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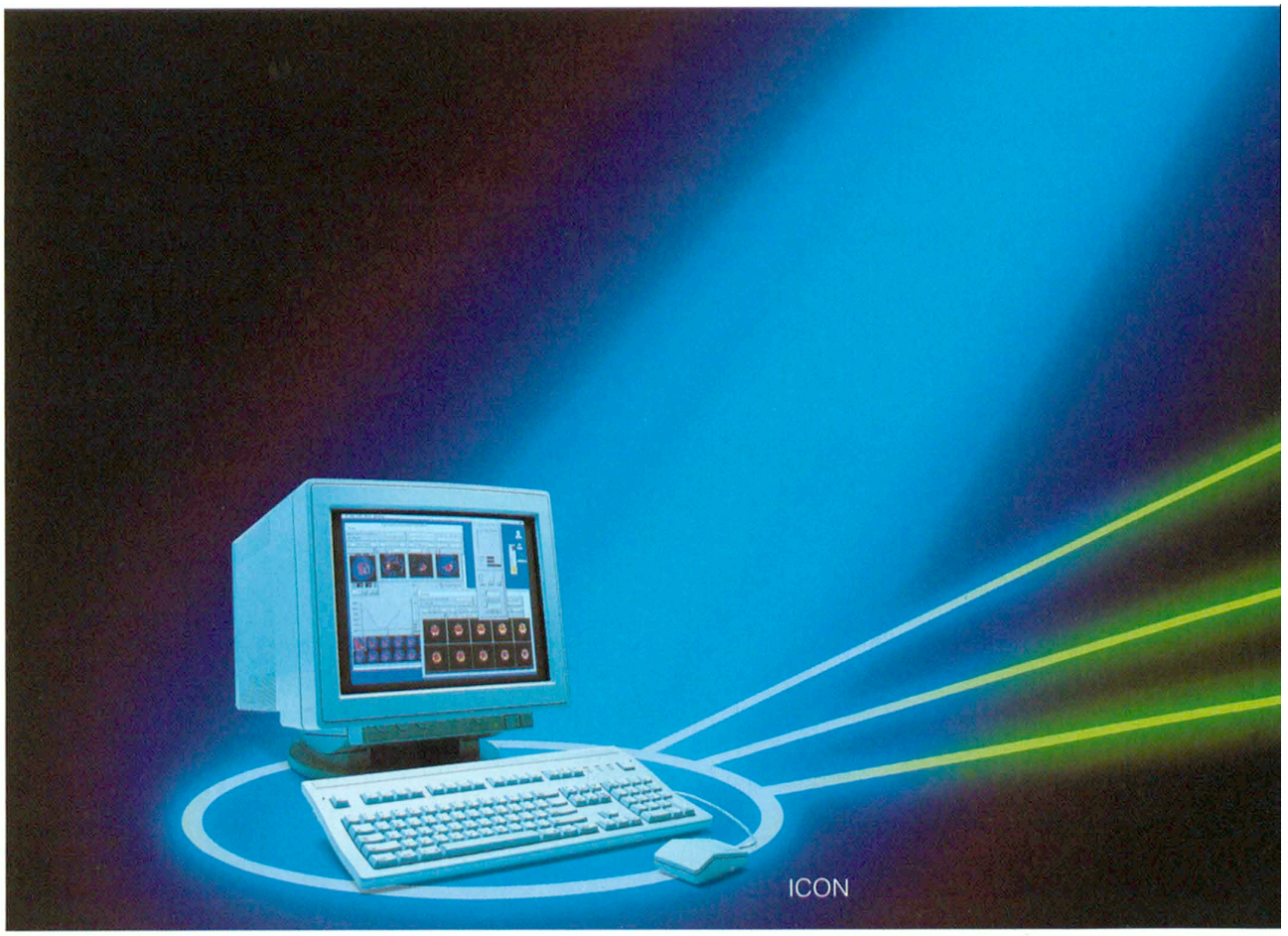

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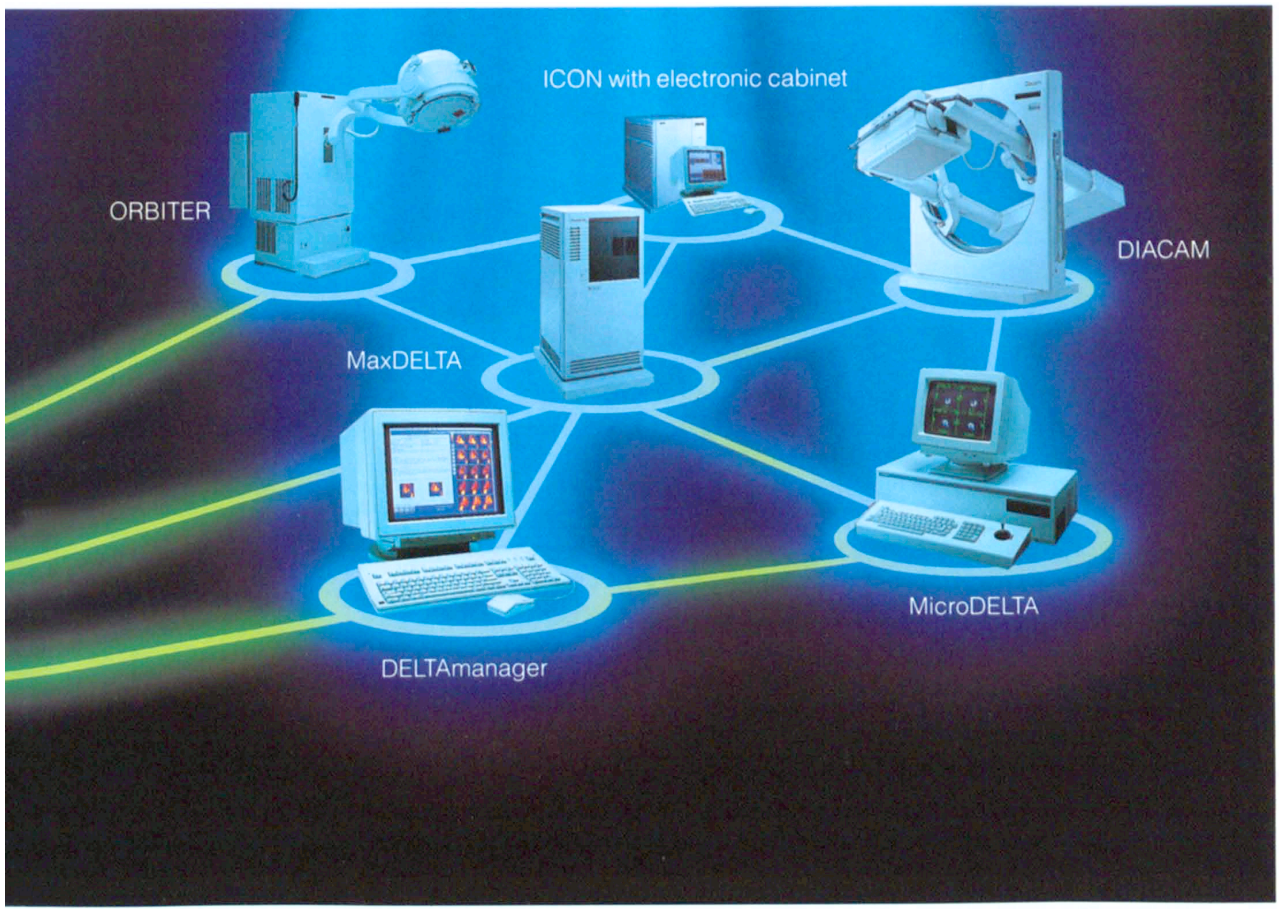

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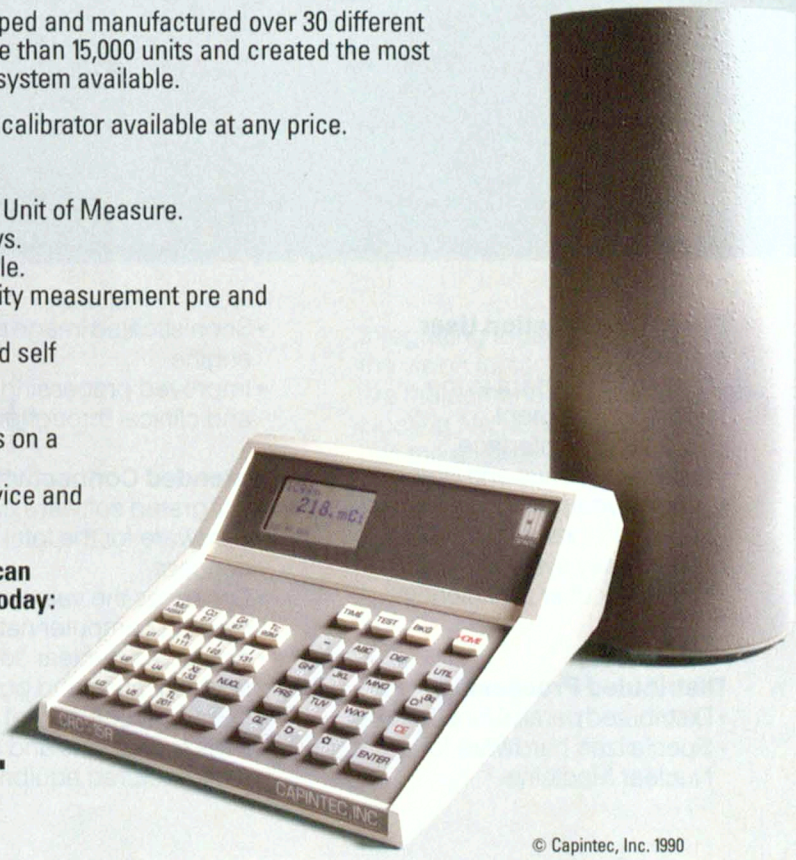

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Message in a Bottle

There are many forms of communication and most, by definition, include at least two parties who alternate between sending and receiving information. That there are two parties is important—as it allows for critical assessment of the information being transmitted, which in turn makes for improved future communications. When we are only allowed to transmit, or to receive, there is bound to be miscommunication.

The fax machine is a perfect example of a potential miscommunication tool. It is in a sense a sophisticated way of sending 'messages in a bottle.' We place the message in the bottle and the bottle in the electronic stream, and wait. When our machine signals us that transmission has taken place, we say, aha, we have communicated. But that is not necessarily so.

True communication depends on some form of direct linkage between two active parties, and that is a highly underrated and some might even say, rare, phenomena. Even when we encounter our intended communication partner(s) directly, face to face, that link may not be made. This is a situation of which any scientist who has given a lecture is aware.

Is reading a form of communication? Well certainly for the reader and the writer that important two-way link is, at best, delayed. In the case of a biomedical journal, though it is certainly the intention of authors and editors to communicate with their audience, poor communication is not usually fatal. When no linkage occurs, a journal may content itself with lecturing its audience—hoping at some future date, to hear the response.

Perhaps then there is no significance in the fact that there is so little two-way communication between *The Journal of Nuclear Medicine* and its readers. Each month over 13,000 copies of this *Journal* are distributed around the world. In the past year, over 2,000 manuscript pages were published, and yet they engendered only 66 letters. Letters, like penmanship, may simply be yet another archaic communication tool in danger of extinction.

It is certainly a sign of the times that various biomedical publications repeatedly publish articles that seem to have no impact on their readers. Using the citation index as an example, a recent editorial by John Maddox in the prestigious journal *Nature* reported that over 60% of all articles published in scientific journals are not referenced even once. Yet while that statistic clearly suggests that the majority of scientific research does not impress other scientists, it does not mean that the work had no effect on practitioners in the field. Nevertheless, until the staff and contributors to these journals hear otherwise, none will know what the effect of these articles was.

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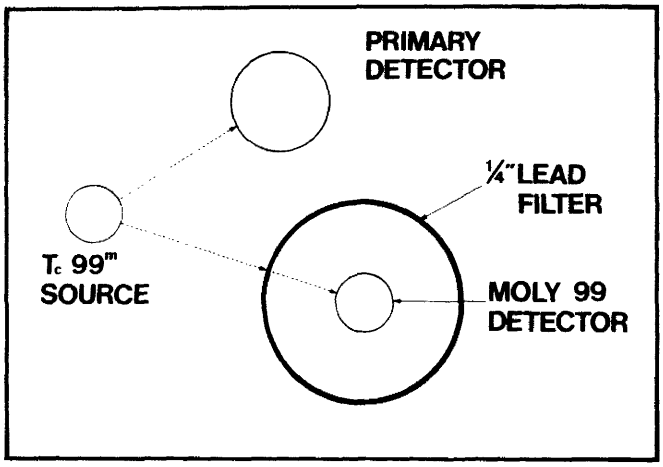

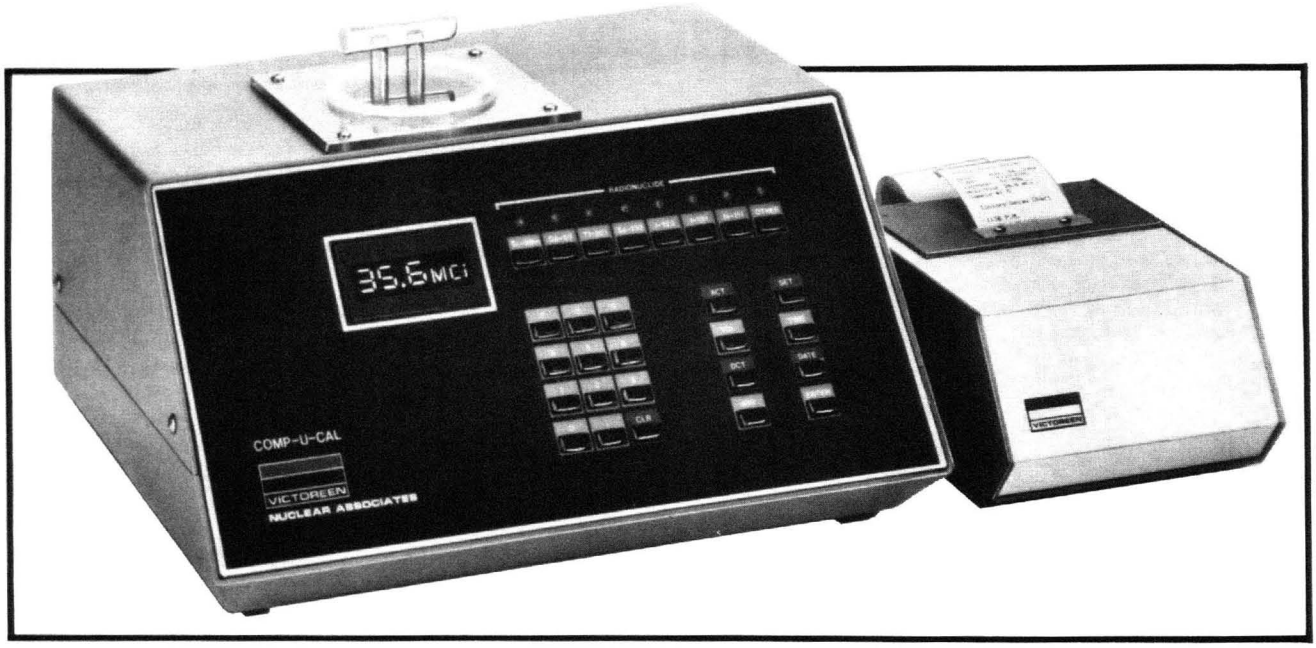

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Same-Day Myocardial Imaging by Technetium-99m-MIBI

A same-day double injection protocol employing ^{99m}Tc-MIBI dipyridamole-stress and myocardial SPECT for detecting CAD was compared to ^{201}Tl in 30 patients. ..... *Page 369*

Linear Gastric Emptying of Hyperosmolar Glucose Solutions

Six normal subjects were studied with hyperosmolar (1.85 mol/l) and dilute (0.62 mol/l) glucose solutions to determine the changes in gastric emptying..... *Page 377*

rCBF-SPECT In Brain Infarction: When Does It Predict Outcome?

Thallium-201-DDC SPECT was performed on 26 patients with ischemic stroke within 24 hr and after 2 wk and 6 mo. The perfusion deficits on admission correlated best with outcome. ..... *Page 382*

Technetium-99m-HMPAO Brain SPECT in Medically Intractable Temporal Lobe Epilepsy: A Postoperative Evaluation

Twenty-one right-sided and 19 left-sided temporal lobectomies were performed. After left-sided surgery, verbal memory was impaired in 8%, if SPECT agreed with the side selected for surgery, but only in 83%, if SPECT diverged from it. ..... *Page 388*

Thyroglobulin Level as a Predictive Factor of Tumoral Recurrence in Differentiated Thyroid Cancer

Using multivariate analysis of proportional risk, the regression coefficients obtained allowed the authors to establish the risk of relapse on the basis of a prognostic index. *Page 395*

Technetium-99m-MRP20, a Potential Brain Perfusion Agent: In Vivo Biodistribution and SPECT Studies in Normal Male Volunteers

The authors report the in vivo bidistribution, radiation dosimetry, and SPECT characteristics of MRP20..... *Page 399*

Combined Technetium Radioisotope Penile Plethysmography and Xenon Washout: A Technique for Evaluating Corpora Cavernosal Inflow and Outflow During Early Tumescence

Penile blood flow was studied in 14 patients with erectile dysfunctions. ..... *Page 404*

Optimal Iodine-131 Dose for Eliminating Hyperthyroidism in Graves' Disease

Patients (605) were treated with increasing doses of radioidine, and the relationship of dose, age, sex, gland weight, and thyroidal uptake to cure was analyzed..... *Page 411*

Lung Thallium-201 Uptake During Exercise Emission Computed Tomography

The lung/heart ratio of ^{201}Tl was measured from an anterior image during ECT in three groups. The mean +2 s.d. was elevated in 30% of patients with coronary disease. ..... *Page 417*

Proposal of a Modified Scintigraphic Method to Evaluate Duodenogastroesophageal Reflux

Twenty-three patients complaining of dyspeptic symptoms underwent modified hepatobiliary scintigraphy wherein biliary reflux was graded using the persistence rather than the intensity of radioactive refluxate. ..... *Page 424*

Use of Technetium-MAG$_3$ for Renal Scintigraphy After Angiotensin-Converting Enzyme Inhibition

MAG$_3$ renograms were performed in 82 patients after oral premedication with 50 mg of Captopril. Baseline studies were obtained only for those patients showing abnormal findings in the provocative study.... *Page 429*

Relative Accuracy of Three Scintigraphic Methods for Determination of Right Ventricular Ejection Fraction: A Correlative Study with Ultrafast Computed Tomography

In 29 patients, RVEF measurements by the ECG-gated first-pass approach showed excellent correlation with ultrafast CT results. In contrast both standard multi-gated blood-pool imaging and the non-gated first-pass beat-by-beat analysis significantly underestimated RVEFs. ..... *Page 436*

Thallium-201 Scintigraphy in Differentiated Thyroid Cancer: Comparison with Radioiodine Scintigraphy and Serum Thyroglobulin Determinations

Fifty-two patients with differentiated thyroid carcinoma were evaluated with ^{201}Tl, ^{131}I neck and chest images, and serum thyroglobulin measurements..... *Page 441*

Comparison of Myocardial Imaging with Iodine-123-Iodophenyl-9-Methyl Pentadecanoic Acid and Thallium 201-Chloride for Assessment of Patients with Exercise-Induced Myocardial Ischemia

Modified fatty acid and ^{201}Tl were injected in 11 patients during exercise-induced myocardial ischemia. Simultaneous dual-energy planar images were obtained at 5 min and at 3 and 5 hr. All studies were concordantly either positive (8/11) or negative (3/11) by both radionuclides..... *Page 447*

Endotoxin Reduces Specific Pulmonary Uptake of Radiolabeled Monoclonal Antibody to Angiotensin-Converting Enzyme

The biodistribution of radiolabeled monocolonal antibody to angiotensin-converting enzyme was examined in normal and endotoxin-treated rats..... *Page 453*

Rapid Localization of Indium-111-Labeled Inhibited Recombinant Tissue Plasminogen Activator in a Rabbit Thrombosis Model

After the active plasminogen catalytic site was permanently inhibited with peptides of chloromethyl ketone, so that the radiotracer would bind to fibrin without causing fibrinolysis, the thrombus-localizing properties of modified ^{111}In-labeled rt-PA were investigated in 14 male New Zealand white rabbits..... *Page 461*

Detection of Local Staphylococcal Infection in Mice with Technetium-99m-Labeled Polyclonal Human Immunoglobulin

Mice, infected with *Staphylococcus aureus* in a thigh muscle, received labeled polyclonal human immunoglobulin intravenously. Localization was proportional to the number of bacteria..... *Page 468*

In Vivo Comparison of Copper Blood-Pool Agents: Potential Radiopharmaceuticals for Use with Copper-62

The preparation of benzyl-TETA-albumin and its radiolabeling with both ^{67}Cu and ^{62}Cu are discussed. The rat plasma clearance of ^{67}Cu-benzyl-TETA-albumin, [^{67}Cu]-Cu-acetate, and ^{125}I-HSA are compared. ..... *Page 475*

Editorial: Cardiac Blood-Pool Tracers..... *Page 480*

Imaging Focal Sites of Bacterial Infection in Rats with Indium-111-Labeled Chemotactic Peptide Analogs

Four DTPA-derivatized chemotactic peptide analogs were synthesized and evaluated for in vitro bioactivity and receptor bindings. The peptides were radiolabeled with ^{111}In by transchelation and biodistribution was determined in rats at 5, 30, 60, and 120 min postinjection. ..... *Page 483*

Editorial: Chemotactic Peptides: New Locomotion for Imaging of Infection..... *Page 491*

Cellular Internalization, Transport, and Esterification of Iodine-125-NP59 by MA-10 Leydig Tumor Cells

NP59 readily entered MA-10 Leydig tumor cells. The cholesterol analogue entered the cells by binding to the plasma membrane and becoming internalized along with plasma membrane cholesterol. ..... *Page 495*

Technetium-99m-MRP20, a Potential Brain Perfusion Agent: In Vivo Biodistribution and SPECT Studies in Non-Primate Animals

The biodistribution of ^{99m}Tc-MRP20 was investigated in female rats. A SPECT study of a beagle dog was performed over 4 hr, and brain uptake was observed by a first-phase dynamic study..... *Page 500*

Differences in the Intracellular Processing of the Radiolabel Following the Uptake of Iodine-125- and Technetium-99m-Neogalactosyl Albumin by the Isolated Perfused Rat Liver

A comparison of the uptake and intracellular processing of ^{125}I- and ^{99m}Tc-NGA was studied in the isolated perfused rat liver. ..... *Page 507*

Clinicopathologic Conferences: False-Positive Probability in Ventilation/Perfusion Scans ..... *Page 513*

Incidental Demonstration of Pericardial Fistula During Hepatobiliary Scintigraphy

A 48-yr-old man with adenocarcinoma of the esophagus, admitted for nausea, bilious vomiting, and abdominal pain, was found to have a pericardial collection on biliary imaging. ..... *Page 519*

Gallium in Retroperitoneal Fibrosis: Significance of a Negative Result

A patient with retroperitoneal fibrosis and right peritracheal and hilar lymphadenopathy was studied using ^{67}Ga-citrate. No abnormal uptake was seen in regions of retroperitoneal fibrosis, while there was avid uptake in chest lesions shown to be lung cancer... *Page 522*

Absent Splenic Uptake of Indium-111-Oxine-Labeled Autologous Leukocytes in Functional Asplenia

The uptake of the leukocytes was documented to be associated with functional asplenia based on the absence of technetium-sulfur colloid clearance by a morphologically normal spleen..... *Page 525*

Quantitative SPECT Reconstruction of Iodine-123 Data

Four attenuation and scatter compensation schemes, incorporated into both the filtered backprojection/Chang and maximum likelihood-expectation maximation reconstruction algorithms, were evaluated in terms of quantitative accuracy, image artifacts, and noise. ..... *Page 528*

Continuing Education: Three-Dimensional Display in Nuclear Medicine and Radiology ..... *Page 535*

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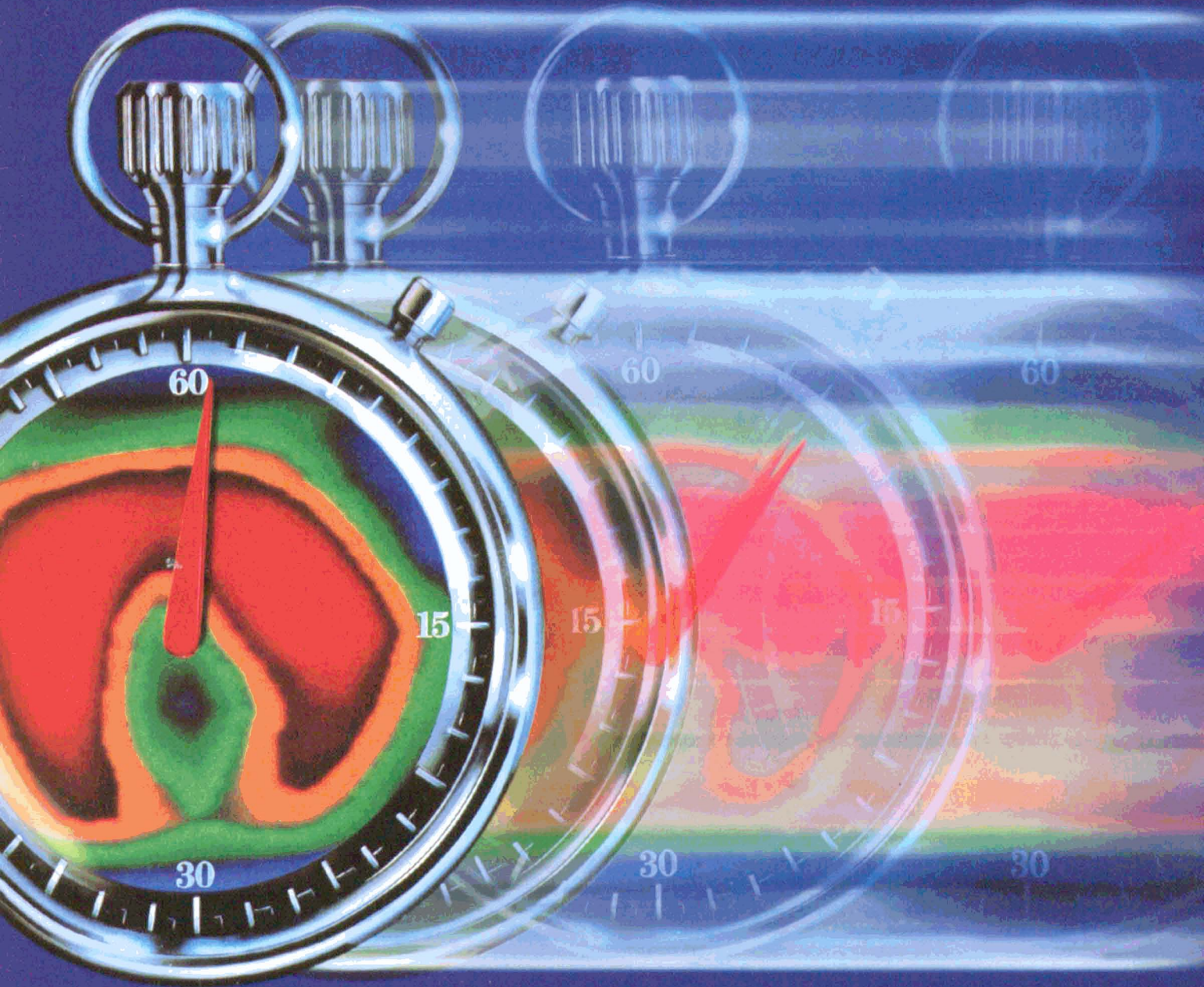

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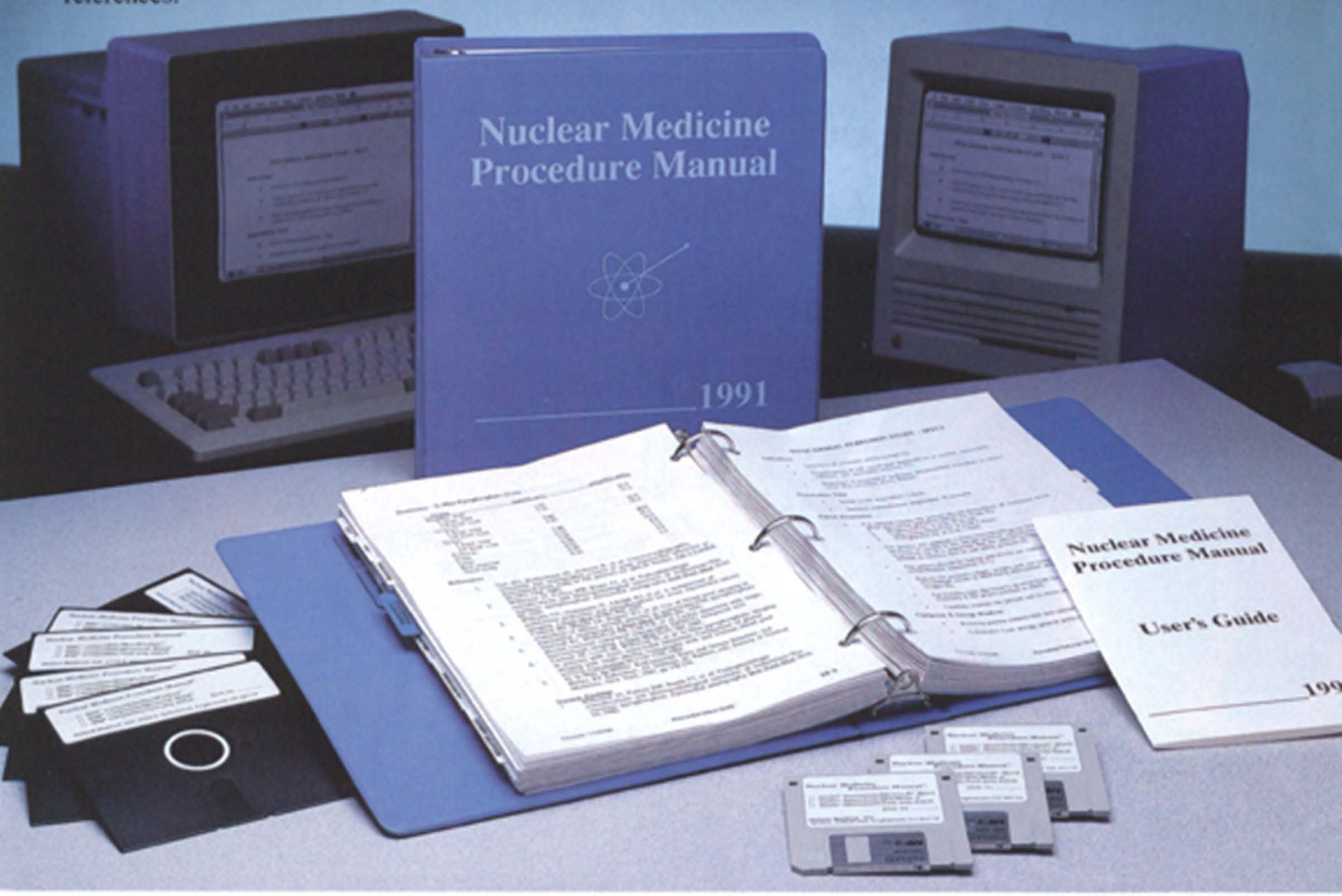

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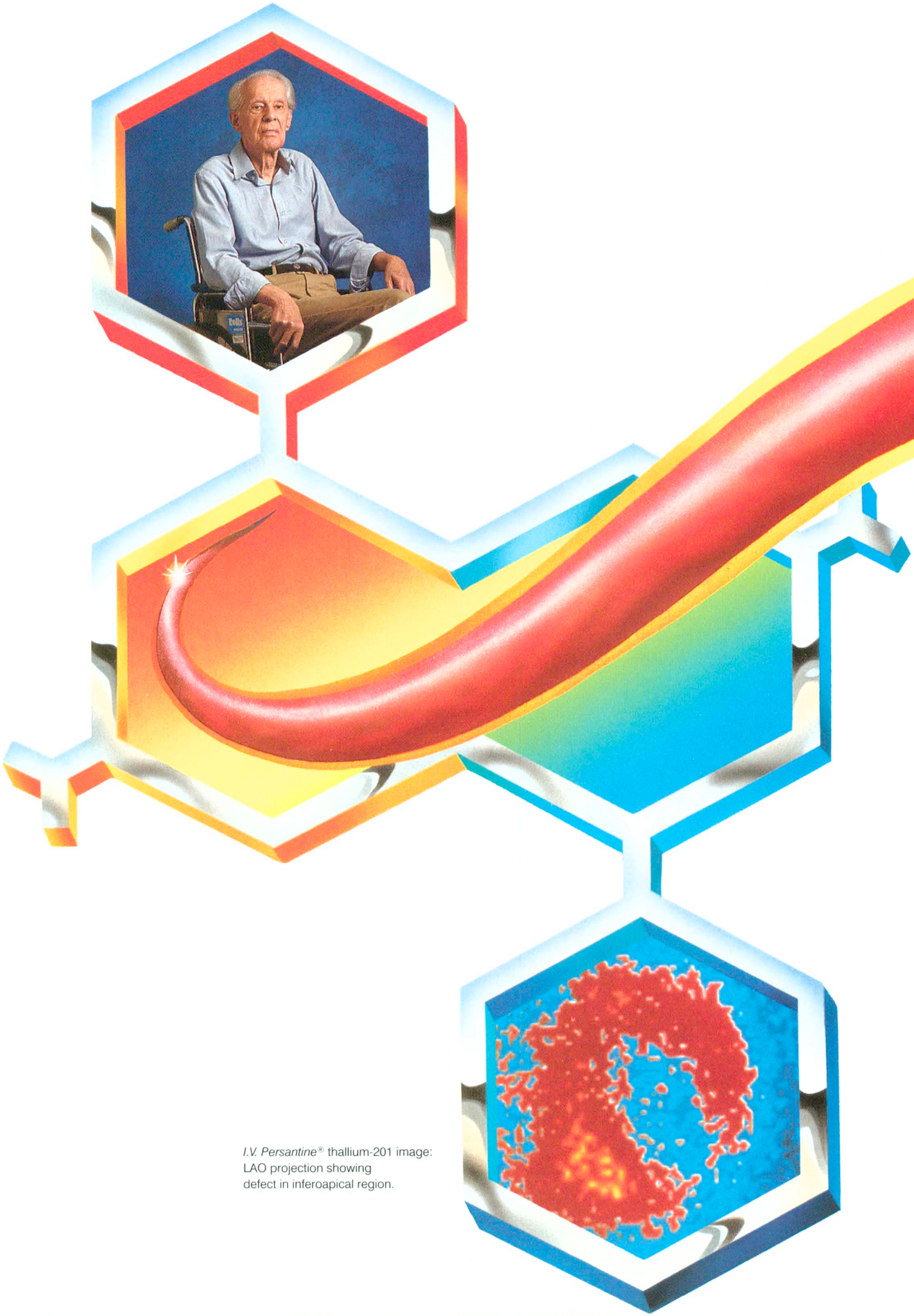

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References:
1. Iskandrian AS, Heo J, Askenase A, et al: *Am Heart J* 1988;115:432-443.
2. Leppo JA: *J Nucl Med* 1989; 30:281-287.
3. Ranhosky A, Kempthorne-Rawson J, et al: *Circulation* 1990; 81:1205-1209.
4. Data on file, Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT.

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CONTRAINDICATIONS: None known.

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In a study of 3911 patients given intravenous Persantine as an adjunct to thallium myocardial perfusion imaging, two types of serious adverse events were reported: 1) four cases of myocardial infarction (0.1%), two fatal (0.05%), and two non-fatal (0.05%); and 2) six cases of severe bronchospasm (0.2%). Although the incidence of these serious adverse events was small (0.3%,10 of 3911), the potential clinical information to be gained through use of intravenous Persantine thallium imaging (see Indications and Usage noting the rate of false positive and false negative results) must be weighed against the risk to the patient. Patients with a history of unstable angina may be at a greater risk for severe myocardial ischemia. Patients with a history of asthma may be at a greater risk for bronchospasm during IV Persantine use.
When thallium myocardial perfusion imaging is performed with intravenous Persantine, parenteral aminophylline should be readily available for relieving adverse events such as bronchospasm or chest pain. Vital signs should be monitored during, and for 10-15 minutes following, the intravenous infusion of Persantine and an electrocardiographic tracing should be obtained using at least one chest lead.
Should severe chest pain or bronchospasm occur, parenteral aminophylline may be administered by slow intravenous injection (50-100 mg over 30-60 seconds) in doses ranging from 50 to 250 mg. In the case of severe hypotension, the patient should be placed in a supine position with the head tilted down if necessary, before administration of parenteral aminophylline. If 250 mg of aminophylline does not relieve chest pain symptoms within a few minutes, sublingual nitroglycerin may be administered. If chest pain continues despite use of aminophylline and nitroglycerin, the possibility of myocardial infarction should be considered. If the clinical condition of a patient with an adverse event permits a one minute delay in the administration of parenteral aminophylline, thallium-201 may be injected and allowed to circulate for one minute before the injection of aminophylline. This will allow initial thallium perfusion imaging to be performed before reversal of the pharmacologic effects of Persantine on the coronary circulation.

PRECAUTIONS See WARNINGS.
Drug Interactions Oral maintenance theophylline may abolish the coronary vasodilatation induced by intravenous Persantine® (dipyridamole USP) administration. This could lead to a false negative thallium imaging result.
Carcinogenesis, Mutagenesis, Impairment of Fertility In studies in which dipyridamole was administered in the feed at doses of up to 75 mg/kg/day (9.4 times* the maximum recommended daily human oral dose) in mice (up to 126 weeks in males and females) there was no evidence of drug related carcinogenesis. Mutagenicity tests of dipyridamole with bacterial and mammalian cell systems were negative. There was no evidence of impaired fertility when dipyridamole was administered to male and female rats at oral doses up to 500 mg/kg/day (63 times* the maximum recommended daily human oral dose). A significant reduction in number of corpora lutea with consequent reduction in implantations and live fetuses was, however, observed at 1250 mg/kg/day.
*Calculation based on assumed body weight of 50 kg.
Pregnancy Category B Reproduction studies performed in mice and rats at daily oral doses of up to 125 mg/kg (15.6 times* the maximum recommended daily human oral dose) and in rabbits at daily oral doses of up to 20 mg/kg (2.5 times* the maximum recommended daily human oral dose) have revealed no evidence of impaired embryonic development due to dipyridamole. There are, however, no adequate and well controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human responses, this drug should be used during pregnancy only if clearly needed.
*Calculation based on assumed body weight of 50 kg.
Nursing Mothers Dipyridamole is excreted in human milk.
Pediatric Use Safety and effectiveness in children have not been established.

ADVERSE REACTIONS Adverse reaction information concerning intravenous Persantine® (dipyridamole USP) is derived from a study of 3911 patients in which intravenous Persantine was used as an adjunct to thallium myocardial perfusion imaging and from spontaneous reports of adverse reactions and the published literature.
Serious adverse events (fatal and non-fatal myocardial infarction, severe ventricular arrhythmias, and serious CNS abnormalities) are described above (see WARNINGS).
In the study of 3911 patients, the most frequent adverse reactions were: chest pain/angina pectoris (19.7%), electrocardiographic changes (most commonly ST-T changes) (15.9%), headache (12.2%), and dizziness (11.8%).
Adverse reactions occurring in greater than 1% of the patients in the study are chest pain/angina pectoris (19.7%), headache (12.2%), dizziness (11.8%), electrocardiographic abnormalities/ST-T changes (7.5%), electrocardiographic abnormalities/extrasystoles (5.2%), hypotension (4.6%), nausea (4.6%), flushing (3.4%), electrocardiographic abnormalities/tachycardia (3.2%), dyspnea (2.6%), pain unspecified (2.6%), blood pressure lability (1.6%), hypertension (1.5%), parestnesia (1.3%), fatigue (1.2%).
Less common adverse reactions occurring in 1% or less of the patients within the study included:
Cardiovascular System: Electrocardiographic abnormalities unspecified (0.8%), arrhythmia unspecified (0.6%), palpitation (0.3%), ventricular tachycardia (0.2% see WARNINGS), bradycardia (0.2%), myocardial infarction (0.1% see WARNINGS), AV block (0.1%), syncope (0.1%), orthostatic hypotension (0.1%), atrial fibrillation (0.1%), supraventricular tachycardia (0.1%), ventricular arrhythmia unspecified (0.03% see WARNINGS), heart block unspecified (0.03%), cardiomyopathy (0.03%), edema (0.03%).
Central and Peripheral Nervous System: Hypothesia (0.5%), hypertonia (0.3%), nervousness/anxiety (0.2%), tremor (0.1%), abnormal coordination (0.03%), somnolence (0.03%), dysphonia (0.03%), migraine (0.03%), vertigo (0.03%).
Gastrointestinal System: Dyspepsia (1.0%), dry mouth (0.8%), abdominal pain (0.7%), flatulence (0.6%), vomiting (0.4%), eructation (0.1%), dysphagia (0.03%), tenesmus (0.03%), appetite increased (0.03%).
Respiratory System: Pharyngitis (0.3%), bronchospasm (0.2% see WARNINGS), hyperventilation (0.1%), rhinitis (0.1%), coughing (0.03%), pleural pain (0.03%).
Other: Myalgia (0.9%), back pain (0.6%), injection site reaction unspecified (0.4%), diaphoresis (0.4%), asthenia (0.3%), malaise (0.3%), arthralgia (0.3%), injection site pain (0.1%), rigor (0.1%), earache (0.1%), tinnitus (0.1%), vision abnormalities unspecified (0.1%), dysgeusia (0.1%), thirst (0.03%), depersonalization (0.03%), eye pain (0.03%), renal pain (0.03%), perineal pain (0.03%), breast pain (0.03%), intermittent claudication (0.03%), leg cramping (0.03%).
Caution Federal law prohibits dispensing without prescription.

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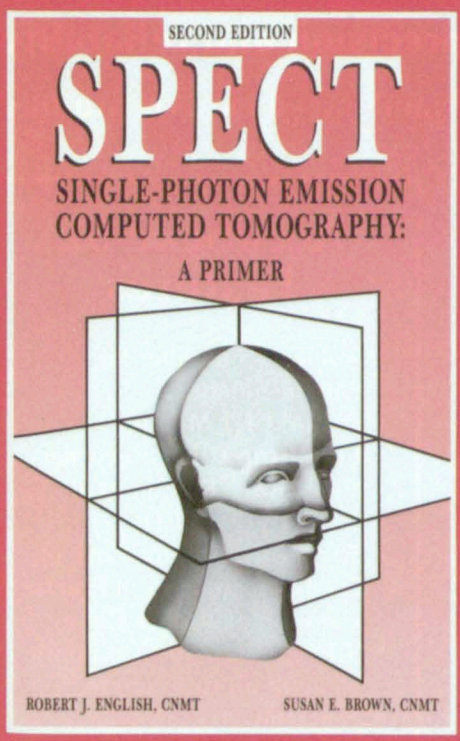

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The protocols and procedures are deliberately presented in a generic fashion to offer the greatest flexibility to both the novice and the more experienced practitioner. Each chapter contains a summary of the covered topic, study questions, and a recommended reading list. This format ensures a thorough exposure to each topic and allows the reader to focus on areas of special interest.

Part I of the text gives the technologist a solid grounding in SPECT theory and protocols. Part II builds on this knowledge and introduces the reader to SPECT studies of various organs. The brain is discussed first because it is by far the most technically difficult organ to image. The reader will see realistic clinical images of acceptable and flawed transaxial slices for each study.

The Appendix has been updated to include a discussion on Ramp filters and their correlation with additional filters such as Shepp, Logan, Hamming, Hann, and Butterworth.

A chapter is devoted to each of the following subjects:

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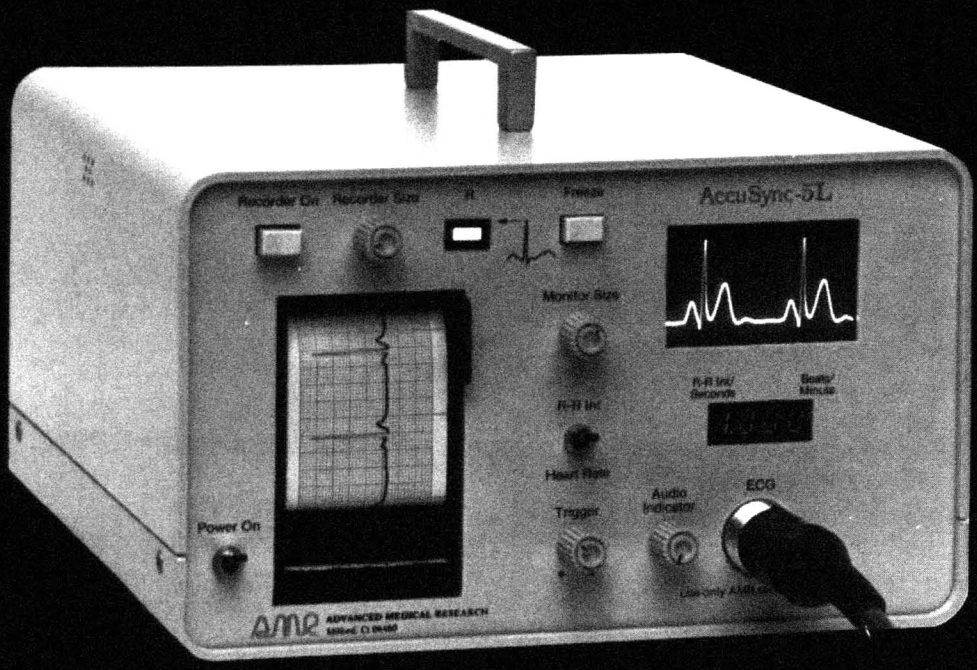

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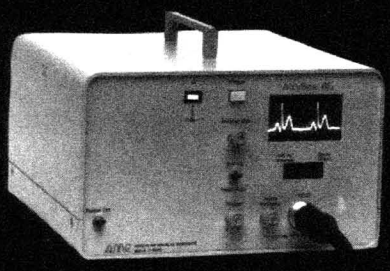
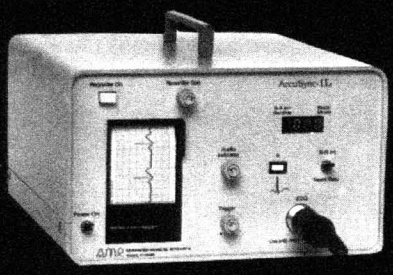
AccuSync-6L		All **AccuSync-5L** features with the exception of the Strip Chart Recorder.
AccuSync-1L		All **AccuSync-5L** features with the exception of the Digital CRT Monitor.
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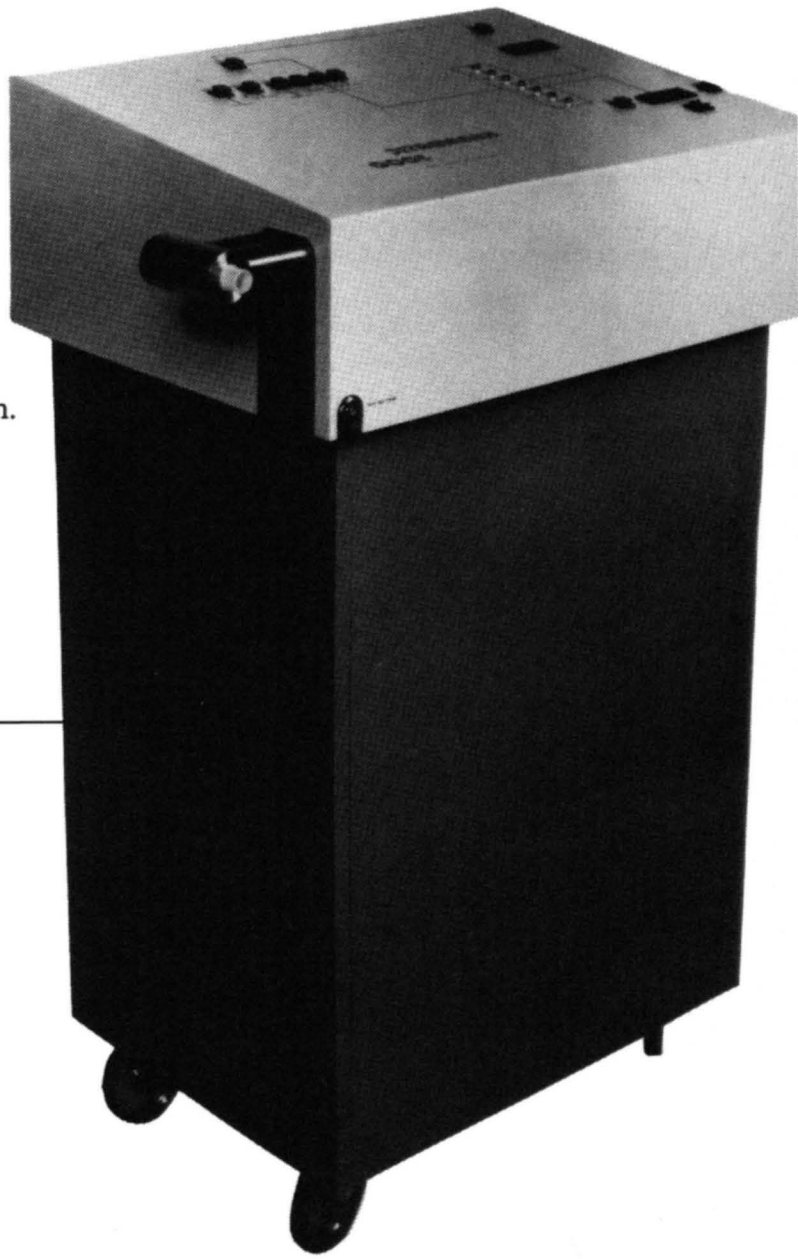

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Continuing Medical Education Primary Focus of The Society of Nuclear Medicine's 38th Annual Meeting

THE SOCIETY OF NUCLEAR MEDICINE'S
38TH ANNUAL MEETING
JUNE 11–14, 1991
CINCINNATI, OHIO

The 38th Annual Meeting of The Society of Nuclear Medicine will be held in Cincinnati, Ohio on Tuesday, June 11 through Friday, June 14, 1991. The Cincinnati Convention Center is the site of all of the educational activities for this meeting.

CONTINUING EDUCATION ACTIVITIES

A primary focus for every SNM Annual Meeting are the Continuing Education activities that are offered for physicians, scientists, pharmacists, and technologists.

This year we are pleased to offer 7 categorical seminars and over 39 continuing education courses. There will also be a Nuclear Medicine Review Course which is geared for the nuclear medicine resident preparing for the ABNM boards and others who wish to refresh their knowledge for practice in nuclear medicine.

All of the categorical seminars will take place on Monday, June 10 from 8:30 A.M. –2:30 P.M. All other continuing education sessions will occur over the dates of the meeting.

The Society of Nuclear Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians.

The Society of Nuclear Medicine is approved by the American Council on Pharmaceutical Education as a provider of continuing pharmaceutical education.

Technologist Section courses are approved for continuing education credit by the Technologist Section of The Society of Nuclear Medicine under the criteria and guidelines established by the Council on the Continuing Education Unit.

TECHNICAL EXHIBITS

Another important component of the meeting is the technical exhibits, where the most advanced products and services for the nuclear medicine practitioner will be displayed. Attendees will have the opportunitiy to speak with technical experts and to see demonstrations of new equipment in an atmosphere free from the pressures of their busy practices.

Suppliers to the nuclear medicine community traditionally take advantage of the Society's Annual Meeting to showcase the innovations developed over the past year and to introduce new products. They make their greatest effort to impress and influence their most important customers—our attendees.

This year will be no different: several long-time exhibitors have increased their space, and we anticipate an even larger show, with more exhibitors than 1990's record-breaking meeting.

ADMINISTRATORS' PROGRAM

There will be a one-day session for hospital and radiologist administrators attending The Society of Nuclear Medicine's Annual Meeting. In the morning, there will be speakers and a panel on topics, such as, industry's attitude toward health care costs, the cost of setting up and running a PET facility, and the future of nuclear medicine as reflected in the manufacturers' exhibition. In the afternoon, there will be conducted tours of the exhibit hall.

For further information contact:

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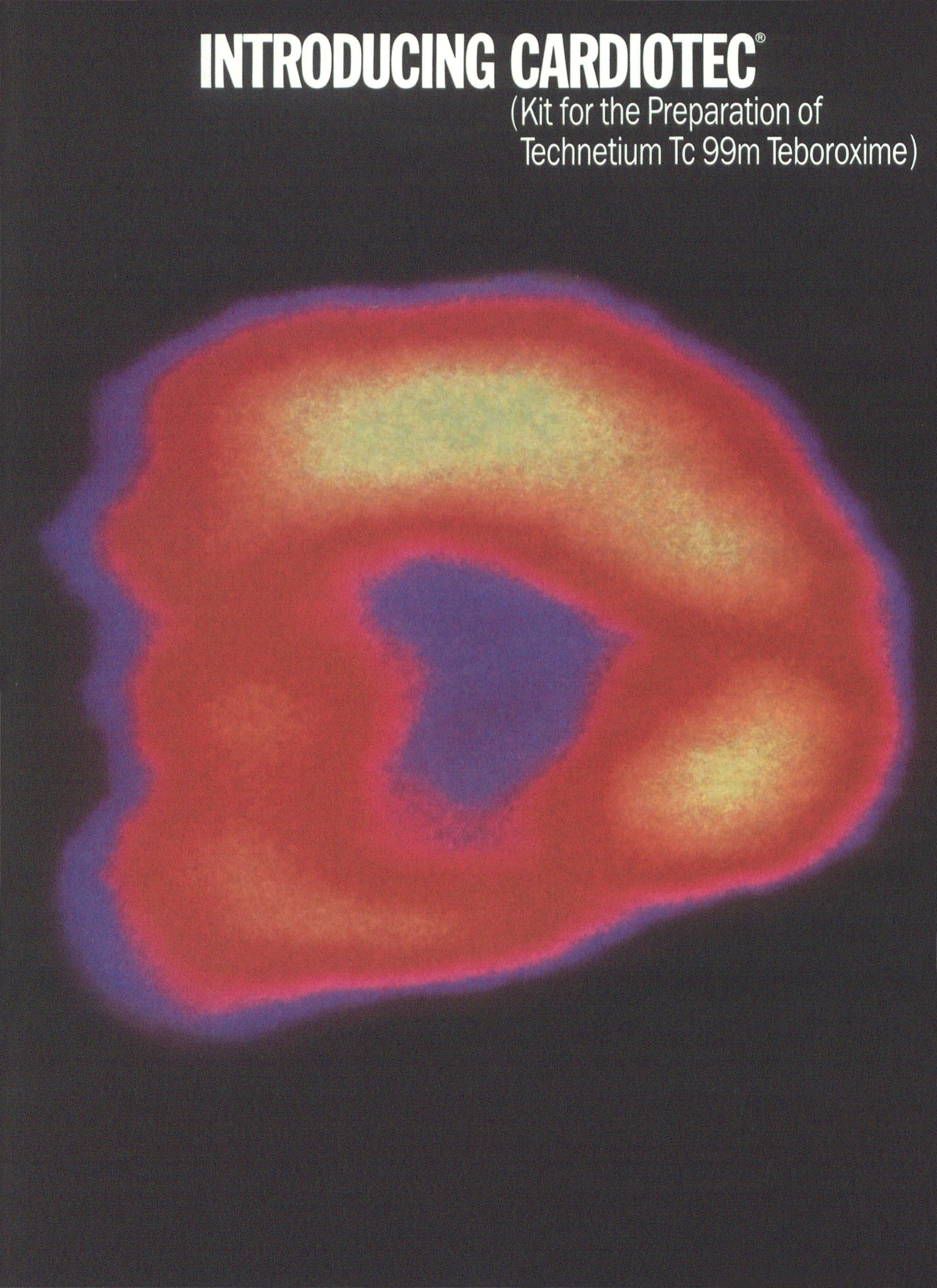

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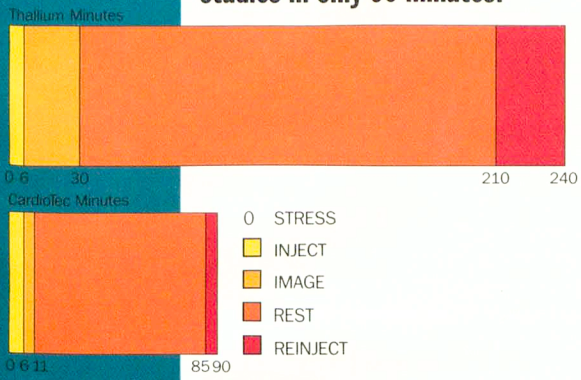

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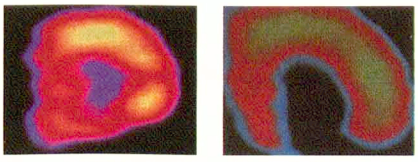

Good spatial resolution, high myocardial extraction, sensitivity and specificity enhance the ability to distinguish myocardial ischemia and infarction!

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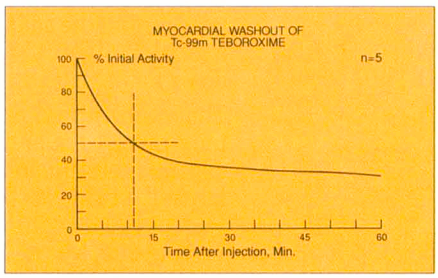

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FOR DIAGNOSTIC USE

DESCRIPTION

Each 5 mL reaction vial contains a sterile, nonpyrogenic, lyophilized formulation of 2.0 mg cyclohexanedione dioxime, 2.0 mg methyl boronic acid, 2.0 mg pentetic acid, 9.0 mg citric acid, anhydrous; 100 mg sodium chloride, 50 mg gamma cyclodextrin and 0.058 mg (maximum) total tin expressed as stannous chloride ($SnCL_2$), 0.020 mg (minimum) stannous chloride ($SnCl_2$). The pH is adjusted with sodium hydroxide and/or hydrochloric acid prior to lyophilization. The contents of the vial are lyophilized and sealed under nitrogen at the time of manufacture. No bacteriostatic preservative is present.

When sterile, pyrogen-free sodium pertechnetate Tc 99m injection is added to the vial, and the solution is heated at 100°C for 15 minutes, the diagnostic agent Technetium Tc 99m Teboroxime is formed for administration by intravenous injection. The pH of the reconstituted product is 3.7 (range 3.3 to 4.1).

INDICATIONS AND USAGE

Technetium Tc 99m Teboroxime is a myocardial perfusion agent that is useful in distinguishing normal from abnormal myocardium in patients with suspected coronary artery disease using rest and stress techniques.

CONTRAINDICATIONS

None known.

WARNINGS

Stress testing should be performed only under the supervision of a qualified physician and in a laboratory equipped with appropriate monitoring, resuscitation and support apparatus.

PRECAUTIONS

General

Contents of the reaction vial are intended only for use in the preparation of Technetium Tc 99m Teboroxime and are not to be administered directly to the patient.

Contents of the kit before preparation are not radioactive. However, after the addition of sodium pertechnetate Tc 99m injection, adequate shielding of the final preparation must be maintained.

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

The technetium Tc 99m labeling reactions involved in preparing the agent depend on maintaining the stannous ion in the reduced state. Any oxidant present in the sodium pertechnetate Tc-99m supply may thus adversely affect the quality of the radiopharmaceutical. Hence, sodium pertechnetate Tc-99m containing oxidants should not be employed.

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.

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

Tc-99m Teboroxime should be formulated no more than 6 hours prior to clinical use.

Carcinogenesis, Mutagenesis, Impairment of Fertility

In comparison with most other diagnostic technetium labeled radiopharmaceuticals, the radiation dose to the ovaries (1.8 rads/50 mCi) is high. Minimal exposure (ALARA) is necessary in women of childbearing capability. (See Dosimetry subsection in DOSAGE and ADMINISTRATION section.)

No long-term animal studies have been performed to evaluate carcinogenic potential or to determine the effects of Cardiotec on fertility in males or females.

Three different mutagenicity assays (a reversion test with bacteria, a chromosomal aberration assay and an *in vivo* mouse micronucleus assay) conducted with cold (decayed) technetium labeled Cardiotec gave negative results Cardiotec was weakly positive for inducing forward mutations at the TK locus in L5178Y mouse lymphoma cells in the absence of metabolic activation (but only at high concentrations that were toxic to the cells and reduced growth to 33% or less relative to vehicle controls). Cardiotec was negative in this assay in the presence of metabolic activation.

Pregnancy Category C

Animal reproduction studies have not been conducted with Technetium Tc 99m Teboroxime. It is also not known whether Technetium Tc 99m Teboroxime can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Technetium Tc 99m Teboroxime should be given to a pregnant woman only if the expected benefits to be gained clearly outweigh the potential hazards.

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

Pediatric Use

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

ADVERSE REACTIONS

Uncommon adverse reactions reported in clinical trials include metallic taste in mouth, burning at injection site, facial swelling, numbness of hand and arm, hypotension and nausea after administration of Technetium Tc 99m Teboroxime.

HOW SUPPLIED

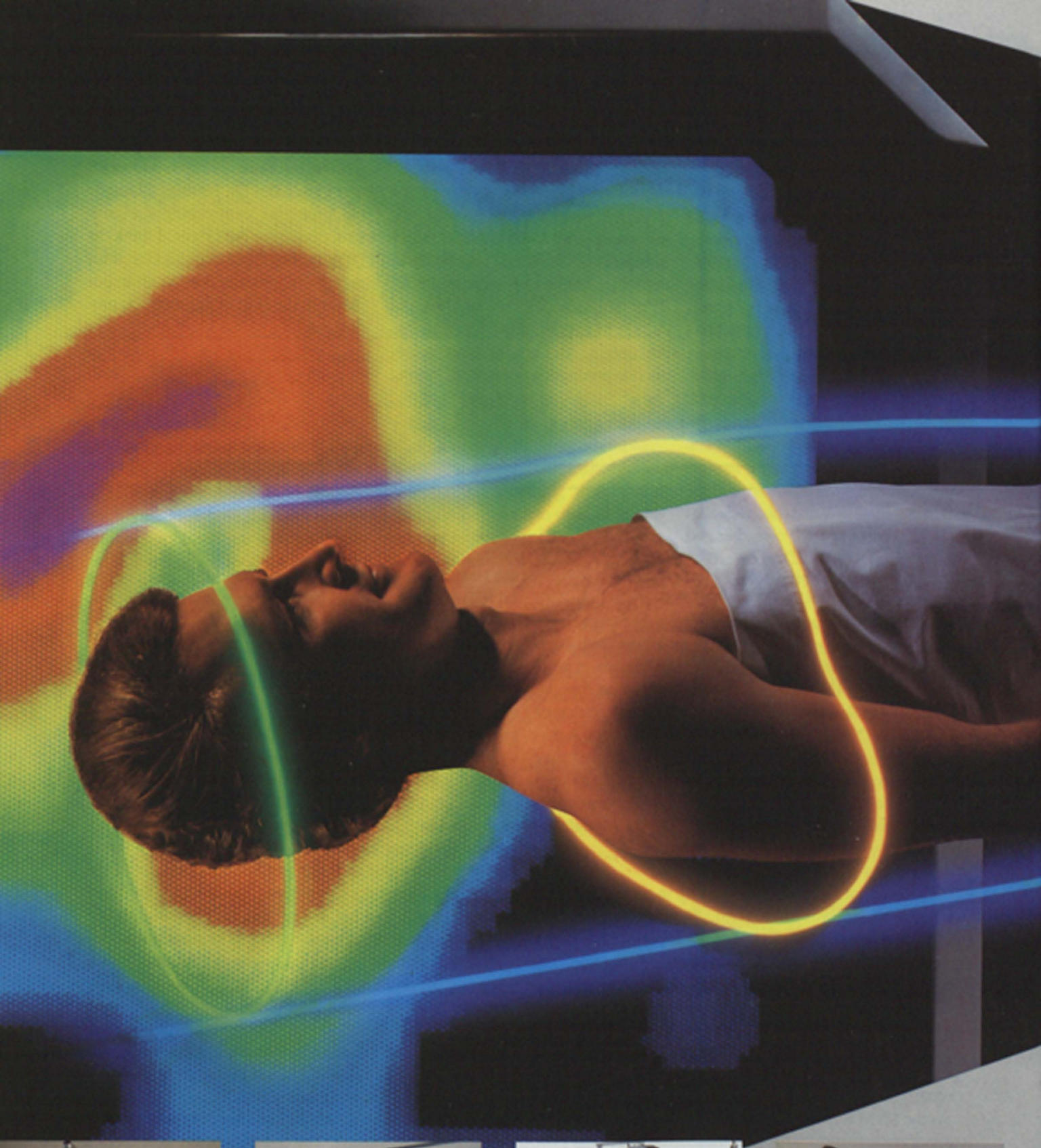
Cardiotec® (Kit for the Preparation of Technetium Tc 99m Teboroxime) is supplied in kits of 5, 10, and 25 reaction vials.

(J4-282A)

SQUIBB™ Diagnostics

Reference
1. Data on file, Squibb Diagnostics.

550-502 Issued: March 1991 Printed in U.S.A.



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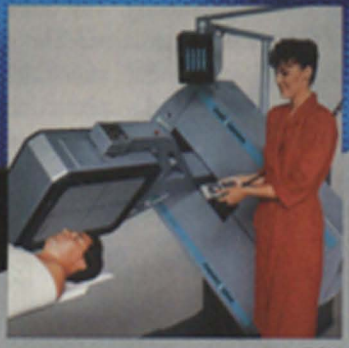

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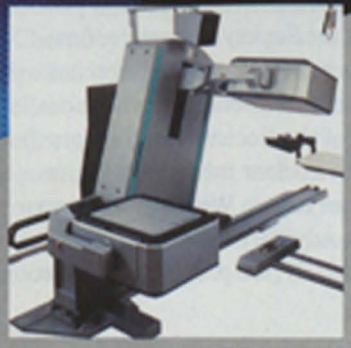

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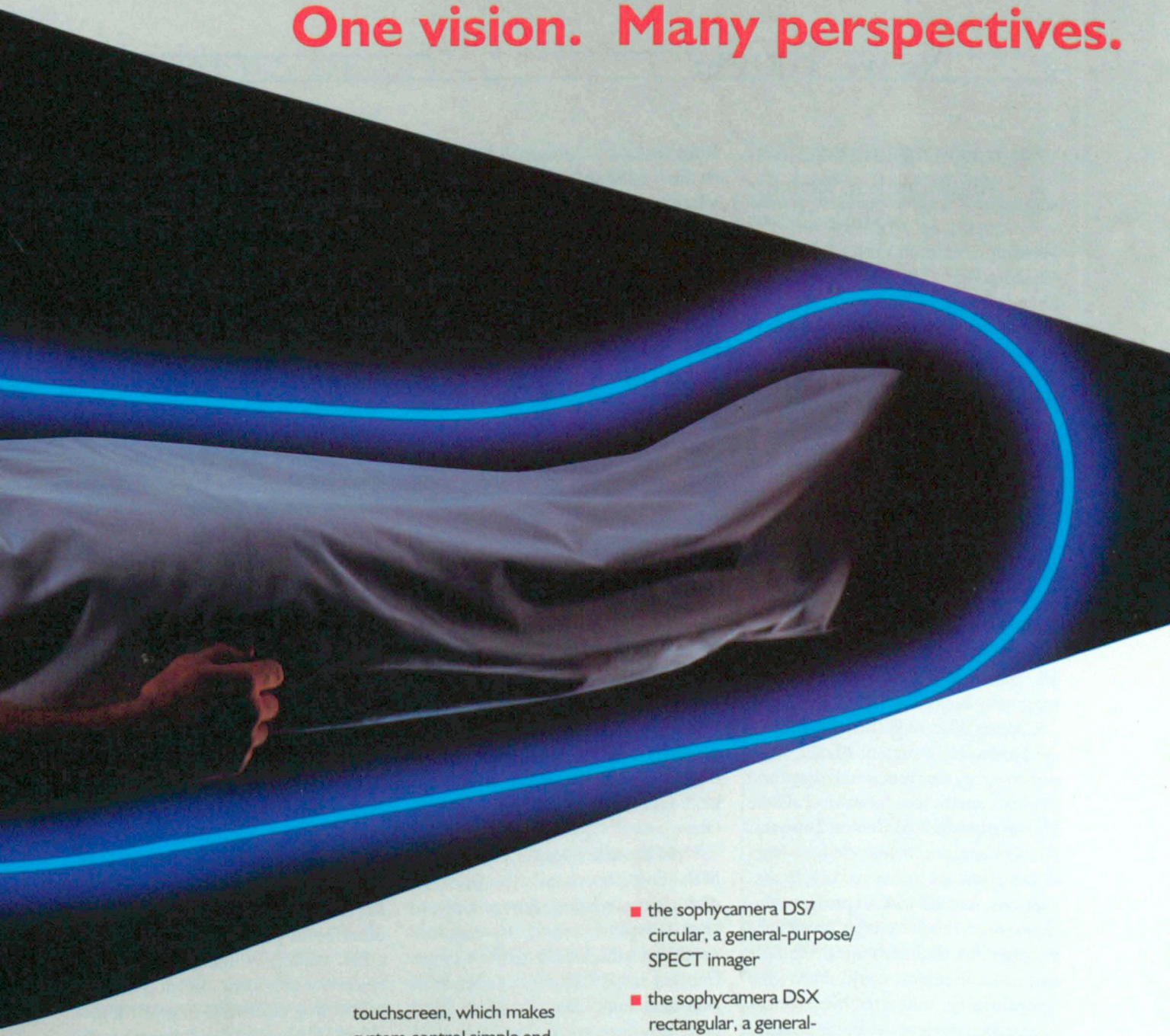

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sopha's diverse digital family

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- the sophycamera DS7 circular, a general-purpose/SPECT imager
- the sophycamera DSX rectangular, a general-purpose/SPECT imager
- the sophycamera DSX bodyTrak, a multihead WB/SPECT imager
- the sophycamera DSM, a mobile SFOV imager.

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sopha's digital technology, plus our comprehensive service and support, make the sophycamera family the best value in nuclear medicine today.

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Call for Abstracts for Works-in-Progress

The Society of Nuclear Medicine
38th Annual Meeting
Tuesday, June 11–Friday, June 14, 1991
Cincinnati, OH
Cincinnati Convention Center

The 1991 Scientific Program Committee and the Scientific & Teaching Sessions Committee solicit the submission of abstracts from members and nonmembers of The Society of Nuclear Medicine for the 38th Annual Meeting in Cincinnati, OH. Works-in-Progress accepted for the program will be published in a separate on-site show directory that will be distributed to all those who attend the meeting. The accepted Works-in-Progress will also be published in the September issue of the *The Journal of Nuclear Medicine* and, for the Technologist Section, in the September issue of the *Journal of Nuclear Medicine Technology*. Original contributions on a variety of topics related to nuclear medicine will be considered, including:

- **INSTRUMENTATION AND DATA ANALYSIS**
- **RADIOASSAY**
- **RADIOPHARMACEUTICAL CHEMISTRY**
- **DOSIMETRY/RADIOBIOLOGY**
- **NUCLEAR MAGNETIC RESONANCE CHEMISTRY**
- **CLINICAL SCIENCE APPLICATIONS**
  - **Bone/Joint**
  - **Cardiovascular (clinical and basic)**
  - **Endocrine**
  - **Gastroenterology**
  - **Neurology (clinical and basic)**
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Authors seeking publication for the full text of their papers are strongly encouraged to submit their work for immediate review to the *JNM*, and for the technologist section, to the *JNMT*.

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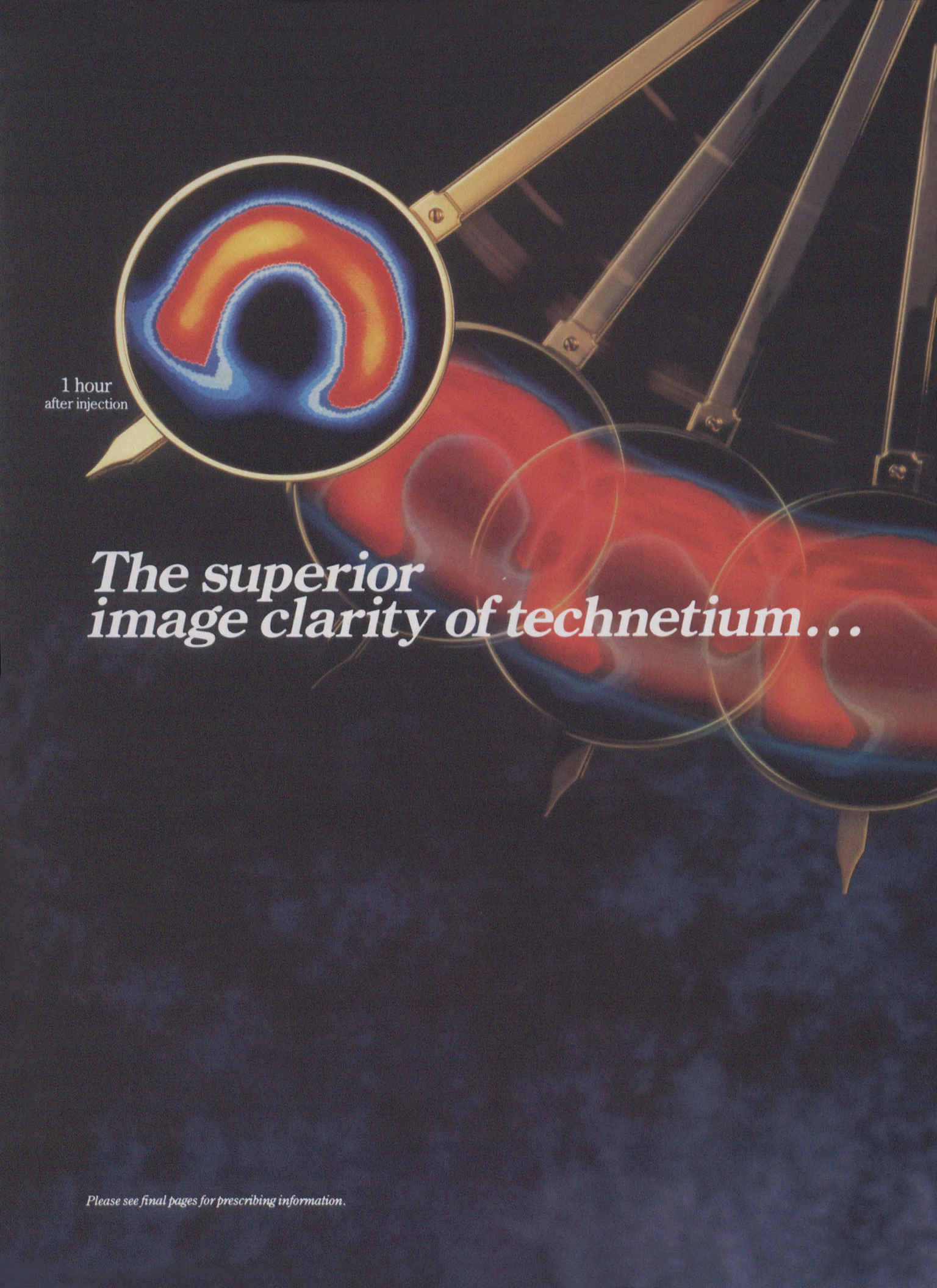

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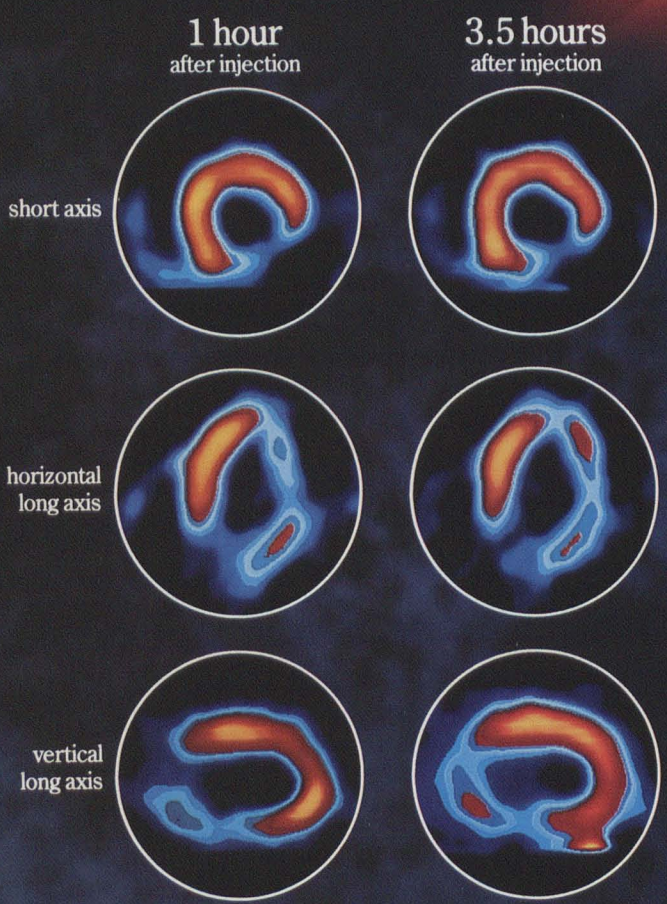

CARDIOLITE scans (SPECT) from a 61-year-old female 8 days following acute MI (LFOV camera, high-resolution collimator, 64 x 64 matrix, 180° arc RAO to LPO, 64 projections, 25 s/projection)

High degree of accuracy in detection of myocardial abnormalities

In blinded studies, CARDIOLITE imaging was 83% to 96% sensitive and 79% to 100% specific in detecting myocardial infarction, when compared with final diagnoses[1]

Reassuring safety profile

No known contraindications
Few adverse reactions

Of 2780 patients in worldwide trials, approximately 8% experienced a transient metallic taste following injection. A few cases of transient headache, mild nausea, flushing, and non-itching rash have also been reported. In worldwide commercial experience, one patient showed signs and symptoms consistent with seizure 8 to 10 min after injection. No other adverse reactions specifically attributable to the use of CARDIOLITE have been reported.[1]

Reference
1. Data on file, Du Pont File H-23531.

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Cardiolite®

Kit for the preparation of Technetium Tc99m Sestamibi

Clarity that lasts

FOR DIAGNOSTIC USE

DESCRIPTION: Each 5ml vial contains a sterile, non-pyrogenic, lyophilized mixture of:

Tetrakis (2-methoxy isobutyl isonitrile) Copper (I) tetrafluoroborate - 1.0mg
Sodium Citrate Dihydrate - 2.6mg
L-Cysteine Hydrochloride Monohydrate - 1.0mg
Mannitol - 20mg
Stannous Chloride, Dihydrate, minimum ($SnCl_2 \cdot 2H_2O$) - 0.025mg
Stannous Chloride, Dihydrate, ($SnCl_2 \cdot 2H_2O$) - 0.075mg
Tin Chloride (Stannous and Stannic) Dihydrate, maximum (as $SnCl_2 \cdot 2H_2O$) - 0.086mg

Prior to lyophilization the pH is 5.3 to 5.9. The contents of the vial are lyophilized and stored under nitrogen.

This drug is administered by intravenous injection for diagnostic use after reconstitution with sterile, non-pyrogenic, oxidant-free Sodium Pertechnetate Tc99m Injection. The pH of the reconstituted product is 5.5 (5.0–6.0). No bacteriostatic preservative is present.

The precise structure of the technetium complex is $Tc99m[MIBI]_6^+$ where MIBI is 2-methoxy isobutyl isonitrile.

PHYSICAL CHARACTERISTICS

Technetium Tc99m decays by isomeric transition with a physical half-life of 6.02 hours.[1] Photons that are useful for detection and imaging studies are listed in Table 1.

Table 1. Principle Radiation Emission Data

Radiation	Mean %/ Disintegration	Mean Energy (keV)
Gamma-2	89.07	140.5

[1]Kocher, David C., Radioactive Decay Data Tables, DOE/TIC-11026, 108 (1981).

EXTERNAL RADIATION

The specific gamma ray constant for Tc99m is 5.4 microcoulombs/kg-MBq-hr (0.78R/mCi-hr) at 1cm. The first half value layer is 0.017cm of Pb. A range of values for the relative attenuation of the radiation emitted by this radionuclide that results from interposition of various thicknesses of Pb is shown in Table 2. To facilitate control of the radiation exposure from Megabequerel (millicurie) amounts of this radionuclide, the use of a 0.25cm thickness of Pb will attenuate the radiation emitted by a factor of 1,000.

Table 2. Radiation Attenuation by Lead Shielding

Shield Thickness (Pb) cm	Coefficient of Attenuation
0.017	0.5
0.08	10^{-1}
0.16	10^{-2}
0.25	10^{-3}
0.33	10^{-4}

To correct for physical decay of this radionuclide, the fractions that remain at selected intervals after the time of calibration are shown in Table 3.

Table 3. Physical Decay Chart; Tc99m Half-Life 6.02 Hours

Hours	Fraction Remaining	Hours	Fraction Remaining
0*	1.000	8	.398
1	.891	9	.355
2	.794	10	.316
3	.708	11	.282
4	.631	12	.251
5	.562		
6	.501		
7	.447		

*Calibration Time

CLINICAL PHARMACOLOGY: Technetum Tc99m Sestamibi is a cationic Tc99m complex which has been found to accumulate in viable myocardial tissue in a manner analogous to that of Thallous Chloride Tl-201. Scintigraphic images obtained in animals and man after the intravenous administration of the drug have been comparable to those obtained with Thallous Chloride Tl-201 in normal and abnormal myocardial tissue.

The major pathway for clearance of Tc99m Sestamibi is the hepatobiliary system. Activity from the gall bladder appears in the intestines within one hour of injection. Twenty-seven percent of the injected dose is excreted in the urine, and approximately thirty-three percent of the injected dose is cleared through the feces in 48 hours. The agent is excreted without any evidence of metabolism.

Pulmonary activity is negligible even immediately after injection. Blood clearance studies indicate that the fast clearing component clears with a $t_{1/2}$ of 4.3 minutes at rest. At five minutes postinjection about 8% of the injected dose remains in circulation. There is less than 1% protein binding of Technetium Tc99m Sestamibi in plasma. The myocardial biological half-life is approximately six hours after a rest injection. The biological half-life for the liver is approximately 30 minutes after a rest injection. The effective half-life of clearance (which includes both the biological half-life and radionuclide decay) for the heart is approximately 3 hours, and for the liver is approximately 28 minutes, after a rest injection. The ideal imaging time reflects the best compromise between heart count rate and surrounding organ uptake.

A study in a dog myocardial ischemia model reported that Technetium Tc99m Sestamibi undergoes myocardial distribution (redistribution), although more slowly and less completely than Thallous Chloride Tl-201. A study in a dog myocardial infarction model reported that the drug showed no redistribution of any consequence. Definitive human studies to demonstrate possible redistribution have not been reported. In patients with documented myocardial infarction, imaging revealed the infarct up to four hours post dose.

Animal studies have shown that myocardial uptake is not blocked when the sodium pump mechanism is inhibited. Myocardial uptake which is coronary flow dependent is 1.2% of the injected dose. The following table illustrates the biological clearance as well as effective clearance (which includes biological clearance and radionuclide decay) of Tc99m Sestamibi from the heart and liver.

[Organ concentrations expressed as percentage of injected dose; data based on an average of 5 subjects.]

	Heart		Liver	
Time	Biological	Effective	Biological	Effective
5 mins.	1.2	1.2	20	20
30 mins.	1.1	1.0	12	11.3
1 hour	1.0	0.9	5.6	5.0
2 hours	1.0	0.8	2.2	1.7
4 hours	0.8	0.5	0.7	0.4

INDICATIONS AND USAGE: CARDIOLITE®, Kit for the preparation of Technetium Tc99m Sestamibi is a myocardial perfusion agent that is useful in distinguishing normal from abnormal myocardium, and in the localization of the abnormality, in patients with suspected myocardial infarction.

CARDIOLITE®, Kit for the preparation of Technetium Tc99m Sestamibi is also useful in the evaluation of myocardial function using the first pass technique.

CONTRAINDICATIONS: None known.

WARNINGS: In studying patients in whom cardiac disease is known or suspected, care should be taken to assure continuous monitoring and treatment in accordance with safe, accepted clinical procedure.

PRECAUTIONS:

GENERAL

The contents of the vial are intended only for use in the preparation of Technetium Tc99m Sestamibi and are not to be administered directly to the patient without first undergoing the preparative procedure.

Radioactive drugs must be handled with care and appropriate safety measures should be used to minimize radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to the patients consistent with proper patient management.

Contents of the kit before preparation are not radioactive. However, after the Sodium Pertechnetate Tc99m Injection is added, adequate shielding of the final preparation must be maintained.

The components of the kit are sterile and non-pyrogenic. It is essential to follow directions carefully and to adhere to strict aseptic procedures during preparation.

Technetium Tc99m labeling reactions involved depend on maintaining the stannous ion in the reduced state. Hence, Sodium Pertechnetate Tc99m Injection containing oxidants should not be used.

Technetium Tc99m Sestamibi should not be used more than six hours after preparation.

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

In comparison with most other diagnostic technetium labeled radiopharmaceuticals, the radiation dose to the ovaries (1.5 rads/30mCi) is high. Minimal exposure (ALARA) is necessary in women of childbearing capability. (See Dosimetry subsection in DOSAGE AND ADMINISTRATION section.)

The active intermediate, $Cu(MIBI)_4BF_4$, was evaluated for genotoxic potential in a battery of five tests. No genotoxic activity was observed in the Ames, CHO/HPRT and sister chromatid exchange tests (all *in vitro*). At cytotoxic concentrations ($\geq 20\mu g/ml$), an increase in cells with chromosome aberrations was observed in the *in vitro* human lymphocyte assay. $Cu(MIBI)_4BF_4$ did not show genotoxic effects in the *in vivo* mouse micronucleus test at a dose which caused systemic and bone marrow toxicity (9mg/kg, >600 × maximal human dose).

Pregnancy Category C

Animal reproduction and teratogenicity studies have not been conducted with Technetium Tc99m Sestamibi. It is also not known whether Technetium Tc99m Sestamibi can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. There have been no studies in pregnant women. Technetium Tc99m Sestamibi should be given to a pregnant woman only if clearly needed.

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

Nursing Mothers

Technetium Tc99m Pertechnetate is excreted in human milk during lactation. It is not known whether Technetium Tc99m Sestamibi is excreted in human milk. Therefore, formula feedings should be substituted for breast feedings.

Pediatric Use

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

ADVERSE REACTIONS: During clinical trials, approximately 8% of patients experienced a transient metallic or bitter taste immediately after the injection of Technetium Tc99m Sestamibi. A few cases of transient headache, flushing and non-itching rash have also been attributed to administration of the agent. One patient demonstrated signs and symptoms consistent with seizure, eight to ten minutes after administration of the drug. No other adverse reactions specifically attributable to the use of Technetium Tc99m Sestamibi have been reported.

DOSAGE AND ADMINISTRATION: The suggested dose range for I.V. administration to be employed in the average patient (70kg) is:

370-1110MBq (10-30mCi)

The dose administered should be the lowest required to provide an adequate study consistent with ALARA principles (See also PRECAUTIONS).

When used in the diagnosis of myocardial infarction, imaging should be completed within four hours after administration (see also CLINICAL PHARMACOLOGY).

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

Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration whenever solution and container permit.

Store at room temperature (15-30°C) before and after reconstitution.

RADIATION DOSIMETRY: The radiation doses to organs and tissues of an average patient (70 kg) per 1110MBq (30mCi) of Technetium Tc99m Sestamibi injected intravenously are shown in Table 4.

Table 4. Radiation Absorbed Doses from Tc99m Sestamibi

	Estimated Radiation Absorbed Dose			
	REST			
	2.0 hour void		4.8 hour void	
Organ	rads/ 30 mCi	mGy/ 1110 MBq	rads/ 30 mCi	mGy/ 1110 MBq
Breasts	0.2	2.0	0.2	1.9
Gallbladder Wall	2.0	20.0	2.0	20.0
Small Intestine	3.0	30.0	3.0	30.0
Upper Large Intestine Wall	5.4	55.5	5.4	55.5
Lower Large Intestine Wall	3.9	40.0	4.2	41.1
Stomach Wall	0.6	6.1	0.6	5.8
Heart Wall	0.5	5.1	0.5	4.9
Kidneys	2.0	20.0	2.0	20.0
Liver	0.6	5.8	0.6	5.7
Lungs	0.3	2.8	0.3	2.7
Bone Surfaces	0.7	6.8	0.7	6.4
Thyroid	0.7	7.0	0.7	6.8
Ovaries	1.5	15.5	1.6	15.5
Testes	0.3	3.4	0.4	3.9
Red Marrow	0.5	5.1	0.5	5.0
Urinary Bladder Wall	2.0	20.0	4.2	41.1
Total Body	0.5	4.8	0.5	4.8

Stabin, M., July, 1990, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831, (615) 576-3449.

INSTRUCTIONS FOR PREPARATION OF Technetium Tc99m Sestamibi

Preparation of the Technetium Tc99m Sestamibi from the Kit for the preparation of Technetium Tc99m Sestamibi is done by the following aseptic procedure:

a. Prior to adding the Sodium Pertechnetate Tc99m Injection to the vial, tear off a radiation symbol and attach it to the neck of the vial.
b. Waterproof gloves should be worn during the preparation procedure. Remove the plastic disc from the vial and swab the top of the vial closure with alcohol to sanitize the surface.
c. Place the vial in a suitable radiation shield with a fitted radiation cap.
d. With a sterile shielded syringe, aseptically obtain additive-free, sterile, non-pyrogenic Sodium Pertechnetate Tc99m Injection [925-5550MBq, (25-150mCi)] in approximately 1 to 3ml.
e. Aseptically add the Sodium Pertechnetate Tc99m Injection to the vial in the lead shield. Without withdrawing the needle, remove an equal volume of headspace to maintain atmospheric pressure within the vial.
f. Swirl the contents of the vial for a few seconds.
g. Remove the vial from the lead shield and place upright in a boiling water bath for 10 minutes. Timing for 10 minutes is begun as soon as the water begins to boil again.
h. Remove the vial from the water bath, place in the lead shield and allow to cool for fifteen minutes.
i. Using proper shielding, the vial contents should be visually inspected. Use only if the solution is clear and free of particulate matter and discoloration.
j. Assay the reaction vial using a suitable radioactivity calibration system. Record the Technetium Tc99m concentration, total volume, assay time and date, expiration time and lot number on the vial shield label and affix the label to the shield.
k. Store the reaction vial containing the Technetium Tc99m Sestamibi at room temperature (15-30°C) until use; at such time the product should be aseptically withdrawn. Technetium Tc99m Sestamibi should be used within six hours of preparation. The vial contains no preservative.

Note: Adherence to the above product reconstitution instructions is recommended.

Product should be used within 6 hours after preparation.

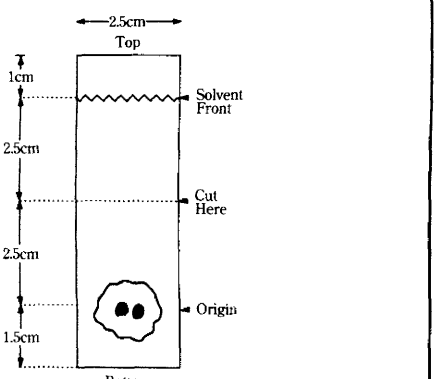
Final product with radiochemical purity of at least 90% was used in the clinical trials that established safety and effectiveness. The radiochemical purity was determined by the following method.

DETERMINATION OF RADIOCHEMICAL PURITY IN Technetium Tc99m Sestamibi

1. Obtain a Baker-Flex Aluminum Oxide coated, plastic TLC plate, #1 B-F, pre-cut to 2.5cm × 7.5cm.
2. Dry the plate or plates at 100°C for 1 hour and store in a desiccator. Remove pre-dried plate from the desiccator just prior to use.
3. Apply 1 drop of ethanol* using a 1ml syringe with a 22-26 gauge needle, 1.5cm from the bottom of the plate. THE SPOT SHOULD NOT BE ALLOWED TO DRY.
4. Add 2 drops of Technetium Tc99m Sestamibi solution, side by side on top of the ethanol* spot. Return the plate to a desiccator and allow the sample spot to dry (typically 15 minutes).
5. The TLC tank is prepared by pouring ethanol* to a depth of 3-4mm. Cover the tank and let it equilibrate for ~10 minutes.
6. Develop the plate in the covered TLC Tank in ethanol* for a distance of 5cm from the point of application.
7. Cut the TLC plate 4cm from the bottom and measure the Tc99m activity in each piece by appropriate radiation detector.
8. Calculate the % Tc99m Sestamibi as:

$$\%\ \text{Tc99m Sestamibi} = \frac{\mu\text{Ci Top Piece}}{\mu\text{Ci Both Pieces}} \times 100$$

TLC Plate Diagram



*The ethanol used in this procedure should be 95% or greater. Absolute ethanol (99%) should remain at ≥95% ethanol content for one week after opening if stored tightly capped, in a cool dry place.

HOW SUPPLIED: Du Pont's CARDIOLITE®, Kit for the preparation of Technetium Tc99m Sestamibi is supplied as a 5ml vial in kits of two (2), five (5) and thirty (30) vials, sterile and non-pyrogenic.

Prior to lyophilization the pH is between 5.3-5.9. The contents of the vials are lyophilized and stored under nitrogen. Store at room temperature (15-30°C) before and after reconstitution. Technetium Tc99m Sestamibi contains no preservatives. Included in each two (2) vial kit is one (1) package insert, five (5) vial shield labels and five (5) radiation warning labels. Included in each five (5) vial kit is one (1) package insert, five (5) vial shield labels and five (5) radiation warning labels. Included in each thirty (30) vial kit is one (1) package insert, thirty (30) vial shield labels and thirty (30) radiation warning labels.

The U.S. Nuclear Regulatory Commission has approved this reagent kit for distribution to persons licensed to use byproduct material identified in 35.100 and 35.200 of 10 CFR Part 35, to persons who hold an equivalent license issued by an Agreement State, and, outside the United States, to persons authorized by the appropriate authority.

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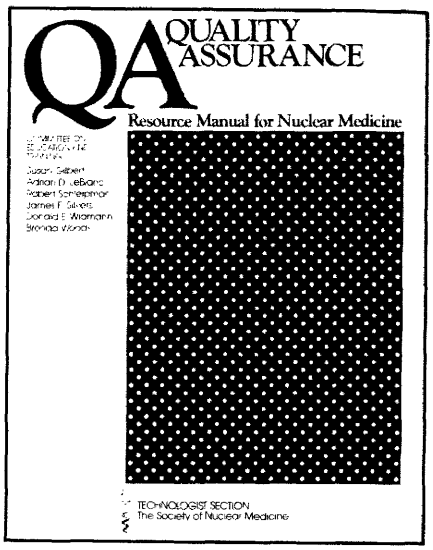

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The Medical College of Wisconsin is seeking an individual responsible for all aspects of the radiation safety program at the Medical College of Wisconsin, Froedtert Memorial Lutheran Hospital, and Milwaukee County Medical Complex. Responsibilities will include ensuring compliance with Nuclear Regulatory Commission requirements for the licenses held by MCMC on behalf of the three participating institutions. Position requires a B.S. degree with training in health physics, radiological physics or related field and a minimum of two years supervisory experience in radiation safety at a medical/research institution. Master's degree preferred. Send resumé to: Employment Office, Medical College of Wisconsin, 8701 Watertown Plank Road, Milwaukee, WI 53226. Equal Opportunity/Affirmative Action Employer M/F/H

Researcher

RESEARCH ASSOCIATE: Position available in the Division of Nuclear Medicine of the University of Cincinnati Medical Center. Assist in design and execution of complex and varied experimental activities involving radioactive materials, tissue culture techniques, preprartion of monoclonal antibodies, development of new radiopharmaceuticals for diagnostic and therapeutic application. Some routine preparation and quality control of radiopharmaceuticals for clinical use. Experience in protein chemistry (especially at micro level), synthetic organic chemistry, and instrumentation techniques (HPLC, radioactive counting, computer applications), are all desirable. Teaching experience helpful but not required. Requires M.S. in organic chemistry/biochemistry with minimum of 5 years related experience; will consider B.S. degree with 10 years of related research experience. A current CV and 3 letters of recommendation should be mailed to: Ruth M. McDevitt, Radioisotope Laboratory, University of Cincinnati Medical Center, Cincinnati, Ohio 45267-0577. The University of Cincinnati is an Equal Opportunity Employer.

Technologist

NUCLEAR MEDICINE TECHNOLOGIST. Immediate full-time, day shift position, rotating call for Registered Tech in our 210-bed regional Medical Center. Our department has 4 gamma cameras, one with SPECT. Located in central Washington, a perfect location for living and recreation, the area offers skiing, hiking, fishing, and boating as just a few of the opportunities available. Competitive salary and employer paid benefits. Contact Jerri Daily, Human Resources, St. Elizabeth Medical Center, 110 South 9th Avenue, Yakima, Washington 98902. (509) 575-5096. EOE.

NUCLEAR MEDICINE TECHNOLOGIST. St. John's Regional Health Center, an 866-bed acute care facility, has an immediate full-time opening for a registered technologist. Applicants must have experience in cardiovascular, data processing, SPECT imaging, and all other facets of nuclear medicine. We offer an excellent benefits package and salary. Send resumé to: Jerri Flikkema, Personnel Department, St. John's Regional Health Center, 1235 E. Cherokee, Springfield, MO 65804. (417) 885-2946.

NUCLEAR MEDICINE TECHNOLOGIST. Full-time position available for a registered or registry eligible Nuclear Medicine Technologist in a progressive, JCAHO accredited acute care hospital located on Lake of the Ozarks in Osage Beach, Missouri. Lake of the Ozarks is one of the fastest growing areas in Missouri making this an exciting place to live and a challenging environment for the health care professional. We offer excellent benefits and salary commensurate with experience. Please contact Jim Schaeffer, Lake of the Ozarks General Hospital, P.O. Box 187 CB, Osage Beach, MO 65065. (314) 348-8358. Equal Opportunity Employer

NUCLEAR MEDICINE TECHNOLOGIST. Big city technology with small town appeal! Full-time day shift position available immediately. Require certification by the NMTCB or ARRT(N). One year experience including SPECT experience preferred. Affiliated Health Services is a progressive 231-bed acute care regional referral center located in the beautiful Pacific Northwest one hour north of Seattle and surrounded by recreational opportunities. Please contact the Human Resources Department, 1415 E. Kincaid St., Mt. Vernon, WA 98273. (206) 428-2133. Equal Opportunity Employer.

NUCLEAR MEDICINE TECHNOLOGISTS. St. Francis Hospital and Medical Center, a 378-bed acute care facility is seeking an ARRT or CNMT registered or registry-eligible tech for a full-time day position. Our progressive dept. utilizes state-of-the-art equipment, processes 500 exams a month, and 4-5 SPECT

studies a day. Prior SPECT and computer experience desirable, but not mandatory. Contact Human Resources, 1700 W. 7th, Topeka, KS 66606. (913) 295-8131.

Positions Wanted

ABNM-certified MD seeks new full-time position. Extensive and varied NUCLEAR MEDICINE experience includes SPECT and features thyroid. Reply to: Box 202, The Society of Nuclear Medicine, 136 Madison Ave., New York, NY 10016-6760.

NUCLEAR PHYSICIAN, ABR/ABNM, for semi-academic private practice position. Extensive experience all areas NM except RIA. Experienced sonologist. 26 years computer experience, with interest in image capture/xmission, electronic networking, HIS/RIS/NMIS. Age 43, excellent health. Management training—ACPE I/II/III, TQF—and experience. Available 7/1/91. Reply to: The Society of Nuclear Medicine, Box 201, 136 Madison Ave., New York, NY 10016.

Equipment

For sale: Technicare 420/550, ADAC's vertical CDS, system I, system III, DPS 2800. We offer the highest prices for all types of nuclear medicine cameras & computers. Call Franklin at Imaging Solutions (415) 924-9155.

Raytheon Step I/Step II Gamma Camera System has 9I LFOV Detector, uniformity correction, multi-imager and 3 collimators w/carts (HiRes, G.P. and Medium Energy) $15,000.00. Installation available. Call (203) 483-5810 FAX (203) 481-8589, or write to: Connecticut Medical Systems, 550-29 East Main Street, Branford, CT 06405.

NUCLEAR MEDICINE TECHNOLOGISTS

The Saudi Arabian Oil Company (SAUDI ARAMCO), one of the world's largest producers and exporters of oil and gas, has openings for Nuclear Medicine Technologists in its Medical Services Organization in Saudi Arabia. Requires certification by ARRT or NMTCB; Bachelor's degree preferred. Must have a minimum of 4 years' experience in all Nuclear Medicine modalities, including Cardiac Imaging.

Compensation consists of a base salary and an expatriate premium (up to 45% of the base salary). Annually, there are up to 13 paid holidays, plus you will earn 36 vacation days and round-trip airfare to the U.S. or Canada. It's the chance of a lifetime to visit Europe, Africa and Asia. Additional benefits include a company matched savings plan, non-contributory group life insurance, and free medical care at company facilities.

For consideration, send your resume/salary history to: **ASC, Employment Dept. 06L-024-1, P.O. Box 4530, Houston, Texas 77210-4530, or call TOLL FREE 1-800-827-5700, Ext. 4199, or COLLECT (713)432-4199.**

SAUDI ARAMCO

The University of Pittsburgh Medical Center, Department of Radiology is expanding its Nuclear Medicine division to include a PET Center. Several openings are immediately available.

NUCLEAR MEDICINE

Physicist/Medical Physics

Candidates must be board certified or board eligible with a Ph.D. in Physics/Medical Physics. The candidates are required to have a thorough knowledge of gamma cameras, SPECT technology, and computers and will support the clinical Nuclear Medicine efforts. This position also requires teaching of residents, physicians, and other scientists in Nuclear Medicine, as well as providing support in various research activities within the Nuclear Medicine program.

PET CENTER

Medical Director of the Nuclear Medicine PET Center

Candidates must have experience in PET technology, administration of day-to-day operations, directing research, and interest in neuroscience, oncology and cardiac PET applications.

Radiochemist

Candidates must have a Ph.D. in chemistry or related discipline, good working knowledge of cyclotron operations and related chemistry/radiochemistry. The primary focus of the position will be PET Radiopharmaceutical Research and Development.

Physicist

Candidate must be board certified or board eligible and possess a Ph.D. in Physics or Medical Physics. The candidate must have experience in PET physics and instrumentation. The position requires physicist support and includes instrumentation, computer software development and collaboration with physicians, residents and other scientists involved in PET activities.

Salary and fringe benefits are very competitive. Faculty rank will be based on previous experience.

Inquiries and curriculum vitae should be addressed to:
Manuel L. Brown, M.D., Division of Nuclear Medicine,
University of Pittsburgh Medical Center, DeSoto at O'Hara Streets, Pittsburgh, PA 15213

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ASSOCIATE DIRECTOR, NUCLEAR MEDICINE

San Francisco General Hospital Medical Center
Department of Laboratory Medicine
University of California San Francisco

The Division of Nuclear Medicine is seeking an experienced physician to assist in directing the clinical services, teaching, and research for an established program. Faculty appointment will be at a level commensurate with qualifications and experience in an appropriate series in the Department of Laboratory Medicine. The incumbent will assist the Director of the Nuclear Medicine Division in all responsibilities and act for him in his absence. Duties include supervision of staff, management of an AMA-approved 2-year residency program, and clinical duties with opportunities for research and public service. Expertise in computerized methods is desirable. Two nuclear medicine residents are supervised on a daily basis; additional teaching opportunities depend on individual interests. Opportunity for research can draw on resources of University of California campuses at Berkeley and Davis as well as at San Francisco. Participation in the activities of professional societies is supported and encouraged.

Qualifications: Eligible for medical licensure in California, certification by the American Board of Nuclear Medicine, and suitable for appointment to the faculty of the University of California San Francisco.

Interested candidates should submit references and curriculum vitae to: **Melvin D. Cheitlin, M.D., Chairman, Search Committee, Cardiology Division, Room 5G1, San Francisco General Hospital, San Francisco, CA 94110.**

The University of California, San Francisco is an equal opportunity and affirmative action employer. Minority, women, handicapped, and veteran candidates are encouraged to apply.

CHIEF

NUCLEAR MEDICINE TECHNOLOGIST

The Nuclear Medicine department of a progressive acute medical center has an exciting and challenging career opportunity for an experienced individual to assume an administrative position.

Equipment includes two state-of-the-art SPECT cameras, one portable camera and three computers. Certification by the ARRT and NMTCB is required. Bachelor's Degree is preferred.

Competitive salary with an excellent flexible benefit program.

Please send resumé to:

Department of Human Resources
Inter-Community Medical Center
303 N. Third Avenue
Covina, CA 91723

NUCLEAR MEDICINE RESIDENCY-

July 1, 1991

The University of Tennessee Medical Center/Knoxville is offering two positions in a 2-year ACGME-approved program designed to provide competency in all aspects of Nuclear Medicine to meet the requirement of the American Board of Nuclear Medicine.

UTMCK is a 600-bed hospital and the regional referral center for East Tennessee. The Section of Nuclear Medicine is part of the Department of Radiology, a comprehensive diagnostic imaging center with x-ray radiography, CT, MRI and clinical PET. The Nuclear Medicine Section performs 6000 conventional imaging procedures, 21,000 RIAs and more than 1000 clinical PET studies per year. The program includes extensive training in conventional procedures, nuclear cardiology, SPECT imaging, PET and therapy with radionuclides. The Nuclear Medicine Section is equipped with an up-to-date image processing laboratory and the entire department is interconnected through an ethernet communication system.

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Karl F. Hubner, MD
Chief, Nuclear Medicine

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Nuclear Medicine Technologists

Hahnemann University, a 616-bed university teaching hospital, is seeking full-time staff technologists for the departments of:

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Nuclear Medicine Technologist

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We offer an excellent salary and benefits package as well as the opportunity for professional growth. Interested candidates may apply to: **Department of Employee Affairs, 224 Alexander Street, Rochester, NY 14607.** An Equal Opportunity Employer M/F.

The Genesee Hospital

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TECHNOLOGIST JOB NETWORK

The New England Chapter–SNM/TS announces "**The Job Hotline,**" a national toll-free, hotline for nuclear medicine. The hotline is designed to provide a quick link for technologists seeking jobs and for hospitals seeking technologists. Institutions seeking technologists should call the hotline number, leave the name of the institution, title of the job opening, and name and number of the contact person; data are then stored for three months in a database for anyone who calls the hotline seeking employment. Technologists seeking employment should call the hotline number, specify state(s) which are of interest, specify type of job desired, and leave name and address. A listing will then be sent out in 48 hours; all inquiries are kept confidential. If an opening has not been filled within three months, the institution should call again to have it listed. The institution should also call if an opening has been filled so that it can be deleted from the database. The hotline numbers are **1-800-562-6387 (1-800-JOB-NETS)** or **1-990-4212 in Maine.** Questions or comments should be directed to: Tom Starno, Manager, Job Hotline, New England Chapter–TS at **(207) 945-7186.**

The Mideastern Chapter–SNM/TS will provide a referral network for technologists seeking employment and for hospitals in need of technologists. Interested individuals should call Cathy Gonzalez at **(301) 855-1712.** Please leave your name, address, phone number and a brief description of your request.

NOTE: SNM chapters are invited to submit job referral service listings for publication. Pertinent information—name and brief description of the service, telephone number and/or address, name or number of contact person for inquiries–should be sent to:

Joan Hiam, Section Editor, **JNM/JNMT** The Society of Nuclear Medicine, 136 Madison Avenue New York, NY 10016-6760.

RADIATION SAFETY OFFICER

As a vital part of our Department of Environmental Health and Safety, you will operate and supervise our radiation protection program for our medical school, research laboratories and associated hospital. Assure compliance with all applicable rules and regulations (i.e. NYC Department of Health Articles 75, NYSDEC, USDOT and USNRC), conduct quarterly inspections and survey of laboratories; conduct worker training; conduct all surveys, and checks for ionizing and non-ionizing radiation equipment; and be responsible for quality assurance for x-ray units for affiliated hospitals.

The successful candidate will have a minimum of 5 years experience supervising a radiation protection program in a medical/research institution or comparable experience. A master's degree in radiation protection or occupational health and certification in health physics is recommended.

We also have a position available for

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Send resume, indicating desired position and salary requirements, to: **Donna Modafferi, Personnel Dept, AECOM, Jack and Pearl Resnick Campus, 1300 Morris Park Ave, Bronx, NY 10461.** EOE.

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We offer an excellent salary and benefits program. For more information contact Sandi Jackson, Recruiting Specialist, or send resume to:

CAROLINAS MEDICAL CENTER
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Charlotte, NC 28232

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1-800-772-6133 (ext 2101) inside NC
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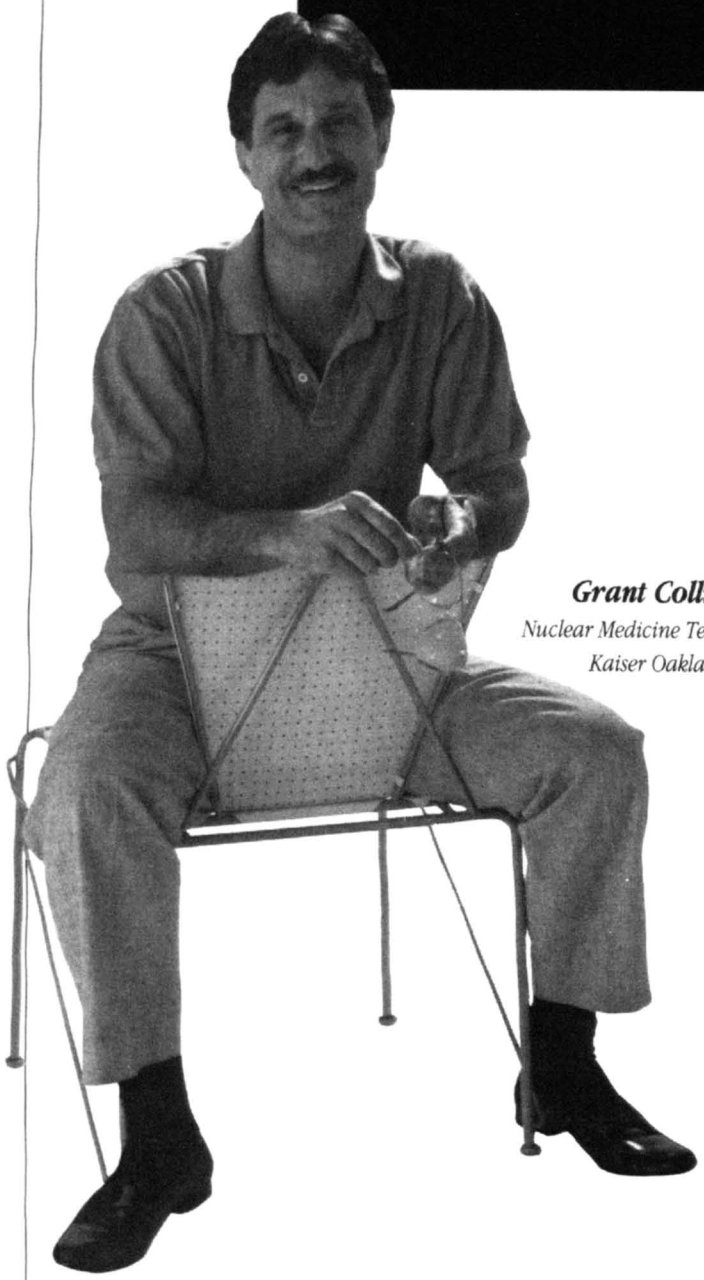

Grant Collins
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To learn more about our opportunities for those with an ARRT or Nuclear Medicine Technologist certificate, benefits, and highly competitive salaries, please call Pamela Woods at: 1-800-522-0045. Or write her at: Kaiser Permanente Medical Care Program, Regional Recruitment Services, 1814 Franklin, 5th Floor, Oakland, CA 94612. We are an EEO/AA employer. Minorities, women, handicapped and veterans are encouraged to apply.

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Department of Radiology
Section of Nuclear Medicine

MEDICAL COLLEGE OF WISCONSIN

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- Appreciation of factors that influence image quality.
- Knowledge of quality control techniques for SPECT.

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This program is sponsored by the Medical College of Wisconsin.

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Nuclear Medicine Division
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Title	Member	Non-Member	Quantity	Sub-Total
SPECT: A Primer, 2nd Ed., 1990. *English & Brown.*	$20.00	$ 25.00		
Quality Assurance Resource Manual for Nuclear Medicine, 1990. *Gilbert et al.*	$18.00	$ 25.00		
MIRD: Radionuclide Data and Decay Schemes, 1989. *Weber et al.*	$45.00	$ 60.00		
Nuclear Medicine: Self-Study Program I, 1988. *Siegel & Kirchner, eds.* (price includes postage) **$75 for Residents and Technologists.*	$90.00*	$115.00*		
The Scintillation Camera, 1988. *Simmons et al.*	$30.00	$ 35.00		
MIRD Primer for Absorbed Dose Calculations, 1988. *Loevinger et al.*	$35.00	$ 50.00		
Fundamentals of Nuclear Medicine, 2nd Ed, 1988. *Alazraki & Mishkin.*	$15.00	$ 15.00		
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Low-Level Radiation Effects: A Fact Book, 1982. (includes 1985 updates) *Brill*	$20.00	$ 20.00		
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Laboratory Manual for Nuclear Medicine Technology, 1984. *Hibbard & Lance.*	$14.00	$ 16.00		
Chromatography of Technetium-99m Radiopharmaceuticals—Practical Guide, 1984. *Robbins.*	$ 8.00	$ 10.00		
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Fundamentals of Nuclear Medicine

2nd Edition

Edited by Naomi P. Alazraki, MD and Fred S. Mishkin, MD

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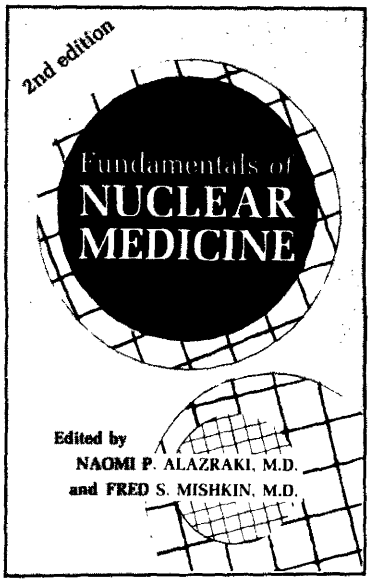

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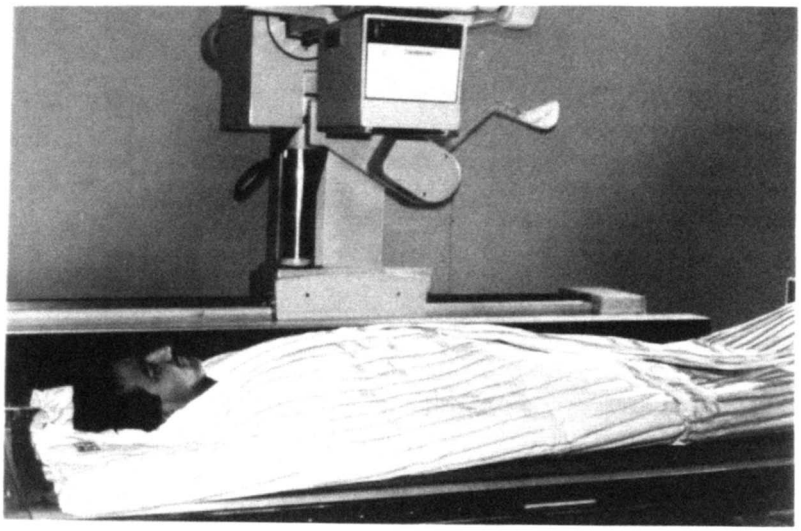
Each description of the products below was condensed from information supplied by the manufacturer. The reviews are published as a service to the professionals working in the field of nuclear medicine and their inclusion herein does not in any way imply an endorsement by the Editorial Board of The Journal of Nuclear Medicine *or by The Society of Nuclear Medicine.*

Moldable Immobilizer/Positioner



Nuclear Associates has developed a patient positioning control system that holds patients without the time-consuming use of tapes and straps. The Calergo Immobilizer/Positioner is a tough, lightweight, plastic mattress that is loosely filled with radiolucent polystyrene beads. The patient is wrapped in the mattress, a vacuum source removes the air from the mattress, and the beads are drawn together, shaping the mattress to the body's contours. The patient is immobilized firmly but comfortably; there is absolutely no pressure on the body. It is ideal for children and geriatric patients who cannot remain still. The system only takes seconds to immobilize or release the patient and provides precise reproducible positioning. Calergo is available in a range of whole-body and partial-body sizes. **Martin Ratner, Nuclear Associates, A Division of Victoreen, Inc., 100 Voice Road, Carle Place, NY 11514. (516) 741-6360.**

Circle Reader Service No. 101

Fiber Optic Back Pointer

Gammex, Inc. has introduced a fiber optic back pointer that is used in conjunction with wall-mounted patient alignment systems. Wall-mounted lasers project transverse beams of laser light that surround the patient. These light planes, combined with the light plane produced by the fiber optic back pointer, create an intersection defining the radiation exit axis. This is crucial for any tangential treatments. With its fine bright line, the fiber optic back pointer defines the axis of the radiation source as well as the isocenter, regardless of gantry orientation. Because the patient alignment is so precise, positioning time is decreased allowing for greater patient throughput. The resulting preciseness of the patient positioning prevents harm to healthy tissue. The laser light of the back pointer is transmitted through a flexible fiber optic cable to a compact projection head that is easily mounted on or in the radiation therapy unit. Clearance is never a problem because of the small size of the output head. The cable and optical heads carry no electrical power and will not interfere with other equipment. The pointer can be adapted for use on all therapy equipment with or without retractable beam stoppers. The fiber optic back pointer can be addded to any installed laser system. The resulting upgrade provides the most accurate patient positioning possible. **Gammex Lasers, Inc., P.O. Box 26708, Milwaukee, WI 53226. (414) 258-1333 or (800) 426-6391.**

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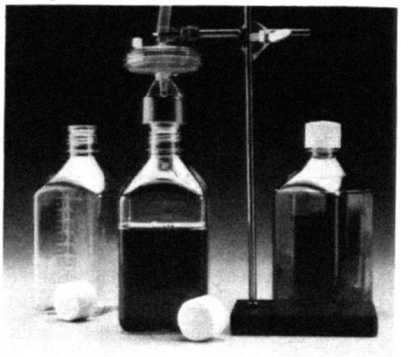
Disposable Filter Capsules



Nalge Company introduces Nalgene disposable filter capsules, available in 5- and 10-liter sizes. They are designed for single-use positive pressure filtration of tissue culture media and other aqueous solutions. Positive pressure filtration prevents foaming and protein denaturation. The capsules have cellulose acetate membranes, which are low in extractables and exhibit low protein binding. The capsules feature patented stacks of specially designed membranes and support plates that yield compact units with large filtration areas. A patented vent design allows controlled venting of trapped air before filtration to prevent membrane blockage and increase fluid flow. The presterilized capsules have a filtering capacity of one to ten liters, depending on the size of the capsule and type of solution filtered. These compact capsules are certified to be noncytotoxic, nonpyrogenic, and 100% integrity tested. **Jorge M. Pardo, Marketing Communications, Nalge Company, A subsidiary of Sybron Corporation, 75 Panorama Creek Drive, Box 20365, Rochester, NY 14602. (716) 586-8800.**

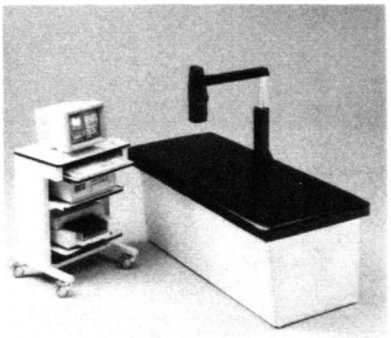
Circle Reader Service No. 103

New Power Ratings for UPS Line

Sola has added 900, 1300, and 1800 VA power ratings to its Sidekick Uninterruptible Power System (UPS) product line. When operating under AC line, they provide excellent noise and surge protection. If the incoming voltage falls below 102 VAC, the inverter instantly switches on, allowing the protected system to continue operation. The new Sidekicks feature sinusoidal output to handle multiple loads at higher power levels and the microprocessor design assures high reliability and performance. **Sola, A Unit of General Signal, 1717 Busse Road, Elk Grove Village, IL 60007. (708) 439-2800.**

Circle Reader Service No. 104

Rectilinear Thyroid Scanner



Atomic Products introduces the Atomlab Rectilinear Thyroid Scanner, a scanner that is state-of-the-art in thyroid uptake and scan procedures. Employing a rectilinear scan pattern, the device produces a 1:1 image ratio not readily accomplished on traditional gamma cameras. This true image is projected on a color monitor with a variety of format options, including film and laser black & white and color printouts. A built-in quality assurance program guides the user through the daily calibration and spectrum routines and can be programmed to print all stored data for compliance with regulatory agencies. Uptake information is calculated and stored along with gland mass measurement and region of interest identification. Fiber optic lights allow for immediate marker notation and labeling either during patient set-up or on the report format. The extensive database stores over 500 studies with each patient's scan selectively held in one file. The small space requirement makes the scanner a useful addition in a clinic or office environment. **Atomic Products Corporation, P.O. Box 702, Shirley, NY 11967. (516) 924-9000.**

Circle Reader Service No. 105

Alpha Spectroscopy Software

Canberra Nuclear Products Group announces AlphaWorks, a complete personal computer software package for alpha spectroscopy control and analysis. AlphaWorks is an extension of the existing ASP Alpha Spectroscopy Package. The new software controls the entire alpha spectroscopy process from starting counts to analyzing groups of spectra. Virtually any sample type can be analyzed including tracerless, tracer-based PERALS and Frisch Grid spectra. The software facilitates analysis of both well-separated peaks and multiplets. Regions of interest are automatically set up and calculated based on sample types. The user can add to or delete from peaks. Automation does not sacrifice the alpha spectroscopist's expert interpretation of the results. The new package allows users to calculate minimum detectable activities and will report negative results. Further, the report format can be edited. Upgrades from the ASP package to Alphaworks are available . **Canberra Nuclear Products Group, One State Street, Meriden, CT 06450. (203) 238-2351. (800) 243-3955.**

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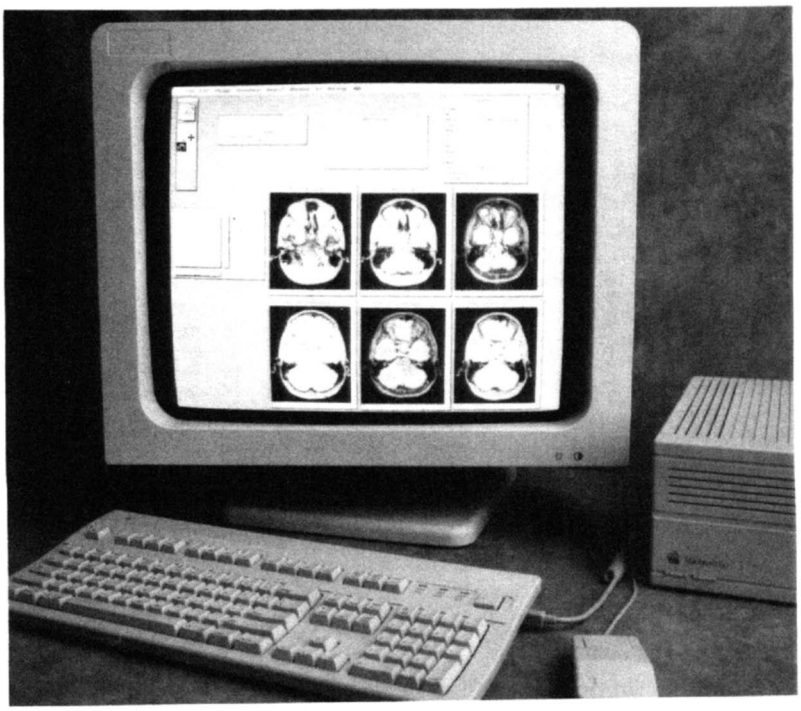
Medical Image Display System



Vortech Data, Inc. announces the availability of the Personal Display System™ (PDS), a computer/software package for displaying diagnostic quality medical images. PDS combines high performance and a low price with the flexibility to customize the system for specific applications. The high performance system is built on the Apple® Macintosh® platform and is offered with a variety of software and hardware options. In combination with the Medical Imaging Gateway™ (MIG), the PDS aquires images from any local area network operating with an ACR-NEMA standard interface for digital data. Images from any digital modality can be displayed along with digitized film and images retrieved from Vortech's optical archive electronic image library. Conversely, images displayed on the PDS can be distributed via the Image Transmission Network℠ (ITN) using wide area connections ranging from the public telephone network to high speed digital land lines to Vortech's satellite network service. **Vortech Data, Inc., 10700 Parkridge Blvd., Reston, VA 22091. (703) 264-0020 or (800) 869-9998.**

Circle Reader Service No. 107

New MRI Devices

Hitachi Medical Systems America, Inc. announces the introduction of two new magnetic resonance imaging (MRI) devices to the U.S. market. The MRP-5000, an enhanced version of the MRP-20, (Hitachi's 0.2 Tesla product), features Hitachi's HS/MR coil technology for improved image quality plus additional options for increasing patient throughput. The MRP-7000 features a new 0.3 Tesla vertical-field permanent magnet and a powerful new computer. The extremely efficient system operation and rapid imaging techniques allow throughput that rivals the more expansive high-field systems. Both systems continue to offer low operating costs and high reliability. **Richard L. Ernst, Hitachi Medical Systems America, Inc., 1993 Case Parkway, Twinsburg, OH 44087. (216) 425-1313.**

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Cardiotec®

Kit for the Preparation of Technetium Tc 99m Teboroxime

FOR DIAGNOSTIC USE

DESCRIPTION

Each 5 mL reaction vial contains a sterile, nonpyrogenic, lyophilized formulation of 2.0 mg cyclohexanedione dioxime, 2.0 mg methyl boronic acid, 2.0 mg pentetic acid, 9.0 mg citric acid, anhydrous; 100 mg sodium chloride, 50 mg gamma cyclodextrin and 0.058 mg (maximum) total tin expressed as stannous chloride ($SnCL_2$), 0.020 mg (minimum) stannous chloride ($SnCl_2$). The pH is adjusted with sodium hydroxide and/or hydrochloric acid prior to lyophilization. The contents of the vial are lyophilized and sealed under nitrogen at the time of manufacture. No bacteriostatic preservative is present.

When sterile, pyrogen-free sodium pertechnetate Tc 99m injection is added to the vial, and the solution is heated at 100°C for 15 minutes, the diagnostic agent Technetium Tc 99m Teboroxime is formed for administration by intravenous injection. The pH of the reconstituted product is 3.7 (range 3.3 to 4.1).

INDICATIONS AND USAGE

Technetium Tc 99m Teboroxime is a myocardial perfusion agent that is useful in distinguishing normal from abnormal myocardium in patients with suspected coronary artery disease using rest and stress techniques.

CONTRAINDICATIONS

None known.

WARNINGS

Stress testing should be performed only under the supervision of a qualified physician and in a laboratory equipped with appropriate monitoring, resuscitation and support apparatus.

PRECAUTIONS

General

Contents of the reaction vial are intended only for use in the preparation of Technetium Tc 99m Teboroxime and are not to be administered directly to the patient.

Contents of the kit before preparation are not radioactive. However, after the addition of sodium pertechnetate Tc 99m injection, adequate shielding of the final preparation must be maintained.

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

The technetium Tc 99m labeling reactions involved in preparing the agent depend on maintaining the stannous ion in the reduced state. Any oxidant present in the sodium pertechnetate Tc-99m supply may thus adversely affect the quality of the radiopharmaceutical. Hence, sodium pertechnetate Tc-99m containing oxidants should not be employed.

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.

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

Tc-99m Teboroxime should be formulated no more than 6 hours prior to clinical use.

Carcinogenesis, Mutagenesis, Impairment of Fertility

In comparison with most other diagnostic technetium labeled radiopharmaceuticals, the radiation dose to the ovaries (1.8 rads/50 mCi) is high. Minimal exposure (ALARA) is necessary in women of childbearing capability. (See Dosimetry subsection in DOSAGE and ADMINISTRATION section.)

No long-term animal studies have been performed to evaluate carcinogenic potential or to determine the effects of Cardiotec on fertility in males or females.

Three different mutagenicity assays (a reversion test with bacteria, a chromosomal aberration assay and an *in vivo* mouse micronucleus assay) conducted with cold (decayed) technetium labeled Cardiotec gave negative results Cardiotec was weakly positive for inducing forward mutations at the TK locus in L5178Y mouse lymphoma cells in the absence of metabolic activation (but only at high concentrations that were toxic to the cells and reduced growth to 33% or less relative to vehicle controls). Cardiotec was negative in this assay in the presence of metabolic activation.

Pregnancy Category C

Animal reproduction studies have not been conducted with Technetium Tc 99m Teboroxime. It is also not known whether Technetium Tc 99m Teboroxime can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Technetium Tc 99m Teboroxime should be given to a pregnant woman only if the expected benefits to be gained clearly outweigh the potential hazards.

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

Pediatric Use

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

ADVERSE REACTIONS

Uncommon adverse reactions reported in clinical trials include metallic taste in mouth, burning at injection site, facial swelling, numbness of hand and arm, hypotension and nausea after administration of Technetium Tc 99m Teboroxime.

HOW SUPPLIED

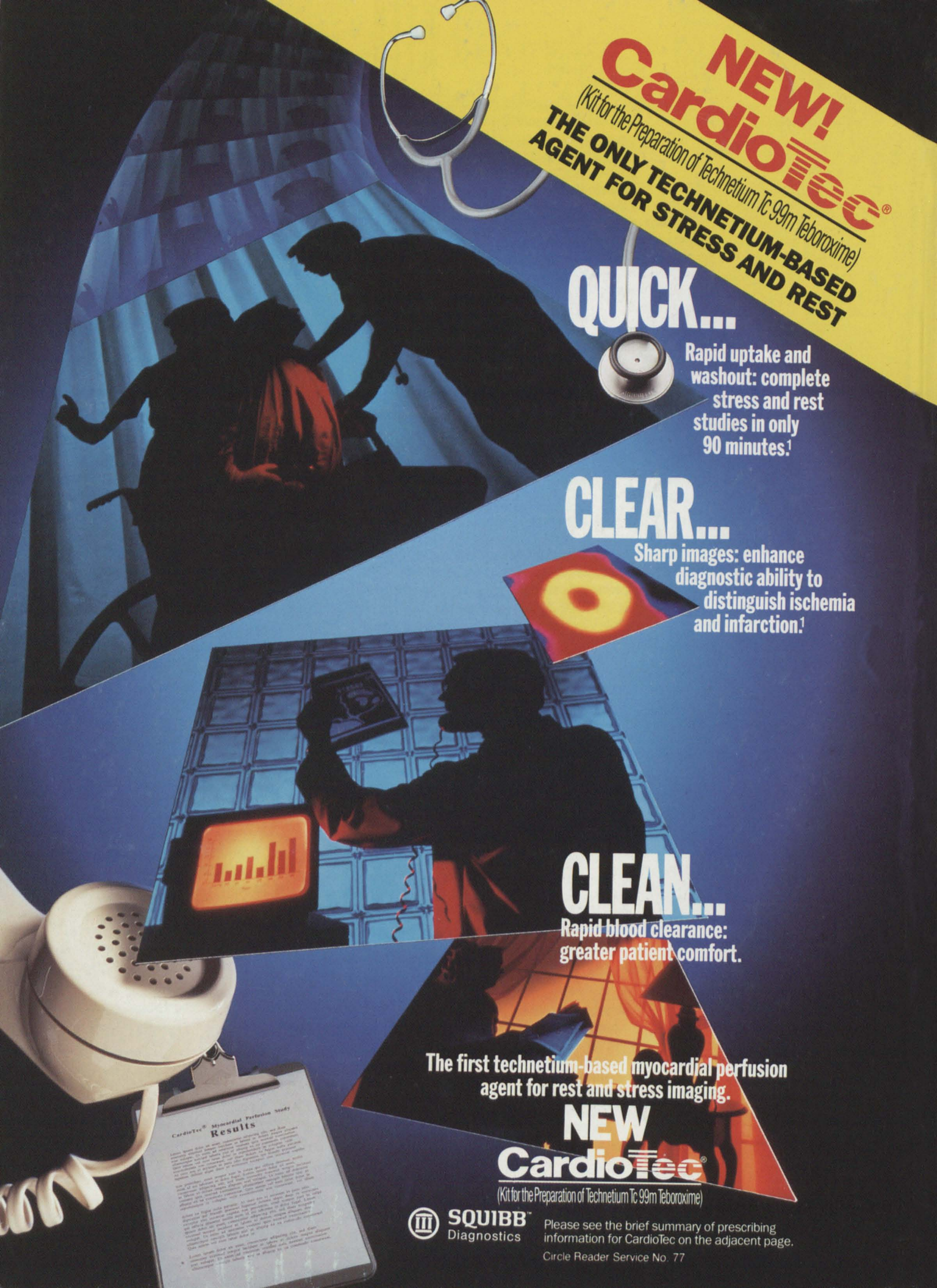
Cardiotec® (Kit for the Preparation of Technetium Tc 99m Teboroxime) is supplied in kits of 5, 10, and 25 reaction vials.

(J4-282A)

SQUIBB™ Diagnostics

Reference
1. Data on file, Squibb Diagnostics.

550-502 Issued: March 1991 Printed in U.S.A.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