Iron deficiency anemia testing—As easy as throwing in the sponge!

Irosorb-59 is the second in a series of in vitro radio-pharmaceutical tests developed by Abbott Laboratories. The Irosorb-59 Sponge offers a remarkable degree of accuracy and simplicity that makes routine screening a practical matter.

Accuracy: The diagnostic accuracy of the test is unsurpassed in measuring latent iron-binding capacity. What’s more, unlike other methods, it can be used following the administration of a hematinic.

Speed: Irosorb-59 can be washed quickly, there being only 3 washes. No incubators or shakers are needed.

Convenience: Irosorb-59 is in a disposable kit form ready for immediate use at room temperature.

Safety: No dilution or pipetting of radioactive material is necessary. Since the patient receives no radioactive materials, the test can be used in children, pregnant women; or in adults without any hazard of radioactivity.

Flexibility: The test does not require the presence of the patient for the determination of the radioactivity. Serums can be frozen and saved until a sufficient number has been collected to run a rack full of tubes at one time, or serum samples can be mailed to personnel performing the test.

Irosorb-59 is available to all doctors, hospitals and clinical laboratories—AEC licensing is not required.
The Triosorb Sponge is an in vitro test providing accuracy, speed and convenience.

Accuracy: Because factors such as red blood cells and exogenous iodine have been eliminated from consideration in the Triosorb Test, it is unsurpassed in accuracy.

Speed: With only 3 washes and no need for double pipettings, shakers, or incubators, the Triosorb Test can be more rapidly performed than any other T-3 test.

Convenience: Available in a disposable kit ready for immediate use at room temperature. There is no dilution or pipetting of radioactive materials with Triosorb. It is the simplest and most convenient thyroid function test to perform.

"The resin sponge (Triosorb) technique is superior to the erythrocyte method for performing the T^{131} T3 test in terms of simplicity, convenience and elimination of errors characteristic of the erythrocyte procedure."\textsuperscript{1}

"The T-3 uptake test was vastly improved by a resin-sponge... (Triosorb)... which is offered as a replacement for the red cells as well as for the loose granular resin which varies from day to day."\textsuperscript{2}

Triosorb is available to all doctors, hospitals and clinical laboratories—AEC licensing is not required.

"For many years the protein-bound iodine (PBI) has been used as an indirect index of the level of thyroid hormones; however, in an appreciable number of cases it does not provide an accurate measurement, because compounds containing iodine or mercury are present."1

It is now generally recognized that a quantitative direct measurement of thyroid hormones in serum is the most valuable single laboratory aid in assessing thyroid function.

"Using a resin-sponge and thyroxine tagged with I-125, a simple method was developed to determine serum thyroxine."2

That method is Tetrasorb-125, the first diagnostic kit offering a direct measurement of thyroid function by determining serum thyroxine. Hypothyroid patients show a decrease in serum thyroxine while hyperthyroid patients show an increase.

Using the principle of saturation analysis for measuring total serum thyroxine, the following results have been reported:

"When T₄ and PBI values were compared, a good correlation (r=0.823) was obtained with a higher diagnostic accuracy for the T₄ determination. All euthyroid individuals with PBI's elevated due to iodine had T₄ values in the normal range. . . . The T₄ level correlated well with the clinical status in hypothyroid subjects receiving T₄ or hyperthyroid subjects receiving various forms of therapy."3

"Unlike the protein-bound iodine determination, this technique is entirely unaffected by iodine or mercury, an important advantage from the clinical point of view."3

"These results proved that this method could be used as a routine clinical diagnostic test in place of the determination of PBI."4

By requesting both Tetrasorb-125 (a direct measure of thyroid activity) and Triosorb® (an indirect measure of thyroid activity) for his patient, the physician is provided with more information than ever before possible.

Tetrasorb-125 is available to all doctors, hospitals and clinical laboratories—AEC licensing is not required.

Scintiscanning of the lungs now offers a new approach to the diagnosis of pulmonary disease. With use of macroaggregated radio-iodinated $^{131}$I albumin, lung scanning has been found to be simple, rapid and relatively safe, and is invaluable as an adjunct to other diagnostic procedures whenever information about pulmonary vasculature is desired.

Perhaps the most useful application of the lung scan has been for the early detection of pulmonary embolism where ... it appears that the lung scan can point to the site of embolic lesions before signs of lung infarction are recognizable on plain chest films. This is important, for with the development of new means of treating pulmonary embolism, the need for improved diagnostic ability has increased. For example, the availability of anticoagulant drugs to prevent further thrombosis and of proteolytic agents to dissolve thrombi already formed, the use of surgical therapy (such as embolectomy or ligation or plication of the inferior vena cava and even pulmonary embolectomy) — all require more accurate diagnostic procedures.

Of course, pulmonary arteriography can give an immediate positive demonstration of an obstruction in the pulmonary circulation as soon as it occurs, but this procedure is time consuming and technically difficult to perform. It necessitates injection of large quantities of high density contrast medium directly into the pulmonary artery, and it also requires cardiac catheterization (with some risk of dislodgement of venous thrombi). Moreover, experience has shown that patients with pulmonary hypertension may tolerate injections of contrast material poorly. Other examinations, such as x-ray study of the chest and electrocardiography, are rarely definitive.

In contrast, lung scanning with Albumotope-LS is a simple and direct adjunctive measure; reliable and virtually without risk of morbidity to the patient. And unlike pulmonary arteriography it does not require cardiac catheterization and involves only minimal inconvenience to the patient. All that is required is the i.v. administration of a relatively small amount of the isotope. And the test may be supplemented with other procedures when necessary.

Although the lung scan has been used most frequently for the detection of pulmonary emboli, it can provide useful information in the diagnosis and evaluation of other pulmonary problems. For example, a recent report in the September, 1966, issue of Circulation discusses the potential applicability of the technique in the detection and assessment of mitral valve disease. According to the authors, the technique has been found useful in screening patients with clinical findings of mitral valve disease who were not considered symptomatic enough to warrant cardiac catheterization ... in the preoperative study of patients so ill that left heart catheterization was unusually hazardous ... and in determining whether the pulmonary venous pressure is elevated in patients with known severe pulmonary arterial hypertension. In these latter patients it is often difficult to measure pulmonary arterial wedge pressure reliably and the more extensive manipulations necessary for left heart catheterization may be poorly tolerated. Thus, assessment of the distribution of pulmonary arterial blood flow by lung scanning affords a means for determining the existence of pulmonary venous hypertension, which suggests the presence of potentially correctable lesions, such as mitral stenosis or cor triatriatum.

New radioisotope scanning procedure can help detect the vascular changes of pulmonary disease before they show on chest films.

Albumotope-LS
Squibb Aggregated
Radio-iodinated (I$^{131}$) Albumin (Human)

References:

Doseage and Scanning Procedure: Recommended scan doses of 150 to 300 microcuries of aggregated radioidinated $^{131}$I albumin depending on the instrumentation available and the technique employed. Scanning immediately follows administration of slow intravenous injection. Patient may be placed in a prone or supine position.

Side Effects and Precautions: Radioisotopes should not be used in pregnant women, nursing mothers, or in patients under 18 years of age unless indications are very exceptional.

There have been no reported cardiovascular or other untoward effects attributable to Albumotope-LS. Extensive clinical use of Albumotope-LS has not borne out the theoretical possibility that particles of large size might induce deleterious cardiovascular or cerebrovascular effects. The product appears to possess no antigenic properties. One patient with a known history of anaphylactic edema, who had been given Lugol's solution in conjunction with aggregated radioidinated albumin similar to Albumotope-LS, developed urticaria. Available: As a sterile, non-pyrogenic, aqueous suspension. Each cc. contains approximately 1 mg. aggregated human serum albumin labeled with 300-1500 microcuries of iodine-131 at time of manufacture. Also contains 0.9% benzyl alcohol as a preservative.

Illustration furnished through the courtesy of George V. Taplin, M.D., Harbor General Hospital, Torrance, California.

Squibb 'The Priceless Ingredient' of every product is the honor and integrity of its maker.
For high-definition diagnostic scans of brain lesions, thyroid, lungs, kidneys, liver, spleen and other organs.

High-definition scans are an essential in the fast-developing field of radio-diagnosis. Particularly so in the localisation of brain lesions and the scanning of thyroid, kidneys, liver, spleen and other human organs. Good scan resolution is one of the major contributions of the technetium-99m yielded by Stercow 99m - an advanced-design sterile generator by Duphar. Supplies are despatched during the weekend pre-calibrated for the first day of use, usually Monday at 18.00 hrs M.E.T. - and an elution efficiency of approximately 80% of the technetium-99m in the Stercow is guaranteed. Further, milking is a simple, safe and speedy operation. Full details of Stercow 99m and the uses of the scanning agent technetium-99m will gladly be sent on request. Samples are available free of charge. Stercow 99m is manufactured by Duphar to the very high quality standards necessary for nuclear pharmaceuticals. A new design of sterile generator, it is available in three types with 150, 300 or 450 mc of the parent radioisotope Mo99. Complete elution with 15, 20 or 30 ml. When milked in the approved manner, the resultant technetium-99m is sterile, non-pyrogenic and hence ready for immediate use - either orally or intravenously. The Duphar Shielded Stercow Milking System gives additional safety and efficiency in the elution operations.

Nuclear pharmaceuticals

Contact our local representative or write direct to N.V. Philips-Duphar Cyclotron and isotope laboratories Petten - Holland

Labelled Compounds C 14, H 3 - Enriched Compounds D, C 13, N 15, O 18 - Nuclear Chemicals - Nuclear Products for Industry
For brain scanning, Pertscan-99m provides more information with less radiation to the patient than any other related cerebral test—whether other radioisotopes or x-rays. And you get each projection fast—as little as 2 minutes with a camera, 15 minutes or less with rectilinear ear scanners.

A 54-year-old man was hospitalized with progressive weakness of the right side, followed by seizures of the right side (Jacksonian seizures). Brain scans showed an abnormal concentration of isotope in the left parasagittal area. Surgery revealed a meningioma, which was removed, and the patient recovered.

The 2 scans above, showing the marked abnormal uptake (which turned out to be a meningioma), were made with Pertscan-99m. This product is shipped Monday through Friday—and Sunday. Thus, brain scans can be scheduled 6 days a week—Monday through Saturday.

INDICATIONS: Adjunctive diagnostic aid in detecting and localizing intracranial neoplastic (primary or metastatic) and non-neoplastic lesions.

CONTRAINDICATIONS: Radio-pharmaceutical agents should not be administered to pregnant women or to persons less than 18 years old unless the indications are very exceptional.

PRECAUTIONS: Care should be taken to ensure minimum radiation exposure to the patient as well as all personnel; to prevent extracranial contamination because this can lead to erroneous interpretation; and to differentiate areas of abnormal activity from areas of normal vascular activity.

Pertscan-99m
SODIUM PERTECHNETATE Tc 99m
Also available:
Pertgen-99m
TECHNETIUM 99m GENERATOR KIT
Pulmonary embolism, suspected: To confirm (or rule out) its occurrence.
Chronic pulmonary tuberculosis: To estimate unilateral and regional function and perfusion of the lungs.
Emphysema: To evaluate the degree of focal lack of perfusion.
Pneumonitis: To evaluate the decreased regional blood flow that occurs without obstruction of vessels.
Lung tumors: To evaluate the regional ischemia resulting from compression or obstruction of pulmonary arteries.

Surgery and/or other therapy for lung disorders: To evaluate the effectiveness of therapeutic measures.

Macroscan-131 is sterile and non-pyrogenic. It is ready to use and should not be heated prior to use.

INDICATIONS: For scintillation scanning of the lungs to evaluate total, unilateral, and regional arterial perfusion to the lungs.

CONTRAINDICATION: Radio-pharmaceutical agents should not be administered to pregnant women, nursing mothers, or to persons less than 18 years old unless the indications are very exceptional.

PRECAUTIONS, SIDE EFFECTS: Care should be taken to administer the minimum dose consistent with safety and validity of data. The possibility of an immunological response to albumin should be kept in mind when serial scans are performed. There is a theoretical hazard in acute cor pulmonale, because of the temporary small additional mechanical impediment to pulmonary blood flow. A possible case of urticaria has been related to a similar preparation. The thyroid gland should be protected by prophylactic administration of concentrated iodide solution.
For these reasons, technetium sulfide Tc 99m has been called the agent of choice. It is important to note that Colloscan-99m is formulated with low molecular weight dextran (dextran 40)—and not clinical dextran (dextran 75).

Colloscan-99m is a sterile, non-pyrogenic, colloidal solution that can be administered as received—no preparation is necessary. It is shipped 6 days a week—Monday through Friday and Sunday.

INDICATIONS: For indirect visualization of the liver, spleen, and bone marrow.

CONTRAINDICATIONS: Radio-pharmaceutical agents should not be administered to pregnant or lactating women or to persons less than 18 years old unless the indications are very exceptional.

PRECAUTIONS: Care should be taken to ensure minimum radiation exposure to the patient as well as to all personnel. Physicians administering this agent should be prepared for emergency resuscitation in the event of an anaphylactoid reaction. The absence of a lesion in the scan does not necessarily denote the absence of lesions.

ADVERSE REACTIONS: In more than 200 patient studies, there were 2 reported instances of hypotension requiring prompt supportive treatment.

The demonstrable advantages of a dual 5-inch crystal scanner should be investigated by all those with a high clinical load who desire high resolution, rapid scans of both large and small organs or of the whole body.

The two scanning heads, exactly opposite each other, have separate, and complete electronics and print-out so that the data collected by each crystal may be used separately, in coincidence, or additively.

Mechanical and electronic specifications are the same as for our other large-crystal radioisotope scanners Models 54F and 54H:

- Scanning speeds continuously variable to 200 inches per minute (500 cm/min.);
- Adequate shielding even for high energy gamma emitters (up to 3 inches lead and 1 inch steel);
- High resolution crystals (9 percent or better);
- Accurate, reproducible scanning speeds and line spacing; no scalloping at any speeds;
- Low background crystals (2 inch thick pure NaI light pipe);
- Gamma-graphic (patent pending) or slit mask photoscans;
- Unequivocal one year warranty anywhere in USA or Canada.

This unparalleled radioisotope scanner is priced at $28,750 with delivery in 90 days guaranteed.
Cobalt-60 Teletherapy Reloads

Most people remember us as "The Source With Integrity." Today U.S. Nuclear Cobalt-60 Teletherapy Reloads... in 1.5 cm, 1.75 cm, 2.0 cm and 2.5 cm diameters... are available for prompt shipment.

We guarantee source outputs (calibration traceable to the National Bureau of Standards), doubly encapsulated in stainless steel, heliarc-welded capsules. In addition we make a normal check-out of your teletherapy equipment.

When you call us collect you'll make our conversation memorable by supplying the following facts. First, tell us the make and model of your teletherapy unit. Then give us the RHM output of your present source and capsule diameter in centimeters. Finally, let us know the RHM output and capsule size of the source you would like to order. This information lets us quote you a price as easy to remember as our name.
4 of every 5 new Departments of Nuclear Medicine get started with a Magnascanner

(What does this suggest to you?)

This fact hopefully suggests—to those contemplating the start (or expansion) of such a service—something about this instrument and the organization behind it. Other compelling points: the Magnascanner is far and away the instrument most widely used for diagnostic purposes by new or established Nuclear Medicine Departments; nearly 2000 hospitals are now serviced by Picker Nuclear. (Most Radioisotope Departments start with us and seem to stay with us.)

More. In less than 10 years the Magnascanner has become the keystone instrument in most Departments of Nuclear Medicine. This was the instrument that helped Nuclear Medicine specialists develop radioisotope diagnosis from a limited research technique to a practical, valuable, everyday, reliable, routine methodology. And in this rapidly-changing decade, the instrument changed too: multiple improvements and options were (and are always being) incorporated, making this the most up-to-date scanner available. Simultaneously, our line of other instruments for Nuclear Medicine expanded to the point of being the widest around. Nevertheless, nothing anyone has been able to do in this area (ourselves or others) has served to dislodge the Magnascanner from its keystone position in most Radioisotope Departments.

Now more about the new Magnascanner’s versatility. Every new Magnascanner has both automatic and manual modes of operation—the new automatic mode speeds and simplifies set-up and self-checks the entire photo-recording system prior to the scan. And this is the only scanner that supplements the usual black and white data presentation with “color scanning” (both photo and dot) which provides semi-quantitative radioisotope distribution pictures. The Magnascanner also offers: the widest choice of collimators, an ability to upgrade (easily) from a 3" detector system well suited to the needs of the beginning program to a faster 5" system, exclusive subtraction and two-color scanning, and dual-detector scanning.

A few final words about our obligations to you. We accept the premise that our obligations don’t end at time of delivery. We not only install the instrument and show you how to use it, but we feel it our obligation to help train personnel when an institution new to this field doesn’t have experienced personnel on staff. We have other obligations to you which our people are happy to detail. But meanwhile, consider further the choice of the Magnascanner (and the Picker commitment to you) as the keystone of your service too by requesting our new brochure number 130B.

Picker Nuclear, 1275 Mamaroneck Avenue, White Plains, N.Y. 10605
Can you see things better if they're bigger? Such as pictures of radioisotope distribution? Perhaps.

Or perhaps you'll simply find it more convenient to have a "super scintiphoto"—big as life, in a 1-to-1 correspondence between the gamma-emitting organ you want to visualize and its recorded image. More convenient, say, in comparing the scintiphoto to a radiograph.

That's why we've designed the Photo/Scope III. It snaps on one of the twin scopes on the Pho/Gamma III console. Has its own X-ray film cassette. Uses standard 11" x 14" film. Makes it easy to get sharp, life-size images of the organ or area you're investigating.

Photo/Scope III is only one of the many new data display, manipulation, and analysis options now available for the Pho/Gamma III. (Examples: Multidimensional analyzer, fast digital printer, 35-mm automatic time-lapse camera, chart recorder, computer-compatible magnetic tape system for rapid dynamic studies.)

Which means you should call your local Nuclear-Chicago sales engineer soon. Or write to us and we'll send you the facts.

(We're assuming you already know about Pho/Gamma III and its proved clinical advantages. If not, introductions are in order. Just ask us for the full Pho/Gamma III story.)

---

Big as life.

1-to-1 scintiphotos: Now you can make them with our new Photo/Scope III attachment for the Pho/Gamma® III Scintillation Camera.
Guides to the safe, effective use of modern radiation techniques in diagnosis and therapy.

Wagner

PRINCIPLES OF
NUCLEAR MEDICINE

Here is a practical appraisal of the fast-growing field of nuclear medicine—one that sets forth both present and potential values in augmenting current methods of medical diagnosis. With clarity and precision, Dr. Wagner and his expert contributors explain the physical, chemical and mathematical principles of nuclear medicine. The authors give you a comprehensive account of today's clinical applications ranging from a 60-page delineation of radiodiagnostic techniques in the thyroid gland to a 42-page discussion of radiation dosimetry. Uses for all types of radiation detecting and measuring equipment as well as for all types of radiopharmaceuticals are described. In addition the authors have skillfully correlated the new techniques of nuclear medicine with the more classical methods of diagnosis. Separate chapters are devoted to the application of radioactive tracer methods in diseases of blood, lungs, circulation, digestive system, brain, kidney, etc. Additional chapters advise you on the effects of radiation and radiation safety. A brief sampling of the scores of topics discussed includes: radioassay of hormone plasma—radioisotope renography—brain scans—whole body counting—in vitro tests, etc.


Rubin & Casarett

CLINICAL
RADIATION PATHOLOGY

The authors of this important new work present an authoritative and critical study of the adverse effects of therapeutic radiation in the human body. Chapter by chapter, they systematically delineate the pathogenesis of radiation effects in all major tissues, organs, and organ systems.

The concept of relative radiosensitivity of cells according to their behavior with respect to the combination of: proliferation, differentiation and individual life span are first discussed. With this as a base, the authors explain relative radiation sensitivity throughout the body. For all common types of radiation injury in each body area, you'll find specific and practical information on incidence, prevention and histologic change. For most body systems, a special diagram summarizes the clinicopathologic course of various levels of radiation injury: acute, subacute, chronic and late periods.

This valuable work offers assistance in prescribing safe, effective modes of X-ray diagnosis and therapy and in recognizing and evaluating radiation damage.


Murphy

RADIATION THERAPY

The New (2nd) Edition of this outstanding work brings you a wealth of up-to-date, comprehensive help on the indications, techniques, results, and complications of radiation treatment of cancer in each area of the body. Major revisions in this edition include current modifications of radiotherapeutic techniques with more emphasis on the use of high energy radiation sources, wedge filter techniques and moving beam and strip techniques. The new "T.N.M." method of clinical classification of malignant lesions and their extension has been used throughout the book.


W. B. SAUNDERS COMPANY

West Washington Square · Philadelphia, Pa. 19105

Please send and bill me: JNM 2-68

☐ Wagner—NUCLEAR MEDICINE—About $29.00
☐ Rubin & Casarett—RADIATION PATHOLOGY—About $45.00
☐ Murphy—RADIATION THERAPY—$45.00

Name ____________________________________________

Address __________________________________________

Zip ____________________________
T-3’s? OF COURSE!
but no instrument computes:

BLOOD VOLUME
as easily & inexpensively as the DYNOR

- Whole blood and plasma volume directly—
  NO CALCULATIONS
- Accurate measurements from 100–10,000
  mls—INFANTS TO LARGE ADULTS
- REPEAT MEASUREMENTS—automatic residual
  activity compensations
- ACCURACY comparable to devices costing
  four times more
- COMPACT & PORTABLE—use in the O.R.

Request Diagnostic Series No. 282 for details. Write
or call collect for a no-obligation trial demonstra-
tion in your laboratory.

NUCLEONIC CORPORATION OF AMERICA
810 Williams Avenue
Brooklyn, New York
(212) MA 4-7370

ANNOUNCEMENT TO AUTHORS

PRELIMINARY NOTES

Space will be reserved in each issue of THE
JOURNAL OF NUCLEAR MEDICINE for the pub-
lication of one preliminary note concerning new
original work that is an important contribution in
Nuclear Medicine.

Selection of the preliminary note shall be on a
competitive basis for each issue. One will be se-
lected after careful screening and review by the
Editors. Those not selected will be returned imme-
diately to the authors without criticism. Authors
may resubmit a rejected or revised preliminary
note for consideration for publication in a later
issue. The subject material of all rejected manu-
scripts will be considered confidential.

The text of the manuscript should not exceed
1,200 words. Either two illustrations, two tables
or one illustration and one table will be per-
mitted. An additional 400 words of text may be
submitted if no tables or illustrations are required.
Only the minimum number of references should
be cited.

Manuscripts should be mailed to the Editor, Dr.
George E. Thoma, St. Louis University Medical
Center, 1504 South Grand Blvd., St. Louis, Mis-
souri 63104. They must be received before the
first day of the month preceding the publication
month of the next issue, e.g., preliminary notes
to be considered for the January issue must be
in the hands of the Editor before December 1.
Name the radioisotope dose you want to calibrate:

<table>
<thead>
<tr>
<th>Radioisotope</th>
<th>Radioisotope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technetium-99m</td>
<td>Mercury-203</td>
</tr>
<tr>
<td>Iodine-131</td>
<td>Gold-198</td>
</tr>
<tr>
<td>Xenon-133</td>
<td>Chromium-51</td>
</tr>
<tr>
<td>Strontium-87m</td>
<td>Selenium-75</td>
</tr>
<tr>
<td>Gallium-68</td>
<td>Cobalt-60</td>
</tr>
<tr>
<td>Cobalt-57</td>
<td>Cadmium-109</td>
</tr>
<tr>
<td>Mercury-197</td>
<td>Iron-59</td>
</tr>
<tr>
<td>Radium-226</td>
<td>Cesium-137</td>
</tr>
<tr>
<td>Sodium-24</td>
<td>or what have you.</td>
</tr>
</tbody>
</table>

Calibrate them all with Nuclear-Chicago's Mediac® Dose Calibrator.

And read the amount of radioactivity, in microcuries or millicuries, on the lighted digital display. Sensitivity ranges from 0.05 microcurie (background) to 99.9 millicuries (999 millicuries for Tc-99m). Use any standard vial or syringe. Routine calibration with gamma-ray energies as low as 75 Kev. Backed by nation-wide, world-wide Nuclear-Chicago service.

Please write for the Mediac Dose Calibrator Brochure or consult your local Nuclear-Chicago sales engineer.
This new diagnostic kit + 30 minutes of your time = 12 easily done, clinically reliable, surprisingly inexpensive, totally completed T-3 tests.

This coupon + 2 minutes of your time = the whole story.

PICKER NUCLEAR
1275 Mamaroneck Ave., White Plains, N.Y. 10605

Sirs:
Please send the CHARCOAT story.
I now (do, don’t do) T-3 tests.
I now (have, don’t have) a well counter and scaler.

Name ____________________________
Firm or institution name ____________
Address __________________________
_________ Zip code ___________ N

This new T-3 test, dubbed the CHARCOAT T-3 test, is really the simplest around since it eliminates the long shakings, rinsings and multiple pipettings typical of T-3 tests. And since such activities often introduce inaccuracies, eliminating them improves reliability.

This is also the fastest T-3 going: you can do a dozen tests in less than 30 minutes. The CHARCOAT test actually cuts your T-3 time by ½.

The CHARCOAT T-3 test uses only ½ ml. of patient serum.

This test is clinically reliable—as you’ll see when you send us that coupon above.

The CHARCOAT T-3 test can use any conventional well-scintillation counter and scaler capable of counting I-125. Or —

We have an automatic CHARCOAT Computer which further simplifies the whole procedure by eliminating annoying calculations. (But don’t buy the CHARCOAT Computer if you don’t want to. We’ll rent it.)

Some T-3 tests are based on short half-life I-131 (8-day). The CHARCOAT test uses I-125 which has a 60-day half-life. This too can be an important saving.

No AEC licensing with this test.
Now send the above coupon for all the details. If it’s gone, just write “T-3” on a postcard with your name, address and zip code.

This new diagnostic kit + 
30 minutes of your time = 
12 easily done, clinically reliable, surprisingly inexpensive, totally completed T-3 tests.
Are you ordering radioisotopes piecemeal?

Are you ordering separately after each referral and then rescheduling the patient? Most drugs are on hand when the patient needs them. Why not radiopharmaceuticals?

If a hospitalized patient needs blood, he can have it within minutes. If an ill patient needs penicillin, it can be prescribed immediately. But if he should need a radio-diagnostic test, he may have to wait several days for the material to arrive.

There was a time when such waiting was necessary, but no longer. Many of the available radiopharmaceuticals have now reached the stage when they can be integrated into the mainstream of medical and hospital practice and can be "at hand" when needed. In particular, the unique 5-day precalibration of Squibb radioisotopes makes the need for ordering separately after each referral a thing of the past. Most laboratories can pretty well estimate what their approximate weekly need will be, so that everything can be ordered in one shipment to arrive on any given day. Thus, when a patient is referred, the diagnostic agent is already on hand and the test can be run immediately. Moreover, there is only one shipping charge. And if the material arrives for use during the latter part of the working week, Squibb will bear the cost of radioactive decay over weekends.

If you want to know more about this unique service feature, please contact your Squibb professional representative. He can arrange for a weekly "blanket order" that is shipped to you automatically for arrival on any day you specify.

It is also important that you know of the unique Squibb "prefill" program that anticipates and programs radiopharmaceutical parenteral production so that sterility and pyrogen test data are "in house" before the material is released. Thus, Squibb good manufacturing practices assure—even with radiopharmaceuticals—the same high standards you would expect in any regular parenteral preparation.

These are only a few of the many important features and services available to you when you use Squibb radioisotopes. Your Squibb representative will be happy to give you more details.

Medotopes®
Squibb Radiopharmaceuticals
unique 5-day precalibration lets you have your entire week's needs at one time

'SThe Priceless Ingredient' of every product is the honor and integrity of its maker.
Lung scan demonstrating abnormal perfusion of right lung, female patient, age 58; courtesy Washington University School of Medicine. (AP view at left, PA view at right.)

Proven Advantages of Lung Scanning

"... indicate the site and magnitude of pulmonary arterial obstruction before this is recognizable radiographically."¹

"... delineate normally vascularized pulmonary tissue and assess the pulmonary vascularization of roentgenographically obvious abnormalities ..."²

"... estimating the differences in pulmonary arterial perfusion between regions of the same lung."³

"... locates the nonfunctional or avascular region and thus supplements conventional pulmonary function tests and can replace differential bronchopulmonaryometry."⁴

"... estimation of regional pulmonary function, particularly in patients with emphysema, bronchiectasis, and chronic pulmonary tuberculosis."⁵

LUNG SCANNING

with MAA I 131

Aggregated Radioiodinated (I 131) Serum Albumin (Human)

Controlled Particle Size... A KEY TO GOOD SCAN RESOLUTION

Proper control of aggregate particle size is essential to obtaining good scan resolution. To assure this control, Mallinckrodt/Nuclear has instituted special production techniques which effectively minimize the number of small particles that do not contribute scanning information because they clear the arteriole — capillary bed too rapidly.

This "controlled uniformity" makes a positive contribution to good scan resolution, providing highly efficient temporary deposition of the scanning agent in the capillary field.

MAA I 131 is available in convenient source sizes as small as 500 microcuries. It may be used with reliance on its proven safety, shown by thousands of scans in hospitals all over the country. Lung excretion half-time is approximately 1 – 6 hours, and urinary excretion of 50 to 80% of the injected dose occurs in approximately 24 to 48 hours.

Mallinckrodt/Nuclear (formerly Nuclear Consultants) produces a complete line of radiopharmaceuticals for scanning, diagnostic tests and therapy. For further information: call collect to the Mallinckrodt/Nuclear laboratory nearest you.


Photomicrograph of MAA I 131 aggregates

Mallinckrodt

RADIOPHARMACEUTICALS

formerly Nuclear Consultants
Box 6172, Lambert Field • St. Louis, Missouri 63145

Laboratories:
Atlanta (404) 767-9446 • Chicago (312) 625-3930
Cleveland (216) LA 1-2221 • Los Angeles (213) CH 5-7693
New York (212) 939-5222 • St. Louis (314) AX-1-0540

Specifications
Sterile, non-pyrogenic aqueous suspension of heat produced aggregates of albumin, 30% of which are between 10 and 50 microns in size, and none larger than 150 microns.

Concentration is approximately 500 μCi/ml and specific activity approximately 500 μCi/mg at time of calibration.

Contraindications
Radiochemicals are contraindicated in pregnancy and during lactation and in persons less than 18 years old unless, in the judgment of the physician, the situation requires their use. In acute car palmitate, the procedure may be hazardous due to the temporary small additional mechanical impediment to pulmonary blood flow.

Side Effects
The results of extensive clinical studies with MAA I 131 have shown it to be extremely well tolerated. However, the literature does reveal one case in which administration of the product was associated with the death of a patient seriously ill with extensive adenocarcinoma involving the lungs. Antigenic reactions have not been reported, but the possibility of such reactions attendant to the introduction of serum albumin into the patient's immunological system should be considered.

This new, precision Thermoluminescence Analyzer comprised of the Model 2000A Thermoluminescence Detector (left) and the Model 2000B Automatic Integrating Picoameter (right) offers these operational features and advantages:

- Thermocouple feedback control of heater planchet temperature provides linear heating rates for glow curve analysis.
- Thermoelectrically cooled and temperature stabilized photomultiplier tube for constant low dark current.
- Automatic ranging assures accurate exposure readings from $10^{-2}$ to $10^5$ roentgens with no prior knowledge of sample exposure.
- Simultaneous analogue and digital readouts. Log or linear glow curves and Nixie display of the area under the glow curve with a single reading.
- For solid or powder dosimeters. Vibrated powder dispenser.
- 75% integrated circuits. Electrometer input amplifier with $10^{-13}$ ampere input sensitivity.

Call or write for complete specifications and details.

Visit Harshaw Booth: Scintillation and Semiconductor Counter Symposium,
Feb. 28-Mar. 1, Shoreham Hotel, Washington, D.C.
How do you prefer your 99m Tc?
STERILE, PYROGEN-FREE
SODIUM PERTECHNETATE Tc 99m
AS YOU NEED IT,
ALL WEEK LONG

99Mo/99mTc Sterile Generator

FAST...EASY...ECONOMICAL
- simple vacuum elution system for maximum dependability
- entire system sterile...one-time entry to easily accessible septa
- high-yield...high chemical purity
- multiple daily elutions possible

SUPPLIED: 100, 200
or 300 mCi at noon,
New York time, on Mondays
following shipment;
in nonreturnable lead
container, with complete
eluting accessories.
INDICATIONS: Brain scanning.

CONTRAINdications:
Should not be administered to pregnant or lactating women; or to patients under the age of 18 years, except when necessary diagnostic information cannot be obtained by other types of studies or can only be obtained at a risk greater than the radiation exposure caused by this drug.

WARNINGS: As with all radiopharmaceuticals, dose should be limited to smallest reasonable amount consistent with greatest value in terms of relevant diagnostic information.

PRECAUTIONS: Approved radiation safety precautions should be maintained at all times.

ADVERSE REACTIONS: None reported to date; however, patients should be carefully observed.

DOSAGE AND ADMINISTRATION: 2 to 10 mCi, administered by intravenous injection.

Physicians should consult product package insert before administering.

sodium pertechnetate Tc 99m

SUPPLIED: In lead-shielded vials in convenient COMPUTERCAP™ packaging; 10 or 15 mCi at the time of calibration.
Tracerlab Film Badge Service

where people count!

A dosimetry badge is a personal thing; the health, the very life of the wearer may depend on it. That's why Tracerlab people give so much personal care and attention to each and every film badge that passes through their hands, before and after computer processing and quick return to you. And more dosimetry badges pass through their skilled hands than any other monitoring service. Yours should be among them.

You can also count on Tracerlab people for the safest, most reliable radioactive sources in the world — a wide selection of stock or custom types for standardization and analysis. For dependable products and services in the life sciences and health physics, including a broad range of radioanalytical services, come to Tracerlab — where people count!

INDEX TO ADVERTISERS

Abbott Laboratories
North Chicago, Ill. .......... Cover, i, vi, vii, viii xxv, xxvi, xxvii

Baird-Atomic
Cambridge, Mass. ............... xxviii, IBC

Harshaw Chemical Co.
Cleveland, Ohio .................. xx

ICN—U.S. Nuclear Division
Burbank, Calif. .................. x

Mallinckrodt/Nuclear
St. Louis, Mo. ................... xviii, xix

Neisler Laboratories
Tuxedo, N.Y. .................... xxi, xxii, xxiii

Nuclear-Chicago Corp.
Des Plaines, Ill. ................. xii, xv, BC

Nucleonic Corporation of America
Brooklyn, N.Y. ................... xiv

Ohio-Nuclear
Cleveland, Ohio ................ ix

Philips-Duphar
Amsterdam, Holland ............ v

Picker Nuclear
White Plains, N.Y. .............. xi, xvi

W. B. Saunders Co.
Philadelphia, Pa. .............. xiii

Squibb, E. R. & Sons
New York, N.Y. ............... ii, xvii

Tracerlab—Technical Products Group .. xxiv
The most important announcement from Abbott Radio-Pharmaceuticals since Abbott’s entry into the nuclear field.
Abbott Laboratories is now

This is the LOGIC™ Well Counter—only inches larger than this page (12 1/4" x 4 1/16" x 13" to be exact)
in Nuclear Instruments

The LOGIC Series—the most compact counting systems ever designed—is available now in 3 models.

The LOGIC Counting Systems offer:
- Compactness (micrologic integrated circuitry)
- Dependability (pre-tested for 40 hours)
- Portability (25-35 lbs.)
- Versatility (choice of 3 models)
- Quality (backed by Abbott)

For more information, contact your Abbott man who knows both instruments and radio-pharmaceuticals

ABBOTT LABORATORIES  NORTH CHICAGO, ILLINOIS
Abbott Laboratories, S.A., 2, rue Thalberg, 1201 Geneva, Switzerland
What is the secret behind the Baird-Atomic Scintillation Camera

The Autofluoroscope® has been perfected. Its secret lies in the detector. Small individual crystals forming a rectangular 294 element matrix are positioned to collect data from that part of the patient's body opposite each crystal. Each crystal is tied electronically to its own magnetic core memory in the computer console, consequently it is the only scintillation camera specifically designed for quantitative imaging where discreet picture elements are collected and stored and may be manipulated for both visual observation and quantitative assessment at will. Send for Brochure. 33 University Road, Cambridge, Massachusetts 02138, Telephone: 617 / 864-7420. Baird-Atomic Limited, Hornchurch, England. Baird-Atomic Europe, The Hague, The Netherlands.
You are now looking at 1200 feet of liver, kidney...

...brain, heart, lung, pancreas, thyroid, and placenta studies.

A reality because Nuclear-Chicago now offers a Magnetic Tape System for the Pho/Gamma® III Scintillation Camera.

You are, of course, looking at a reel of magnetic tape. It's the newest storage medium for data on the distribution of radioisotopes in body organs, as processed by our Pho/Gamma III.

The tape is put through its paces on the tape transport in our new Magnetic Tape System. The clinical information itself is transferred to the tape from the Pho/Gamma III by our multidimensional analyzer.

All of this means that you can perform a multitude of studies, on a variety of organs, under many different conditions, at any time. And you can record your data permanently, on tape, for later analysis.

Then, you can play back the tape and, by means of the multidimensional analyzer, manipulate the data or re-orient it on a scope display for photographic recording. Or you can delineate the data and read it out digitally.

Alternatively, if you have access to an off-line computer, you can feed the taped data to it and take full advantage of the benefits of computer-processing of clinical information. Which means automatic analysis, correlation, and much more in a properly programmed computer.

The man who knows all about all of the above topics is your Nuclear-Chicago sales engineer. Ask him about the Magnetic Tape System—and about our other new accessories for the Pho/Gamma III, as well. Or simply write to us.

Research in the Service of Mankind

NUCLEAR-CHICAGO CORPORATION
A SUBSIDIARY OF G. D. SEARLE & CO.
313 East Howard Avenue,
Des Plaines, Illinois 60018, U.S.A.
Donker Curtiusstraat 7, Amsterdam W.