$67500. Please send two copies of CV and names and addresses of three references, indicating Job #A/3431, to: Lawrence Berkeley Laboratory, Employment Office 90-1042, 1 Cyclotron Rd., Berkeley, CA 94720. An Equal Opportunity Employer M/F/H.

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Scientist

ORGANIC CHEMIST. A senior faculty position is available for a person with a PhD in organic chemistry and with experience in the operation and maintenance of a cyclotron and in the organic synthesis of radioactive tracers incorporating radionuclides from an in-hospital cyclotron. Previous experience in microscale synthesis and the design and preparation of 3H, 14C-, and 35S-labeled compounds for human use is required. Experience in neurochemistry and organo-metallic chemistry is highly desirable. Send curriculum vitae and three letters of recommendation to: Dr. H. Donald Burns, Division of Radiation Health Sciences, The Johns Hopkins University School of Hygiene and Public Health, 615 North Wolfe St., Baltimore, MD 21205. Johns Hopkins is an Equal Opportunity Employer.

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NUCLEAR MEDICINE TECHNOLOGIST. Registered or registry eligible technologist to work in private office. Special emphasis on nuclear cardiology. Salary negotiable. Climate and southwestern living unassisted. Send resume to: Dr. J.R. Dameron, RAD-WEST, 1651 Galingo, Suite 1, Santa Fe, NM 87501; (505)988-2848. EOE.

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NM PHYSICIAN, special competence in nuclear cardiology and ultrasonography, seeks position with group, clinic, or hospital. Reply: Box 702, Society of Nuclear Medicine, 475 Park Ave. So., New York, NY 10016.

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A chemist with training in nuclear chemistry and radiochemistry is needed to evaluate "New Drug Applications" and other scientific submissions pertaining to chemistry, manufacturing process, controls, stability, and packaging. This is a full-time, civil service position at the headquarters of the Food and Drug Administration (Equal Opportunity Employer), located in Rockville, MD, a suburb of Washington, DC. Salary range is $31,619 to $48,876, depending upon qualifications. U.S. Office of Personnel Management regulations govern acceptability of qualifications. A PhD or its equivalent and/or experience in the radiopharmaceutical industry is highly desirable. Send resume to:
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Division of Personnel Management
5600 Fishers Lane, Room 4B-26
Rockville, MD 20857
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Course Director: Stanley J. Goldsmith, MD

Faculty: Philip O. Alderson, MD; Stanley J. Goldsmith, MD; Eric Hall, DSc.; Thomas P. Haynie, MD; Steven F. Horowitz, MD; Avir Kagan, MD; Thomas Lowinger, PhD; Letty Lutzker, MD; Josef Machac, MD; Leon Malmud, MD; Joseph Sanger, MD; Lois Shane, MD; Suresh C. Srivastava, PhD; Arnold Strashun, MD; Shankar Vallabhajosula, PhD; Henry N. Wagner, Jr., MD; Heidi Weissmann, MD.

For further information contact: Ms. Mary Farrell-Batista—(212)650-7888.
On August 1, 1985, the Central Office of The Society of Nuclear Medicine will relocate to the following address:

136 Madison Avenue
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Our telephone number will remain unchanged at (212) 889-0717

Please address all correspondence to our new address starting on August 1. During the transition, all correspondence received at our current address will be forwarded so that there will be no interruption of services.
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For complete prescribing information consult package insert, a brief summary of which follows:

DESCRIPTION: Thallous Chloride TI 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 milliliters of Thallous Chloride TI 201 at calibration time, pH adjusted to 5.8-8.0 with hydrochloric acid and/or sodium hydroxide. Contains no bacteriostatic preservative. Thallium TI 201 is cytoclone produced and is essentially carrier-free. Radiochemical purity at calibration time is at least 98.0% with less than 1.0% Thallium TI 200 1.0% Thallium 202 and 0.2% Lead Pb 203. The concentration of each radiochemical contaminant changes with time.

INDICATION AND USAGE: Thallous Chloride TI 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 TI 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 TI 201 affects fertility in males or females.

Pregnancy Category C
Animal reproduction studies have not been conducted with Thallous Chloride TI 201. It is also not known whether Thallous Chloride TI 201 can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Thallous Chloride TI 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 TI 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 TI 201 is supplied as a sterile, nonpyrogenic, isotonic solution in unit dose vials containing 1 milliliter. Each milliliter contains 2 milliliters of Thallous Chloride TI 201 at calibration time. Contains no bacteriostatic preservative.