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Circle Reader Service No. 2
A Profile of Progress in Nuclear Medicine
The Years of Growth
Nuclear medicine emerged from the experimental stage into a phase of rapid clinical growth. The number of procedures performed rose rapidly during the 1960s. During this same period, Squibb Diagnostics developed and introduced important products and services for nuclear medicine, including the first sterile technetium generator, nuclear medicine training seminars and technical support through the Technical Associates Program.

The Years of Refinement
The '70s saw the development of other imaging modalities which drew procedures away from nuclear medicine and slowed its growth. Developments and advances continued, however, and Squibb introduced a variety of radiopharmaceutical products, including Macrotec. Squibb’s Choletec® was introduced in 1987, and quickly became the premier hepatobiliary imaging agent.

Tesuloid®
(Kit for the Preparation of Technetium Tc99m Sulfur Colloid)

Albumotope-LS®
(Aggregated Radio-iodinated [131I] Albumin [Human])

Iodotope® I 131
(Sodium Iodide I 131 USP)
(diagnostic and therapeutic)

Aureotope®
(Gold Au 198 Injection USP)

Technetope®
(Technetium Tc99m Generator)

Kinevac®
(Sincalide for Injection)
Nuclear Medicine: A Distinguished Past, A Promising Future

Macrotec®
(Kit for the Preparation of Technetium Tc99m Albumin Aggregated)

New brain imaging agent

Choletec®
(Kit for the Preparation of Technetium Tc99m Mebrofenin)

New heart imaging agents

The Years of Promise
The future of nuclear medicine is bright, and Squibb's contributions to it continue. New Squibb brain and heart agents are now in clinical development. In addition to extensive research and development, the Squibb contribution to nuclear medicine continues with technical support and professional education programs.

Call 1-800-257-5181 for educational materials, product information or technical assistance.
In New Jersey: 1-800-582-5913

*Squibb Diagnostics™
*See brief summary on following page.
CHOLETEC®
(Kit for the Preparation of Technetium Tc 99m Mebrofenin)

The Hepatobiliary Agent for a Wide Range of Bilirubin Levels

With Choletic, you can obtain diagnostic-quality hepatobiliary images even in patients whose bilirubin is significantly elevated. Choletic demonstrated low renal excretion even at bilirubin levels up to 25 mg/dl.1 In two studies2 in which Choletic was administered to patients having mean elevated serum bilirubin levels of 9.8 mg/dl (1.7 to 46.3 mg/dl), the mean percent injected dose excreted in the urine during the first three hours was only 3% (0.2% to 11.5%).

Low Renal Excretion
Only 3% on average in first 3 hours.

Reduced Procedural Time
Rapid hepatic transit and excretion permits visualization of the liver in normal subjects in 5 minutes, hepatic duct and gallbladder in 10-15 minutes and intestine in 30-60 minutes. Answers to important diagnostic questions may be obtained in less than one hour.

18-Hour Use Time
Choletic may be used up to 18 hours after reconstitution—three times longer than disofenin. Choletic contains a preservative.

CHOLETEC®
Kit for the Preparation of Technetium Tc 99m Mebrofenin

DESCRIPTION
Each reaction vial contains a nonradioactive, sterile, nonpyrogenic mixture of 45 mg mebrofenin, 0.54 mg (minimum) stannous fluoride hydrate, SnF2·H2O (1.03 mg total Sn, maximum (us stannous fluoride hydrate, SnF2·H2O), not more than 5.2 mg methoxypropionate, and 0.08 mg propylene glycol. The pH is adjusted with sodium hydroxide or hydrochloric acid prior to lyophilization. The contents of the vials are lyophilized and sealed under nitrogen at the time of manufacture. The pH of the reconstituted product is 4.2 to 5.7.

When sterile, pyrogen-free sodium pertechnetate Tc 99m infection is added to the vial, the diagnostic agent Technetium Tc 99m Mebrofenin is formed for administration by intravenous injection.

INDICATIONS AND USAGE
Technetium Tc 99m Mebrofenin is indicated as a hepatobiliary imaging agent.

CONTRAINDICATIONS
Hypersensitivity to this compound.

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

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

Delayed or non-visualization of the gallbladder may occur in the immediate post-prandial period or after prolonged fasting or parenteral feeding. Functional biliary obstruction may accompany chronic cholecystitis or pancreatitis. In addition, patients with hepatocellular disease may show non-visualization or delayed visualization of the gallbladder. Delayed intraductal transit may also be noted in such patients. Jaundice hepatitis may be associated with gallbladder non-visualization and the failure to visualize activity in the intestine. Administration of neomycin or trimethoprim may delay intestinal transit of the imaging agent and may result in non-visualization. Sepsis patients may show absent or delayed hepatobiliary clearance. Thus, a positive finding does not rule out a radiotracer diagnosis of any of the above conditions and should be evaluated in the light of the total clinical picture and results of other diagnostic modalities.

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 dose for patient administration.

The technetium Tc 99m labeling reaction 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 technetium-99m pertechnetate. Hence, sodium pertechnetate Tc 99m containing oxidants should not be employed.

Radiochemists 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 licensed to use the 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 hospital personnel.

To Tc 99m Mebrofenin should be formulated no more than 18 hours prior to clinical use.

Cardiogena, Metagenea, Impairment of Fertility
No long term animal studies have been performed to evaluate carcinogenic potential or whether Technetium Tc 99m Mebrofenin may affect fertility in males or females.

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

Informed, examinations using radiopharmaceuticals, especially those elective in nature, in women of childbearing capability, should be performed during the first trimester (approximately 10 days following the onset of menarche). 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
Although no adverse reactions have been reported specifically for Technetium Tc 99m Mebrofenin, rare cases of pruritus, rash, chills, and nausea have been reported with related compounds.

HUMAN LIFESPAN
MDB-Squibb®
(Kit for the Preparation of Technetium Tc 99m Medronate)

CHOLETET® may be ordered through your Squibb or Medi-Physics representative.

Circle Reader Service No. 67
608-501
Issued Feb. 1988

Other Squibb Diagnostics Agents

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Iodotope®
(Sodium Iodide I 131 Capsules USP Diagnostic-Oral and Sodium Iodide I 131 Solution USP Therapeutic-Oral)

Phosphotec®
(Kit for the Preparation of Technetium Tc99m Pyrophosphate)

Tesuloid®
(Kit for the Preparation of Technetium Tc99m Sulfur Collodion)

MYP-Squibb®
(Kit for the Preparation of Technetium Tc99m Medronate)

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Only Tomomatic CBF tomography provides objective quantitative imaging of the regional brain functions!

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Clinical evaluation
- psychological test
- stimulation test
- interview

Morphologic imaging
- CT
- MRI

Function imaging
- TOMOMATIC CBF tomography showing blood flow in each individual brain region—a parameter related to the regional brain metabolism
- EEG

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This year’s presentation of over 700 scientific papers and posters includes a distillation of the latest advancements and finest work achieved by outstanding scientists and physicians in the field of nuclear medicine. These papers, presented by the original authors, with over 30 subjects to choose from, will provide a unique opportunity for enhancing your knowledge or exploring new avenues in correlative areas of nuclear medicine. Ample time is allotted at these presentations for questions and discussions.

An extensive display of scientific posters and exhibits will augment the presentations.

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Refresher and state-of-the-art continuing education courses in chemistry, physics, quality assurance, cardiovascular nuclear medicine, PET, SPECT, and NMR will supply up-to-the-minute approaches and procedures for all clinical settings.

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The ever-increasing importance of the role of the nuclear medicine technologist will be explored in our Technologist Program, and over 70 hours of clinical updates will provide chief and staff technologists with the latest in basic, intermediate, and advanced studies. This program will broaden expertise and enhance the technologist’s contributions to nuclear medicine.

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The Society of Nuclear Medicine is continually adding to its library of audiovisuals, books, and other publications. A stop at the publications booth is well worth the time. Here you will find on display what the society has to offer for year-round educational advancement.

Networking opportunities and job referral boards are available at special locations throughout the meeting as well as membership information at our membership booth.

Registration: $130 SNM members
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THE NUCLEAR MEDICINE DISPLAY STATION.

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- All AccuSync-5L features with the exception of Digital CRT Monitor.
- All AccuSync-3R features with the exception of the Heart Rate/R-R int. display.

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Providence Hospital, Oakland CA

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The combination of angulated back and moveable ergometer creates the most comfortable patient position, affording unobstructed, clear approach for portable or wide-field cameras. Available with your choice of ergometers—Tunturi or Collins.

The Cardiac Stress Table sets the standard for exercise imaging.

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The MIRD Primer for Absorbed Dose Calculations was prepared by the MIRD Committee to provide a fresh explanation of the MIRD schema with examples designed to illustrate applications.

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Part 1 offers a detailed explanation of the MIRD method.

Part 2 amplifies this explanation with examples designed to illustrate applications beginning with relatively simple problems and working up to more complex ones.

Part 3 contains previously published MIRD absorbed dose estimates, now readily assembled in one book, that have been revised and edited for this publication.


The MIRD Primer also contains a substantive index, a detailed glossary and list of symbols, and for handy reference, calculation tables on the inside front and back covers. 128 pp, hardcover. $35 for members, $50 for non-members.

To Order: Send check or money order to The Society of Nuclear Medicine, Dept. 488J, 136 Madison Avenue, New York, NY 10016-6760.
Imaging the brain for evaluation of stroke

Clinical impression: Evolving CVA
CT interpretation: Normal

Patient history: Patricia M, a 44-year-old woman with history of hypertension, previous TIAs, right carotid endarterectomy
Reason for admission: Onset of left-sided weakness and numbness

Clinical challenge: Localize and document the site and extent of CVA. Now. Not 2 or 3 days later.
Functional brain imaging in evaluation of stroke:

Early CT image:
Normal

Admission CT of Patricia M interpreted as normal.

Limitations of stroke diagnosis with CT:
- Clinical decisions often made during first 48 hours, when CT often negative
- CT scan detects changes in brain density, not function
- Extent of lesion seen on early CT may correlate poorly with clinical signs
Early SPECT image:
Regions of normal and decreased tracer uptake

SPECTamine image of Patricia M reveals decreased right hemisphere uptake in the region of the caudate nucleus, and less pronounced decrease in uptake in the right temporal lobe and lower right parietal lobe.

Within minutes of injection, SPECTamine®
- Crosses the intact blood-brain barrier
- Concentrates in metabolically active brain cells
- Documents site and extent of CVA as regions of diminished uptake
- Provides additional diagnostic information for patient management

Your partner in advancing nuclear medicine

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Please see last page for full prescribing information.
Metabolic imaging with SPECTamine® (Iofetamine HCl I 123 Injection)

Imaging stroke with a neurotransmitter analog

SPECTamine® (Iofetamine HCl I 123 Injection) presents the medical community with the first lipid-soluble radiopharmaceutical for functional brain imaging in the evaluation of cerebrovascular accident (CVA). It enables clinicians to more completely evaluate patients with suspected nonlumbar stroke, which may be underappreciated with morphologic imaging modalities such as CT.²³ (Fig 1.)

SPECTamine is a neurotransmitter analog that rapidly crosses the intact blood-brain barrier, allowing it to be taken up by metabolically active neurons, predominantly in the gray matter.⁴ (Fig 2.) It reveals regional changes in brain physiology, indicating impaired brain function.³

Crosses intact blood-brain barrier

Unlike earlier nuclear brain-imaging agents, SPECTamine easily crosses the intact blood-brain barrier due to its unique lipid solubility. First-pass extraction efficiency is high, washout is slow, and brain-blood ratios are high.⁴ The initial distribution of SPECTamine is maintained for at least 1

Fig 1. Despite a normal CT study upon admission (left), this patient with left-sided weakness demonstrated decreased right hemisphere uptake in a SPECT study (right) performed with SPECTamine.

Fig 2. A normal SPECT study with iofetamine HCl I 123 shows relatively symmetrical uptake throughout the cerebral cortex.

Fig 3. Activity in lung and brain after IV injection of SPECTamine.
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Positron has made the commitment.

Circle Reader Service No. 11
SNM Presents Your Personal Postgraduate Study Course in Nuclear Medicine

The Society of Nuclear Medicine has initiated a major nuclear medicine self-study program to aid physicians, scientists, and technologists in expanding their knowledge of the clinical, basic science, and technical aspects of nuclear medicine. The study and self-evaluation approach has been shown to be an effective means of acquiring medical knowledge and an objective means of evaluating strengths and weaknesses.

The entire Nuclear Medicine Self-Study Program is to consist of four sequential publications (I-IV) which will review the entire field of nuclear medicine. Each program is divided into three components: a soft cover book consisting of syllabus, questions, and answer sheets; a separate book with answers and detailed critiques; and a personal psychometric evaluation, complete with a norms booklet.

Like the earlier Nuclear Medicine Review Syllabus, the Nuclear Medicine: Self-Study Program syllabus has been designed to strengthen your knowledge of nuclear medicine, sharpen your clinical skills, and keep you abreast of recent developments. The self-assessment test, with its answers and critiques, should provide additional help in identifying strengths, as well as possible gaps in your knowledge. It can be used to obtain CME or CEU credits, to prepare for board and/or recertification exams, or as a reference and teaching aid.

The first volume of this program, Nuclear Medicine: Self-Study Program I, will cover four areas of nuclear medicine: Radiobiology and Radiation Protection, including regulatory matters; Gastrointestinal Nuclear Medicine; Skeletal Nuclear Medicine; and Pulmonary Nuclear Medicine. Both the syllabus and questions emphasize essential, clinical-related information. The syllabus and critiques contain annotated references to allow the reader to seek additional information on each topic. The questions are carefully prepared to approximate the format and level of difficulty encountered in specialty board examinations.

The answer and critique book provides the correct answer for each question and discusses the various options. Hence, the review of answers and questions also constitutes an important learning experience.

The personal psychometric evaluation provides comparisons of your performance with that of a peer group. A norms table will indicate your percentile ranking for each subject area, as well as the percentage of participants who answered each question correctly. Anticipated publication date for Nuclear Medicine: Self-Study Program I is June 1988. It will be available to members for $90; nonmembers for $115; and residents for $75. Answer sheets will be accepted for psychometric evaluation, for CME and CEU credit, and for inclusion in the norms tables through November 1, 1988.
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- and the
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CHINA TOURS DURING BEIJING AND TAIPEI CONFERENCES

The Society of Nuclear Medicine is offering its members the opportunity to combine attendance at the International Symposium on Nuclear Medicine (October 10–14, 1988, Beijing) and/or the Fourth Asia & Oceania Congress on Nuclear Medicine (November 1–4, 1988, Taipei) with a first-hand look at the fascinating culture of the Far East.

Each tour, completely escorted, will take you to areas that until recently have been inaccessible to the average American. You may choose from three basic tours:

1. **Beijing Symposium Tour**—Leaves the West Coast October 6. Includes a day in Hong Kong to get the flavor of the Orient before proceeding to Beijing. Departs Beijing October 15 for the U.S.

2. **China Extension Tour**— Begins on October 15, after the Symposium. From Beijing you travel through the once-closed cities of Xian and Beilin, seeing both a rural land unchanged for centuries and the exciting results of China's tentative steps towards capitalism. Two days are devoted to a stay in Hong Kong, where East meets West in an exotic blend of sampans and skyscrapers. Departure is October 22 for the West Coast.

3. **Taipei Congress Tour**—Leave the West Coast October 22, return November 5. Included is a five-day visit to Hong Kong, enabling you to experience the excitement of the frenetic pace that consumes this last outpost of the Empire as it counts the days remaining until it once again becomes part of China.

You may also opt to combine the **China Extension Tour** with the **Taipei Congress Tour**.

This opportunity to combine prestigious scientific conferences with a look at part of the world so different to our own is truly unique. Of necessity, the number of attendees who may take advantage of these China tours is limited. We suggest you immediately contact:

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**EUROPEAN NUCLEAR MEDICINE CONGRESS 1988**
**AUGUST 26–SEPTEMBER 2 MILANO, ITALY**

**SCIENTIFIC PROGRAM**

Plenary sessions, with lectures given by invited speakers, will concern the following main topics: Oncology, Emission Tomography, Cardiology, Pediatrics, Neurology. Scientific Papers, "Works-in-Progress," Technicians' Program, Scientific and Commercial Exhibition, Pre- and Post-Congress Meetings are also included.

Topics related to nuclear medicine will be considered for inclusion in the scientific program as follows:

**Instrumentation:** Instrumentation and New Technologies, Emission Computed Tomography (SPECT and PET), NMR, Computers, Image Processing, Artificial Intelligence, Quality Control of Instrumentations.

**Radiopharmaceuticals:** Radiopharmaceutical Chemistry, New Radiopharmaceuticals, Radiolabeled Monoclonal Antibodies for Cancer Diagnosis and Therapy, Studies on Cell and Animal Models, Kinetics of Tracers, Quality Control of Radiopharmaceuticals, Dosimetry.

**In Vitro Applications:** Tumor Markers, Radioimmunoassays, Cell Labeling Quality Control, Genetic Engineering.

**Clinical Applications:** Cardiology and Circulation, Gastroenterology, Nephrology, Neurology, Hematology, Endocrinology, Pediatrics, Bone/Joint Diseases, Pulmonary Diseases, Thyroid Diseases, Metabolic Therapy, Radiation Risks.

**EXHIBITION**

A comprehensive exhibition of equipment and radiopharmaceutical manufacturers will be on display.

**GENERAL INFORMATION**

Call for Abstracts: Official Abstract Sheets may be obtained by writing to the Official Organizing Office, O.I.C. Incentive –Viale Majno, 21–I-20122 Milano. The deadline for the receipt of abstracts is March 1, 1988.

Registrations and Fees: Members of the European Association of Nuclear Medicine (EANM), regularly registered, will have free admission to the Congress, provided that they present their 1988 Membership card at the Registration Desk, or send a copy to the Official Organizing Office. EANM Members must pay their fees by April 15, 1988. New EANM membership applications will be accepted only until April 15, 1988.

The registration fees for non-members will be Lit. 220.000 + VAT by June 15, 1988 and Lit. 300.000 + VAT after June 15, 1988.

Social Program: A comprehensive social program has been planned, including the Opening Ceremony with a concert and welcome cocktail (inclusive in the registration fee); an organ concert in one of the most beautiful churches of Milano; a dancing dinner in an old villa near Milano; the Farewell Party.

PRESIDENT OF THE CONGRESS: Prof. Dott. Gian Luigi Buraggi

Scientific Secretariat:  
Division of Nuclear Medicine  
Istituto Nazionale dei Tumori  
Via Venezian, 1  
I-20133 Milano

Organizing Office:  
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Viale Majno, 21  
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Announcement and Invitation to Participate in a New Clinical Teaching Session at the SNM 35th Annual Meeting in San Francisco, California

CLINICAL POTPOURRI

The Scientific Program Committee solicits contributions for a new type of teaching session to be held at the 35th Annual Meeting of the Society of Nuclear Medicine in San Francisco on June 14–17, 1988. Clinical Potpourri will be a session or sessions consisting of brief presentations of clinical topics by attendees followed by an audience discussion. The subject matter should be clinical and presented within two minutes with three minutes of discussion. Only 35mm slides are permitted. Appropriate topics include unusual variations of a common topic, new observations, artifacts, emphasis of a known but commonly overlooked phenomenon, etc. If you are interested in presenting at this session, please complete the coupon and return it no later than April 15, 1988 to: The Education & Meetings Department, The Society of Nuclear Medicine, 136 Madison Avenue, New York, NY 10016-6760.

You will receive written notification soon after this deadline. A schedule of speakers and topics will be available at the meeting. The session or sessions will be held in the early evening (either Wednesday, Thursday or both) immediately following the close of the last Scientific Session.

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  - Ronald L. Van Heertum, M.D.
  - 81 slides/tape $75.00  VHS/Beta $95.00
  - ¾" $105.00

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using aerosols to determine the patency of the pulmonary airway system? Use a gas (that's what the airway system is for), and Xenon (127 or 133) are gases which are safe, economical and easy to administer with the XENAMATIC™ 3000.

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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.

**Voice Management System**

Sudbury Systems has introduced the RTAS 500 Voice Management System, designed for radiology and medical record departments in hospitals with 50 to 400 beds. The RTAS 500 provides up to 20 simultaneous ports and 23 hours of voice storage. For hospitals where capacity requirements are within these levels, the RTAS 500 offers full digital dictation capabilities. RTAS with StarCall automatically calls the referring physicians to replay requested reports as soon as they are dictated. Physicians can also call in to listen to reports, and transcriptionists have instant, selective access to any dictation. A comprehensive set of job listings and productivity summaries allows for complete management control over reporting activities. The RTAS 500 utilizes very large scale integration to incorporate all the extensive RTAS capabilities in a smaller cabinet and at a price that is attractive to smaller hospitals, according to the company. Sudbury Systems, Inc., 490 Boston Post Rd., Sudbury, MA 01776. (800)876-888.

Circle Reader Service No. 113

**Wipe Test Counters**

Victoreen introduces two wipe test counters that have been designed to meet the Nuclear Regulatory Commission's (NRC) new requirements for determining surface contamination levels in areas where radiopharmaceuticals are prepared, used or stored. The Deluxe Wipe Test Counter utilizes an integral thin-window Geiger-Muller tube to detect gamma and strong beta radiation. A microprocessor converts the data to disintegrations per minute (dpm). If the contamination level is less than 2000 dpm, a green light will indicate PASS. A red light will indicate FAIL for contamination levels of 2000 dpm or above, and the reading will be shown on the 4-digit LED digital display. The pass/fail threshold can be adjusted for levels other than 2000 dpm. It can also be used as a scaler in displaying counts up to 9999, with counting intervals selectable for 1, 5 or 20 minutes. The Standard Wipe Test Counter does not have an LED display. It uses the green light (pass)/red light (fail) system to indicate contamination levels. This satisfies NRC requirements. Victoreen, Inc., 100 Voice Rd., Carle Place, NY 11514-1593. (516)741-2166.

Circle Reader Service No. 111

**Application Notes**

EG & G Ortec is currently providing advice and equipment to companies who offer a "Radon Measurement" service by which owners can have their homes checked for high levels of radon. Two application notes on radon measurements are available from EG & G Ortec. One application note entitled "Environmental Radon Measurements by Gamma Spectroscopy" concerns general information on radon in the environment and its potential health risks. The second application note discusses how to start up a radon measurement business. A data sheet on the AirGuard measurement system for radon samples is also available from EG&G Ortec, 100 Midland Rd., Oak Ridge, TN 37830. (800)251-9750.

Circle Reader Service No. 112
**YES, I want to test my knowledge of Nuclear Medicine with The Society of Nuclear Medicine’s two-part Nuclear Medicine: Self-Study Program I. Please send me more information and an order form.**

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- ☐ Non-member
- ☐ Student

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**Nuclear Medicine:**

- **Self-Study Program I**
- **Program I**
- **Syllabus and Multiple Choice Questions**
- **Part I**

**Send free information on items circled below.**

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**City**  
**State**  
**Zip**  

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   B. 200-499  
   C. 200-299  
   D. 100-199  
2. Private Clinic  
3. R & D (Commercial)  
4. University  
5. Government  
6. Other  

Circle one answer in each category:

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<th>Reason for Inquiry</th>
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<td>3. Purchase</td>
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<td>3. Budgeting Information</td>
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</table>

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<tr>
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<td></td>
<td>3. Budgeting Information</td>
</tr>
</tbody>
</table>

**Service Card Expiration Date: 7/15/88**
**SPECTAMINE**

**Ritalin-like stimulant.**

**DIAGNOSIS—FOR HEPATIC USE**

**DESCRIPTION:** SPECTAMINE is a combination of 2 mg of the active drug, amphetamine hydrochloride, and 1 mg of the inactive drug, caffeine. The combination is intended for use as a stimulant in the treatment of narcolepsy, a condition characterized by excessive daytime sleepiness.

**PHYSICICAL CHARACTERISTICS:** The tablets are white,椭圆形, and measure approximately 4.7 mm in diameter and 2 mm in thickness. They are made of cellulose acetate and contain the following inactive ingredients: lactose, starch, magnesium stearate, and cornstarch.

**PHARMACOLOGICAL PROPERTIES:** SPECTAMINE is a centrally acting stimulant with a rapid onset of action. It increases alertness and reduces fatigue. It is also used to treat narcolepsy and other conditions characterized by excessive daytime sleepiness.

**INDICATIONS AND USAGE:** SPECTAMINE is indicated for the treatment of narcolepsy and other conditions characterized by excessive daytime sleepiness. It is also used to improve concentration and alertness in patients with attention deficit hyperactivity disorder (ADHD).

**CONTRAINDICATIONS:** SPECTAMINE is contraindicated in patients with a history of seizures, psychosis, or other mental disorders, or those with a history of drug abuse. It is also contraindicated in patients with a history of cardiovascular disease, hypertension, or hyperthyroidism.

**WARNINGS:** SPECTAMINE should be used with caution in patients with a history of psychiatric disorders, such as depression or anxiety, as it may worsen these conditions. It should also be used with caution in patients with a history of gastrointestinal disorders, as it may exacerbate symptoms.

**ADVERSE REACTIONS:** The most common adverse reactions associated with SPECTAMINE include increased anxiety, agitation, insomnia, and gastrointestinal symptoms such as nausea and diarrhea.

**DOSE AND ADMINISTRATION:** The recommended dosage of SPECTAMINE for adults is 1 tablet (2 mg) twice daily, with the first dose taken in the morning and the second dose taken 6 to 8 hours later. The dosage may be increased to 2 tablets twice daily if necessary.

**DROPPED:** SPECTAMINE is no longer available for purchase and is not currently being manufactured. It should be discontinued as soon as possible and alternative treatments should be sought.

---

**Table 1. Radiolabeled Emission Dosage**

<table>
<thead>
<tr>
<th>Target</th>
<th>At Calibration Time</th>
<th>At Calibration Time 24 Hours After Calibration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brain</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Reina</td>
<td>4.4</td>
<td>4.4</td>
</tr>
<tr>
<td>Lens</td>
<td>7.6</td>
<td>7.6</td>
</tr>
<tr>
<td>Lung</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Kidneys</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Urine</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Throat</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Testes</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>Drugs</td>
<td>4.7</td>
<td>4.7</td>
</tr>
<tr>
<td>Red Marrow</td>
<td>5.2</td>
<td>5.2</td>
</tr>
</tbody>
</table>

**Table 2. Radiation Exposure vs. Lead Shielding**

<table>
<thead>
<tr>
<th>Source Strength (Ci/cm²)</th>
<th>Coefficient of Attenuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.005</td>
<td>0.5</td>
</tr>
<tr>
<td>0.010</td>
<td>0.10</td>
</tr>
<tr>
<td>0.020</td>
<td>0.20</td>
</tr>
<tr>
<td>0.030</td>
<td>0.30</td>
</tr>
<tr>
<td>0.040</td>
<td>0.40</td>
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</tbody>
</table>

**Table 3. Statistical Analysis**

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean (±SEM)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>12.3 (±2.1)</td>
<td>0.12</td>
</tr>
<tr>
<td>Group 2</td>
<td>14.6 (±2.7)</td>
<td>0.05</td>
</tr>
</tbody>
</table>

---

**Table 4. Estimated Absorbed Radiation Dose**

<table>
<thead>
<tr>
<th>Target</th>
<th>At Calibration Time</th>
<th>At Calibration Time 24 Hours After Calibration</th>
</tr>
</thead>
<tbody>
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<td>4.7</td>
<td>4.7</td>
</tr>
<tr>
<td>Red Marrow</td>
<td>5.2</td>
<td>5.2</td>
</tr>
</tbody>
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**Table 5. Summary of Clinical Trials**

<table>
<thead>
<tr>
<th>Trial</th>
<th>Participants</th>
<th>Endpoints</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trial 1</td>
<td>100</td>
<td>Safety</td>
<td>Excellent</td>
</tr>
<tr>
<td>Trial 2</td>
<td>150</td>
<td>Efficacy</td>
<td>Positive</td>
</tr>
<tr>
<td>Trial 3</td>
<td>200</td>
<td>Safety</td>
<td>Excellent</td>
</tr>
<tr>
<td>Trial 4</td>
<td>250</td>
<td>Efficacy</td>
<td>Positive</td>
</tr>
</tbody>
</table>

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**Table 6. Summary of Preclinical Studies**

<table>
<thead>
<tr>
<th>Study</th>
<th>Animals</th>
<th>Endpoints</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1</td>
<td>50</td>
<td>Safety</td>
<td>Excellent</td>
</tr>
<tr>
<td>Study 2</td>
<td>75</td>
<td>Efficacy</td>
<td>Positive</td>
</tr>
<tr>
<td>Study 3</td>
<td>100</td>
<td>Safety</td>
<td>Excellent</td>
</tr>
<tr>
<td>Study 4</td>
<td>125</td>
<td>Efficacy</td>
<td>Positive</td>
</tr>
</tbody>
</table>

---

**Table 7. Summary of Toxicology Studies**

<table>
<thead>
<tr>
<th>Study</th>
<th>Animals</th>
<th>Endpoints</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1</td>
<td>10</td>
<td>Safety</td>
<td>Excellent</td>
</tr>
<tr>
<td>Study 2</td>
<td>20</td>
<td>Efficacy</td>
<td>Positive</td>
</tr>
<tr>
<td>Study 3</td>
<td>30</td>
<td>Safety</td>
<td>Excellent</td>
</tr>
<tr>
<td>Study 4</td>
<td>40</td>
<td>Efficacy</td>
<td>Positive</td>
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</tbody>
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**Table 8. Summary of Manufacturing and Quality Control**

<table>
<thead>
<tr>
<th>Process</th>
<th>Description</th>
<th>Results</th>
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</thead>
<tbody>
<tr>
<td>Process 1</td>
<td>Volume control</td>
<td>Accurate</td>
</tr>
<tr>
<td>Process 2</td>
<td>Temperature control</td>
<td>Controlled</td>
</tr>
<tr>
<td>Process 3</td>
<td>Moisture content</td>
<td>Within specifications</td>
</tr>
<tr>
<td>Process 4</td>
<td>Purity</td>
<td>High</td>
</tr>
</tbody>
</table>

---

**References:**


---

**Figure 1. SPECTAMINE Dosage Form**

The SPECTAMINE dosage form is a white,椭圆形, tablet designed for oral administration. It contains 2 mg of amphetamine hydrochloride and 1 mg of caffeine.
The dawn of metabolic brain imaging in the evaluation of stroke... and a new day for nuclear medicine

Patient history:
Patricia M, a 44-year-old woman with a history of hypertension, previous TIAs, right carotid endarterectomy

Reason for admission:
Onset of left-sided weakness and numbness

CT interpretation:
Normal

SPECTamine interpretation:
Decreased right hemisphere uptake in the region of the caudate nucleus, and less pronounced decrease in uptake in the right temporal lobe and lower right parietal lobe

SPECTamine image courtesy of the Medical College of Wisconsin, Milwaukee, WI

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