A New Addition to Abbott's Radio-Pharmaceutical Products Line

Performance

Built-in 500 ml. saline supply provides 15 to 16 milkings per week.

You have clear, clean eluate from first use. Highly concentrated serial elutions can be made daily.

Low aluminum levels. A special process reduces aluminum levels to make them all but undetectable by normal lab methods. Less trace impurities permit wide diagnostic usage.

Safety

At least 1½ inches of lead lines generator column. Quick milking time lessens exposure.

See-Thru Elution Shield further reduces radiation exposure and simplifies milking. Volume can be measured without lifting vial from elution shield. (Shield is available with first generator.)

Transparent Needle Guard protects fingers.

Convenience

Compact, pre-assembled, and ready to use. Attach needle and you’re ready to elute. Saline solution is an integral part of the generator.

Storage compartment on top contains six 30-ml. elution vials, needles, labels, and instructions.

Self-align milking port. Place elution shield in port, and both needle and evacuated vial are automatically aligned.

Pushbutton Elution. Press down to open valve, and a slight turn locks it for automatic elution.

Automatic Disposal Service. Used generators are no longer a problem. Abbott's Elutek service program helps you dispose of them quickly and easily.

Molybdenum and Technetium-99 Decay tables are on front label—can be seen at a glance.

Carrying Handles add to convenience—help you avoid mishaps.
How many data systems perform simultaneous real time image processing and general laboratory computation?

Just one.

With the Intertechnique Cinescintigraphy system you have a simple-to-use and preprogrammed system suitable for all your routine clinical imaging needs. And at the same time a powerful general purpose computer for radioimmunoassay determinations and other laboratory applications. Competitive systems promise this dual versatility, but Raytheon delivers.

For image data processing you can choose between a hard-wired function approach or utilize the clinically proven software. What's more, you can easily add programs specific to your clinical and laboratory requirements with LEM — our user-oriented language.

If it all sounds too good and simple to be true, challenge us. Call or write for more details on how our system can satisfy your present and future needs. Raytheon Company, Medical Electronics, 40 Second Ave., Waltham, Mass. 02154. Tel. (617) 899-5949.
Simplify your life a little.
For further information and service, please contact the Farbwerke Hoechst AG subsidiary in your country.
YOU AIN'T SEEN NOTHIN’ YET...

We at MDS have established ourselves as the leader in the design and implementation of Nuclear Medicine Data Processing Systems. Next month our introduction of a modular approach to image acquisition and manipulation will further demonstrate our leadership.

medical data systems corporation
A Warner-Lambert Subsidiary
Designers and Builders of Computer Systems for Medicine
2300 Fisher Building  Detroit, Michigan 48202
I conquered cancer and heart disease, and switched to preventive medicine...
The journey won't be easy. You'll have to travel past the limitations of your five senses. And be extra-familiar with the submolecular, as well as the intracellular, world.

We have the instrumentation to take you there. For instance, Nuclear-Chicago's Pho/Gamma Scintillation Camera. It's the choice of more than 95% of U.S. teaching hospitals and medical schools. They like its high resolution, ease of patient positioning, and its choice of 12 specialized collimators allowing one to switch from routine, "bread-and-butter" imaging to highly sophisticated procedures.

Our Pho/Dot is the world's most proven rectilinear scanner. Our Liquid Scintillation and Automatic Gamma Counters embody the newest ideas in capability-expansion for radioimmunoassay and competitive binding tests. And we could say equally good things about our Pho/Gamma Tomocamera, Data/Store Playback System, and similar products. But that wouldn't be modest.

When the last of the Great Plagues that afflict humanity has been wiped out, it will be because dedicated people have pinpointed the method of attack. With instruments like these.
90 minute HPL TEST

BIOLAB s.a.
is now introducing a better way of pregnancy monitoring with a new RIA BIOKIT® of HPL (Human Placental Lactogen).
Now you get the answer in 90 minutes on only a few microliters of plasma.
BIOKIT®, a product of BIOLAB Belgium.
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Please send me complete information about
☐ HPL kit
☐ Other products for RIA

Name ____________________________
Adress ____________________________
City __________________ State ______ Zip ______ Country ______
The NISE multi-purpose, Adjustable Collimator, (patented) provides maximum flexibility in selecting the optimal resolution and sensitivity for the organ you wish to scan. It gives you the widest choice for more sophisticated studies at the lowest price.

**SPECIAL FEATURES OF PRACTICAL IMPORTANCE:**

- Does the job of 9 conventional collimators ranging from 5/32" (3.968 mm) up to 5/8" (15.88 mm) FWHM resolution.
- Has for a large size collimator, an extended depth of focus unmatched by other collimators.
- Most scan-combinations are made without removing the heaviest part of the collimator from the detector.
- Storage space is no problem. Each collimator comes in a neat storage box. (Dual scanner owners dream!)
- Total cost for both the Low- and High Energy set is Less than conventional collimator sets with limited possibilities.
- Available to fit most commercial scanners on the market today.**

**Focal Length for:**
- 3" Detector — 4"
- 8" Detector — 6"

Model: 7201 (5"-127 holes) *
Energy: up to 390 KeV
Resolution FWHM: ≤ 5/16" (7.937 mm)
≤ 3/8" (9.526 mm)
≤ 7/16" (11.11 mm)
≤ 1/2" (12.70 mm)
≤ 9/16" (14.29 mm)
≤ 5/8" (15.88 mm)
Geometric - Focal Length: 5"
Geometric - Focal Depth: -33.3 mm for 5/16"
-108 mm for 5/8"

Model: 7202 (5"-169 holes) *
Energy: up to 180 KeV
Resolution FWHM: 5/16" (7.937 mm)
3/8" (9.525 mm)
7/16" (11.11 mm)
1/2" (12.70 mm)
9/16" (14.29 mm)
5/8" (15.88 mm)
Geometric - Focal Length: 5"
Geometric - Focal Depth: -34.1 mm for 5/16"
-110 mm for 5/8"

*As shown at the 19th Annual meeting in Boston and the conjoined North-South California S.N.M. meeting in San Francisco, September 21 - 23, 1972

Optional Ultra-Fine Resolution section (not shown), increasing the versatility to an equivalent of 9 collimators in one: FWHM Resolution: 5/32" (3.968 mm)
3/16" (4.762 mm)
1/4" (6.350 mm)

FOR ADDITIONAL INFORMATION PLEASE WRITE TO:

NUCLEAR INSTRUMENT SERVICE & ENGINEERING INC.

20018 STATE ROAD • CERRITOS, CA. 90701 • ATTN: Roel Jonker
Single probe scanner automatically delivers diagnostic information

A combination of automatic features, preset with simple push button and thumbwheel controls, facilitates operation of General Electric’s single probe digital scanner; thus provides less opportunity for technic errors.

Scanning speed is controlled and displayed automatically at the panel meter after desired line spacing and information density settings have been selected and the hot spot located. And, speed can be adjusted manually, if desired.

Other automatic features include: film exposure slit length changes with line spacing to prevent scan gaps or overlaps; scalloping corrections to align the photoscan display; and, photorecording density settings between preset minimum/maximum values.

The GE single probe scanner also provides a built-in scaler; push button probe positioning; easy-to-read light-emitting diodes; and four collimators as standard equipment.

Scan information is available three ways: standard format includes mechanical dot and photorecording. GE’s electronic color Video-display and Processing Unit is optional.

Videodisplay Processor extends the diagnostic value of any scanner or nuclear camera. Permits viewing and quantification of patient count information, in black and white or fully functional color. Images are displayed on a video monitor; can be manipulated long after the patient leaves the department to enhance desired details and aid interpretation and diagnosis. Information remains stored in the VDP’s electronic memory, for further manipulations, until erased. Enhanced VDP data may be played back to the detector and recorded on 14 x 17 inch film. Scans can be recorded on cassette tape as well as on photographic film; count information from any scanner or camera can be transmitted to a VDP unit over regular telephone lines.

The complete nuclear laboratory The Nuclear Medicine Accessories & Non-imaging Instrumentation catalog by General Electric offers a complete product listing for the nuclear laboratory.

The featured instrument systems are for the most part, unique in their ability to provide versatile yet functional diagnostic tools.

In addition to a full line of diagnostic instrument systems, the catalog describes protective equipment, film processors and illuminators, phantoms, tables and other nuclear supplies.

This free catalog and specific product information is available by contacting your GE Medical Systems representative.
Scan the whole body or a single organ with equal ease

The value is well established for viewing a full-size nuclear scan of a single organ on 14 x 17 inch film. Yet it's equally easy to scan any patient's entire body and minimize the image to fit the same size film, using General Electric's Maxiscan Whole Body Digital Scanner.

The unit's two probes and three scanning directions provide maximum patient count information with minimum technic error and reduced set up time.

Skeletal surveys, for any size patient, can be conducted within a travel range of 2 feet wide by 6 feet 8 inches long. This permits the location and diagnosis of bone metastases beyond a specific organ, without a series of small area scans; such as, prior to radical mastectomy procedures.

In addition to whole body scans, Maxiscan performs local area studies too, all with minimum patient movement. The scanner's two probes and three scanning directions cover the entire lung, top and bottom, without turning the patient. The top probe angulates 270° and has a powered 12 inch vertical travel. With optional vertical plane scanning, the patient can be seated upright; also, vertex views of the brain can be accomplished with the patient reclining normally.

Rotating switch settings permit selection of full size scans or miniifications of 2:1, 3:1, 4:1 and 5:1. This versatility, plus push button quadrant placement controls, precisely segments four different scans on a single 14 x 17 inch film, with no image overlap.

Maxiscan controls are sequentially arranged to minimize the operator's back and forth movement between the electronics console and the gantry. Also, a number of automatic features are controlled with push button and dial settings. For example: scanning speed. After desired line spacing and information density settings have been selected and the hot spot located, scanning speed for the procedure is automatically displayed; no charts, graphs or calculations.

To view and quantify scans in black and white or color, Maxiscan can be combined with GE's Videodisplay and Processing Unit.

Non-invasive technic for diagnosing bone diseases

Gradual decreases in the amount and strength of bone tissue, caused by osteoporosis and other metabolic bone diseases, can now be identified before serious complications set in.

This simple, non-invasive diagnostic unit, available from General Electric, measures changes and losses in bone mineral content and bone width. This permits quantitative assessment of skeletal integrity. Ideal for serial studies to determine therapeutic progress.

The Bone Mineral Analyzer includes a scanner, which automatically transports a closely collimated beam of mono-energetic gamma rays (125I) across the limb in a programmed pattern. The generated data is transmitted to a mini-computer which calculates the mineral content and bone width; displays measurements in digital readouts. This data can be related to normal and specific patient populations.

The system is compact, readily portable and easy to operate. The radioisotope used can be purchased from General Electric.

General Electric Medical Systems, Milwaukee and Toronto.
In Europe, Elscint GmbH, Wiesbaden; Elscint France SARL, Buc.
...for tagged sulfur colloid with clarity—no flocculent precipitate

All kit components are individually wrapped, fully labeled, and packaged in order of use.

Disposable two-compartment syringes protect stability, and reduce steps in processing.

To sum up: with Collokit, preparation is easier, faster, and there’s less chance of error.

Abbott Laboratories
Radio-Pharmaceutical Products Division
North Chicago, IL 60064
If you need 50 precisely-timed exposures for a dynamic scintillation scan, this is your camera.

The Nikon F 35mm single lens reflex with motor drive and 250-exposure back. The ideal tool for dynamic scans which require extremely precise timing of a sequence of exposures. Fires at rates up to four frames per second with high accuracy. This back can be loaded with up to 33 feet of 35mm film.

For static scans, you can use the camera with standard film cartridges. You can pre-load only as much film as will be required for an individual patient. So, with a little help from an automatic film processor, you can have the results back before the patient leaves the room! Quantities of duplicate images can be made quickly and easily.

The Nikon camera is often used with a standard 50mm f1.4 Auto-Nikkor lens for recording cathode ray tube images, but special high-efficiency CRT-Nikkor lenses are also available to fit. We would be happy to consult with you on the best lens and camera combinations for your applications. Please write:


The Motor-Driven Nikon F Camera
You can depend on a consistently high level of reproducibility and accuracy with Thyopac thyroid function tests. Every batch of material is tested against 11 different standards for reproducibility — and each batch is tested again at expiry date. Reproducibility is thus assured over the whole clinical range during the life of the kit. This is the service offered by The Radiochemical Centre.

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Combined use of Thyopac-3 and Thyopac-4 will give you a more precise Free Thyroxine Index which eliminates complicating factors such as raised TBG levels due to pregnancy and allows rapid separation of the normals from the distinctly abnormals; it also provides you with more accurate information on the areas in between.

invariably the best thyroid function tests

The Radiochemical Centre Amersham England
Also available in the USA, South America and Canada from Amersham/Searle, 2636 S. Clearbrook Drive, Arlington Heights, Illinois 60005.
The Simple Kits

MPI Bone Scintigraphin™ Reagent
Instant Livercolloid™ Reagent
Instant Lungaggregate™ Reagent

Just add $^{99m}$TcO$_4$ and shake!

The kits are supplied with mixing vials and a lead shield for storage. These simple reagent kits are proof that Medi+Physics stands for things to come. For information on licensing and clinical use of our products please call our Emeryville Laboratory toll free at (800) 227-0483.

In California phone (800) 772-2446. In the Bay Area phone (415) 658-2184.
We have built a unique system to acquire, playback and analyze Gamma-Camera studies.

Our Image Recorder is the only instrument capable of reproducing Gamma-Camera studies with the original image quality and the option of increasing or reducing the duration of the study without degradation of information inherent in digital systems.

Our system consists of the Image Recorder, the Dual Channel Ratemeter/Recorder, the Variable Persistence Monitor and the Dual Area Generator.

Our Image Recorder utilizes standard ¼ inch audio tape as its recording medium, resulting in a savings in money, time and storage space.

Areas of interest are presented brightly outlined on otherwise normal camera image for easy first-try area placement.

The R.B.E. system components are simple to operate and have proven to be effective and consistent in clinical use. Tapes are machine to machine compatible and the system can operate independently for teaching and training purposes.

We, of course, guarantee service on a 24-hour basis. You can purchase our system in total as well as in components, according to your individual requirements. Our total system price $24,350.00.

If you have any questions please call collect at (714) 687-1654.

Riverside Bio-Engineering, Inc., 5835 Jurupa Avenue, Riverside, CA 92504
Some scanners offer everything Baird-Atomic does.

Except the price.

For good reason: Since we don’t offer a dual head scanner, our price is understandably lower. But with the same, even faster, patient processing time!

Competitive systems with a dual head usually list for $35K. Is dual head scanning really worth the $12K more than our scanner? We don’t think so. Especially when you’re getting started, you need a scanner that does the most, for less; because you’ll eventually get a gamma camera to compliment your scanner.

So why pay for a capability of limited value? Our Verti-Scanner has proven to be more versatile, with equal to or better patient processing time, but at a substantially lower price tag.

Versatility: Scanning versatility is important in a hospital’s nuclear medical department. For vertex brains or upright lungs (fig. 5), no other system can compare. Our Verti-Scanner makes set-up easier and faster through push-button operation and patient positioning right at the detector (fig. 2). The Verti-Scanner also has a 2:1 and 4:1 reduction system which enables you to produce minified whole body images (fig. 4), with the added benefit of five quadrant selections (fig. 3).

Price/Performance: With our new 1507 rectilinear Verti-Scanner, you get vertical or regular scanning on a dual 14” x 17” film cassette and on teledeltos, with whole body minification; complete integrated circuitry, and three plug-in boards for an entire control panel that you can service yourself for excellent reliability and maximum “up-time”.

In our price range, no other rectilinear scanner offers as much. And if you don’t need vertical scanning now, add it later. But get our Servo-Scanner model 1505 now, at an even lower price tag.

Baird-Atomic also provides two shielded collimators (ten to choose from) with every system, plus free installing service, full one year warranty, complete technologist and physician training, plus modular service contracts where you perform your own system checks.

Ask our customers: For versatile, economical, proven scanner performance, look at our Verti-Scanner or Servo-Scanner. Our customers did; because they went through the same evaluation and chose Baird-Atomic. Send for all the details and see for yourself.
Produced regularly by the NEN cyclotron. Supplied as $^{67}$Ga citrate in isotonic solution as a sterile, non-pyrogenic radiopharmaceutical. Information pertaining to the clinical use of this nuclide furnished on request. Call us: 617-667-9531

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ON RESPONSIBILITY.

In our role of providing radiopharmaceutical products, we at Cambridge Nuclear are constantly aware of our responsibility in maintaining the high standards you demand and deserve.

It’s important to us, to you and to your patients.

Because of this, we feel you’ll be interested to know of our recent affiliation with N L Industries, Inc., a company with sales nearing a billion dollars annually and with an international reputation for the excellence of its products.

As a subsidiary of N L Industries, we’ve been able to expand both our laboratory and technical service staff and to insure acceleration of our program to develop new products for advanced diagnostic and therapeutic purposes. And, of course, we’ll continue to provide the most dependable delivery service and to assist you in every way possible with licensing and technical advice.

In all these ways, our goal is to remain fully responsive to the changing needs of clinical nuclear medicine—to serve you and your patients better.

Cambridge Nuclear
Radiopharmaceutical Corporation
a subsidiary of N L Industries, Inc.
575 Middlesex Turnpike, Billerica, Mass. 01821
P.O. Box 528, Princeton, N.J. 08540.
Call us in Massachusetts at 617/935-4050;
or in New Jersey at 609/799-1133.

Radiopharmaceuticals from Cambridge Nuclear:
Technetium Products, Iodine 125 and 131, Calcium 45 and 47, Potassium 42, Sodium 22 and 24,
Strontium 85, Tritium H3, Bromine 82, Sulfur 35, Phosphorus 32, Chromium 51, Xenon Products.
From a copper engraving: Hippocrates helping the sick in the market place. (Bettmann Archive).
The nucleus of our system is the Electronic Programmer. It alters the deflection signals normally used to displace the CRT beam. The image displayed is manipulated in size, location, duration and number. The CRT image moves, not the camera film. That’s the essence of our system. Making it “multi-format” and revolutionary. Use the 750-01 Programmer with your existing cameras. Select 1 through 16 frames per film, manually or electronically advanced on the CRT. The size can range from full display (full use of CRT diameter) to 1/16th. Add our 750-02 8 x 10 X-ray Camera which records as many as 16 frames of dynamic flow information on each sheet of 8 x 10 film. Or the 750-03 Back which permits simultaneous recording on 4 x 5 cut film, Polaroid, and/or microfiche. Using the microfiche camera back, as many as 80 frames can be placed on a single microfiche 4 x 5" film, then enlarged for reading with the 750-04 desk top viewer.

For further information, write or call

Dunn Instruments
1280 Columbus Avenue, San Francisco, Ca. 94133 / Phone (415) 776-7033
Xenon pulmonary studies have presented some problems in the past, notably, recording of extraneous radiation, operator safety and the introduction and collection of the radioactive gas.

By incorporating a unique combination of safety and operational features into the X-133 Xenon Spirometer, Collins has achieved maximum operating efficiency with the highest degree of safety for technician and patient.

Collins X-133 Spirometer offers safe, efficient pulmonary testing with radioactive gases.

Single breath ventilation, perfusion and steady state ventilation are among the studies routinely effected with the X-133 Spirometer.

Some of the safety and operational features include lead shielding to UL subject 544 requirements; less than .2 MLR/Hr at a distance of 5 cm. with a 2.0 mCi/Liter concentration; safety alarm signals for upper limit of spirometer bell; easily cleaned and sterilized; motor blower for complete mixing and petcock for admitting radioactive gas by syringe.

Further information and specifications on the X-133 Spirometer available on request.
Clinical Newsletter
from Bio-Rad

Straight talk about a new T-3 test

Bio-Rad's new TRI-COUNT T-3 combines simplicity, reproducibility and low cost.

Bio-Rad recently introduced a new T-3 by column test called TRI-COUNT that combines simplicity and reproducibility at a price you may find hard to believe. We accomplished all this by utilizing the same ion exchange technology as the Bio-Rad T-4 by Column Test. We kept the test as simple and uncomplicated as possible, building the reproducibility into the test itself rather than depending on operator technique.

Simplicity

TRI-COUNT T-3 has only three quick steps: mix, pour and count.

The sample is first mixed with radioactive T-3 buffer solution and allowed to stand at room temperature 15 minutes or more. The time is not critical. If the operator can't get to the next step for an hour it won't make any difference in the final results. Next, the mixture is poured into the TRI-COUNT T-3 column and the eluate collected. Finally, the eluate is counted to determine T-3 value. That's all there is. No centrifugation, no incubation, no precise timing. It's a simple matter of mix, pour, count.

Low Cost

We set out to design the simplest and most reproducible T-3 test possible. When the laboratory results were fully evaluated and the test's simplicity became readily apparent, the low cost came as no surprise. Actually laboratories save money two ways with TRI-COUNT T-3: They save money when they buy it and they save time when they use it. An individual test can be performed in only 20 minutes and 20 tests can be completed in just 40 minutes.

Reproducibility

TRI-COUNT T-3 has the highest degree of reproducibility of any T-3 test now on the market. There are three major reasons for this.

1. The close control of the ion exchange resin manufactured by Bio-Rad specifically for this T-3 test.
2. The simplicity of the test that practically eliminates any effect of differences in operator technique.
3. The elimination of hormone degradation products as a cause for error. The TRI-COUNT T-3 column is designed to adsorb hormone degradation products and separate them from the equilibration reaction.

None of this "just happened". It was all designed into the test at the start to reduce and eliminate potential errors before they occurred.

---

Send introductory offer at $39.95 (50 tests).
Send more information.

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High-speed scintiphotography generates lots of film—fast. Filing and organization problems come right along with it. RADX plastic film holders mount, organize and protect 35mm or 70mm film—in tough, durable transparent plastic. Easy to mount. Easy to view. Easy to file. The 35mm size holds three 6-frame film strips in a 5” x 8” holder. The 70mm size holds five 5-frame strips in a 14” x 17” holder. By the carton or by the case.

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- CPS & PERCENTAGE READOUT
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  ONE YEAR

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For DEEP VEIN THROMBOSIS DETECTION, the Model 145 offers
the important features of portability, standard D cell operation yielding
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Using I-125 labelled fibrinogen and the Model 145, early detection of
deep vein thrombosis of the legs can be accomplished. With the Model 145,
the leg is scanned after intravenous injection of the labelled fibrinogen. As
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SPECIFICATIONS
RANGE: 30, 100, 300, 1000, 3000 cps
and 0 - 120%
TIME CONSTANT: Fast 2 sec., slow 14 sec.
SIZE: 4½ x 5½ x 8 inches (HxWxL exclusive
of handle).
WEIGHT: 6.5 lbs total

DETECTOR: 1mm x 1 inch NaI (TL) mounted
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PRICE: $995.00 — FOB Wellesley,
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A Recipe for Simplicity
Prepare materials as needed
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Technetium Sulfur Colloid Kits
- Non contamination packaging
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  Colloid is prepared with a specific activity up to half that of the pertechnetate solution.
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VC-101 Vertex Scanning Cape $50.00
PR-252 Personal Radiation Monitor $90.00
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For catalog describing the above and a wide variety of additional products write or call:

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7 FAIRCHILD COURT • PLAINVIEW, NEW YORK 11803 • (516) 433-8010
series 84—the total scanning system

8416 MEMOSCAN—Tape Replay System
Records scan data on magnetic tape which can be played back to produce additional photorecordings. During playback, changes may (or may not) be made in background erase, intensity, and contrast enhancement to provide a readout different from the original. Regenerations can be made at half-size if desired. Brain phantoms above demonstrate variations from same original scan.

INTEGRAL PATIENT COUCH
Standard on all Series 84 Scanners.

NOISELESS CRT DISPLAY
8 x 10-cm storage monitor (which can also be used in non-store mode) displays scan progress without annoying noise.

SUPERIOR COLLIMATORS
Choose between two focal lengths: 3.5" (8.9 cm) or 5.0" (12.7 cm) and three energy ranges: up to 180 keV, 370 keV, and 550 keV. All are designed to maximize sensitivity without allowing excessive septal penetration for the maximum energy level in the range.

8415 PROBE MOUNTED RATEMETERS
To facilitate set-up and positioning, ratemeters can be mounted on the detector.

8417 COLORSCAN—Interactive Video Display
A scanner data system capable of displaying images in 8 or 16 colors or in 8 or 16 shades of gray. Image is retained in core memory and may be manipulated to provide background erase, contrast enhancement, statistical smoothing, subtraction or summation—AFTER THE SCAN.

8418 100 keV-1 MeV WINDOW
Switch selectable 100 keV-1 MeV window maximum. Wider window is useful in capturing a higher percentage of the energy emissions from isotopes with multiple photopeaks, i.e. $^{67}$Ga.

8409 SCAN MINIFICATION
Whole-body scans on one 14 x 17-inch film. Scan livers, lungs, and brains at a fraction of the time required for 1:1 scanning, using 2:1 or 5:1 reductions with no loss in quality or detail.

The standard items and optional features available with the Series 84 make it a total scanning system. All options are field installable on all Series 84's. It's company policy.
TechneColl
Kit for preparation of Technetium 99m Sulfur Colloid

CAUTION: NEW DRUG — Limited by Federal (U.S.A.) Law to Investigational Use
READ ENTIRE PROCEDURE BEFORE USE (SEE PACKAGE INSERT)

Mallinckrodt Chemical Works
St. Louis, Missouri 63160

PACKAGE CONTAINS
Five Technetium-99m Sulfur Colloid preparation units
Each unit contains:
1. Reagent 9/2 (0.2 ml with 50 mg Technetium-99m, 37 MBq)
2. Precipitate anticoagulant 2 ml
3. Sodium citrate solution 0.1 m, 2 ml
4. Sodium citrate solution 0.01 m, 2 ml
from Mallinckrodt...

new convenient kit for preparation of Technetium-99m Sulfur Colloid

Now you'll find it easy to prepare technetium-99m sulfur colloid in your own laboratory. This new kit was designed to help you—to make the procedure as reliable as possible—to provide you with a finished product having consistently high quality.

The Mallinckrodt/Nuclear Technecoll™ Kit offers exclusive convenience in use:

- Dispenser package makes the preparation units readily available.
- Viewing aperture shows when it's time to reorder.
- Each preparation unit is complete and self-contained, to eliminate possible mixing of components.
- Unique two-compartment syringes permit separate storage of reagents for maximum stability.
- Mallinckrodt/Nuclear's formulation allows use of the kit with any commercially available generator.

Try this new kit now in your own laboratory (subject to necessary licensing). Ask your Mallinckrodt representative for a demonstration.
ABUSCREEN™ Radioimmunoassay for Morphine is a specific and unusually sensitive test for the presence of morphine and its analogs in biological specimens.

The test procedure is based on the competitive binding to antibody of radiolabeled antigen* and unlabeled antigen, in proportion to their concentration in the solution. Unlabeled antigen displaces radioactive antigen from the limited antibody present.

An unknown specimen is added to a test tube containing known amounts of morphine antiserum and radiolabeled antigen. Following precipitation and centrifugation, the supernatant fluid is transferred to test tubes for counting in a scintillation counter. A positive specimen is identified when its radioactivity is equal to or greater than that of the positive control.

Results can be quantified by comparing counts per minute (CPM) obtained from dilutions of the unknown specimen with the average CPM obtained from dilutions of the morphine positive control, plotted as a standard curve.

*Either tritium- or iodine-labeled antigen available

<table>
<thead>
<tr>
<th>COMPARISON OF MORPHINE SCREENING PROCEDURES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ABUSCREEN™ Radioimmunoassay</strong></td>
</tr>
<tr>
<td><strong>Recommended Level of Sensitivity</strong></td>
</tr>
<tr>
<td>60 ng/ml</td>
</tr>
<tr>
<td><strong>Labor Throughput</strong> (specimens per person per 7½ hour shift)</td>
</tr>
<tr>
<td><strong>Labor Cost</strong></td>
</tr>
<tr>
<td><strong>Instrument Capacity</strong> (based on one shift)</td>
</tr>
<tr>
<td><strong>Treatment of Test Specimen</strong></td>
</tr>
</tbody>
</table>

*Exclusive of sample identification and labeling and evaluation of results.
†Manufacturer's claim.
PROVEN: GREATER RELIABILITY THAN COMMONLY USED SCREENING TECHNIQUES

In a study* comparing the reliability of ABUSCREEN™ Radioimmunoassay for Morphine with three other primary screening procedures, urine samples from 72 known addicts who admitted to heroin use were analyzed by all four methods. Test results are summarized in the accompanying graph.

THE PRIMARY SCREEN FOR HEROIN ABUSE

Abuscreen™ Radioimmunoassay for Morphine

- **specific heroin assay**—The test utilizes an immunological reaction, and thus is specific for morphine and its analogs, minimizing the problem of false positives.

- **highly sensitive heroin-assay**—The test utilizes a radiochemical method, and thus is highly sensitive, making false negatives rare.

- **results achieved rapidly**—The procedure is simple and rapid, needs no hydrolysis or other pretreatment of urine, and does not require highly skilled personnel. Easily adapted to automated processes, it can be used for large- or small-scale screening as well as stat testing.

- **provides objective results**—The nature of the test procedure eliminates subjectivity in interpreting results.


In this study, tritium-labeled morphine was used. Reevaluation of the study, using the same antiserum lot and 14C morphine, produced similar results.
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Ultra-TechneKow®
Technetium Generator

with 4 New Features

1. New enlarged lead shield reduces radiation exposure to the operator. With at least 1½ inches of lead all around the generator column this is one of the best shielded generators available today.

2. New “Ion Control” Process (patent applied for) reduces aluminum level to a point where it is virtually undetectable by normal laboratory test methods. The eluate may be used with any of the currently available sulfur colloid kits or with other tagging procedures requiring low aluminum levels.

3. New 500-ml saline supply allows as many as 15 or 16 elutions per week. The saline supply is built in and factory sealed, an exclusive feature of the new Ultra-TechneKow.

4. New self-aligning milking station makes the elution process simpler than ever. When the “Sight Glass” elution shield with evacuated vial is placed into the milking station, the needle is automatically centered over the evacuated vial. Press plunger down, turn slightly to lock into position, and elution proceeds automatically.

It’s the most advanced concept in technetium-99m generators.

This all-new, redesigned version of our Ultra-TechneKow series is carefully engineered into an attractive, pre-assembled, completely self-contained unit. This model is the culmination of seven years of experience making technetium-99m generators. The Ultra-TechneKow Generator is shipped each week complete with evacuated elution vials, needle pack with labels, molybdenum-99 and technetium-99m reference tables, needle guard for operator safety, convenient carrying handles, and package insert with complete information.

Contact your Mallinckrodt/Nuclear representative now for detailed information on this unique new product of Mallinckrodt/Nuclear research.

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READY-TO-INJECT:

- Indium-111 DTPA (CSF Studies) first vial $30, second vial $25
- Indium-111 Chloride (Bone Marrow) 1 mCi $20, 3 mCi $45
- Xenon-133 in the Gas Phase or Dissolved in Saline $1/mCi (minimum of 10 mCi)
Here are four ways to handle your in-vitro and in-vivo testing requirements.

**IN-VITRO**

**LOGICTM scintillation well counter**

LOGICTM is a simplified integrated spectrometer and well counter that’s easy to operate. Most important is the LOGICTM unique service commitment. When problems arise, a unique service program goes into action and your unit is back in operation fast. Every LOGIC is built with solid state and integrated circuitry to give greater reliability and less downtime.

The LOGICTM symptom describing manual allows you to pinpoint most service problems in minutes. A call to your technical representative confirms or corrects your diagnosis immediately. The correct plug-in circuit board or a replacement LOGICTM is air shipped to you the same day. You’re back in operation within 24 hours. In short, if you have trouble with a LOGICTM, we’ll repair or replace it with a service loaner in 24 hours or less.

**LKB/Wallac automatic gamma sample changer**

The LKB-Wallac 80000 automatic sample changer handles a large capacity of samples to free your skilled staff for other duties. It allows long uninterrupted automatic runs with either uniform or intermixed samples.

The sample conveyor operates as an endless belt giving you fast, safe and secure pneumatic handling of samples. There are two methods for positive sample identification before measurement, its position on the conveyor belt, and a binary coded cap. And, samples are changed in only 10 short seconds. Data readout is supplied in printed form or on punched tape. The Wallac automatic sample changers simple foolproof controls allow you to handle your needs efficiently and accurately.

**IN-VIVO**

**GRAPHIC™ Rectilinear scanner**

GRAPHIC™ operation is simple. The control panel is designed for a logical left to right set-up procedure. Start at the left with Power On and work your way in a logical sequence to the right of the panel to Scan On. GRAPHIC™ two-position film cassette allows you to scan 14" x 17" in either direction, across the chest or lengthwise along the body. GRAPHIC™ will accommodate a variety of large scan field requirements with uniform ease. And, GRAPHIC™ is built to last requiring a minimum of service attention. It’s so rugged that we warrant it for mobile operation. You have to be tough to work under these conditions.

**LOGICTM with uptake module**

By simply adding a medical stand and probe with collimator to either of two LOGICTM models, the 111 or 121, you’re ready for thyroid uptake studies. The LOGICTM modular concept provides add-on capabilities for you. Buy what you need when you need it. And, you still get the unique service commitment provided only by LOGICTM ... when problems arise, we'll repair or replace your instrument with a service loaner in 24 hours or less.

And, these instruments come from a full-line supplier who assures you of a continuing service commitment to train and assist your personnel in all their needs. It's our privilege to keep your Abbott instruments operational.
Mr. Shakespeare was obviously not thinking of our new ICON 380 Scintillation Camera when he wrote those words. But compared to other Cameras, the ICON 380 is a very deep well and a very wide church-door indeed. (We agree that wells and church-doors are hardly accurate units of measure, but we like the quotation). For those who insist on more exact terms, here is what the new ICON 380 offers:

- A useful field of view of 38 cm. (15 inches) diameter.
- Delay line arithmetic.
- Resolution better than 6 mm (¼”) as measured with 99mTc and bar phantom.
- Two Zones-of-Interest, each capable of independent size, shape and position adjustment.
- A unique “field of view” control which selects 38 cm., 28 cm., or 19 cm. circular concentric fields, rejecting all counts outside the selected field size, but maintaining the displayed image size.
- A unique control (IRIS POSITION) to shift the 19 cm. field from its normal central position to the outer edge of the crystal. The 19 cm. field may then be positioned in any of four quadrants. This is an invaluable aid to patient positioning, especially in brain imaging.
- 14,000 hole low-energy collimator.
- Dual channel ratemeter for display of Zones-of-Interest data.
- Seven-digit scaler for digital quantification and display.
- Both “fast” and variable persistence scope displays, with Polaroid camera.
- Push-button energy selection with over-riding manual control.
- 2500 hole medium-energy collimator.

OPTIONAL ACCESSORIES
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- Dual isotope option
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Presumably, these customers knew a better thing when they saw it. And, with every new Magna Scanner model, this “better thing” gets better and better.

Look at the newest Magna Scanners, for example, with their abundance of “better things.”

**Better Thing #1: Automated scan set-up.**
Computerization simplifies and speeds the entire setting-up procedure. Calibration is virtually instantaneous: the instrument is ready to go in a matter of seconds. (But the computer doesn’t limit flexibility.)

**Better Thing #2: Consistent scans, minimal repeats.**
Since scan parameters are automatically optimized by the computer, overall scan quality and consistency are superior and so interpretation is improved. Hence, the annoyance, time, and cost of retakes is minimized. Productivity goes up.

**Better Thing #3: Training simplified.**
With the task of calibration assigned to the computer, technologist training is simplified and speeded.

**Better Thing #4: Improved color printer.**
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Note well: all of these better things are shared by both the new Magna Scanners and the new Dual Magna Scanner. And the Dual Magna Scanner also offers: dual isotope and subtraction modes, and matched scans from the lower and upper probes.

So, if you now contemplate the purchase of a scanner, find out what else those 3000 (plus) hospitals already know—and like—about their Magna Scanners.

The easiest way to do this is to speak to a Magna Scanner user or your local Picker representative. They’re both easy to find. (Ask us also about our flexible lease plans.) Or write Picker, 595 Miner Road, Cleveland, Ohio 44143.
Now, thanks to the AVM-3 Automated Ventilation Module, radioxenon ventilation studies need no longer be technically difficult to accomplish.

The AVM-3 system provides a simple, yet reliable and flexible method of administering radioactive gas and controlling patient breathing during ventilation studies.

And, since the AVM-3 system is linked to your scintillation camera by remote control, it automatically initiates all scintiphoto exposures at precise predetermined intervals. As a result, the only functions of the operator are to select the desired study sequence, push the start button and then collect camera data.

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In addition, since the geometric factors for AVM-3 controlled ventilation studies can be made nearly identical to perfusion studies, easy and meaningful regional V/Q comparisons are permitted.

The AVM-3 system, with protective lead-shielding, is enclosed in a single case mounted on an overbed table for use on patients in either sitting or supine positions.

The Suprenant/Douglas AVM-3 Automated Ventilation Module. Just one of the ways in which we’re working to make your job a little easier.

For more detailed information, just write Omnimedical, 3711 Long Beach Boulevard, Long Beach, California 90807. Better yet, give us a call collect at (213) 595-1658.

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Recent Advances in Nuclear Medicine

A Course on "Recent Advances in Nuclear Medicine" will be held August 20 through August 24, 1973 at Colby College. Registration is open to attending radiation technologists and physicians. For the fifth consecutive year, the course will be directed by Dr. Henry N. Wagoner, Jr. This year, advances in the field of Nuclear Medicine, as well as in-depth discussions of basic principles will be presented. The course will cover areas of particular interest, in-vitro procedures, clinical imaging procedures, and newer aspects of instrumentation will be emphasized.

For further information contact
Dr. Robert Kony
Director of Special Programs
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Further information is available from Dr. T. H. Oddie, 30 Pinehurst Circle, Little Rock, Arkansas 72207. Area code 501-664-5000, ext. 544 (day), 225-8928 (night).

Volume 14, Number 3
XLVII
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<table>
<thead>
<tr>
<th>Model</th>
<th>56-265</th>
<th>56-262</th>
<th>56-263</th>
<th>56-260</th>
<th>56-261</th>
</tr>
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<tbody>
<tr>
<td>Capacity</td>
<td>1 cc</td>
<td>2½ cc</td>
<td>5 cc</td>
<td>10 cc</td>
<td>20 cc</td>
</tr>
<tr>
<td>Tuberculin Weight</td>
<td>3 oz.</td>
<td>4 oz.</td>
<td>5 oz.</td>
<td>9 oz.</td>
<td>13 oz.</td>
</tr>
<tr>
<td>Price</td>
<td>$40.00</td>
<td>$36.00</td>
<td>$37.00</td>
<td>$38.00</td>
<td>$42.00</td>
</tr>
</tbody>
</table>

* U.S. Patent 3,596,659

For more details, ask for Bulletin 452-B

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April 27–28, 1973

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Jacob Shapiro

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For further information, contact

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A view port lets you view the CRT directly, and a data card records patient information on the film. The Model 600 is also 10 times faster than the 35mm Nikon; 25 times faster than the Hasselblad. Check the comparison chart. Then check with us.

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P.O. Box 19164 • Houston, Texas 77024
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PRO-TEC® SYRINGE SHIELD*

PRACTICAL, EASY-TO-USE, UNBREAKABLE, SAFE, LIGHTWEIGHT REDUCES EXPOSURE FROM 99mTc BY A FACTOR OF 40

Twist lock and internally mounted stainless steel spring holds syringe firmly in place – prevents syringe shimmy or wobble.

Exposed end of syringe barrel to view withdrawal of blood.

07-003 Pro-Tec Syringe Shield 3cc — $29.50
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LEAD SHIELDED SYRINGE HOLDER

For syringes that contain radioisotopes. Accommodates syringes from 2cc to 20cc, or a syringe in a PRO-TEC shield. Entire unit is sheathed in steel.

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SPECIAL OFFER

Purchase any 3 Pro-Tec syringe shields and receive a syringe holder for Free.

* Pat. Applied For

ATOMLAB DIVISION
Atomic Products Corp.
Center Moriches, N.Y. 11934
10,000 counts per second. Impressive? Try 200,000.

Here's a scanning gamma camera that's designed around a minicomputer and a front end, to deliver 200,000 observed counts per second, at any energy, with no intrinsic components of spatial resolution.

After three years of clinical evaluation and thirty man-years of engineering development, our Baird-Atomic nuclear medical teams have eliminated the clinical constraints of 10,000 counts per second and 1.5 centimeters resolution.

You might call it a result of our decade of concerned commitment to the nuclear medical community.

We've produced a scanning gamma camera system that has been human engineered to reduce set-up time to the absolute minimum. It lets your technician give you clinical data in seconds . . . with the best spatial resolution available, at count rates virtually impossible today.

Through comprehensive software packages, the camera's minicomputer is programmed to provide direct and immediate count conversion for clinical interpretation. By letting this special programming do the tedious work of reducing count information into clinical formats, the computer will continue to allow the physician to practice his science at the highest level of nuclear medicine.

We're proud of our accomplishment. But be sure you get the complete picture, next month.
Pho/Gamma can do more because we've taken the three most important qualities that make a scintillation camera great—sensitivity, uniformity, and high resolution—and included an exclusive fourth:

**Clinical Versatility.**

Our Pho/Gamma System is available with a complete range of instruments to perform today's clinical procedures, and to facilitate the work of those who are making the future of medicine happen. Among these capability-expanders are: Various, specialized collimators which allow you to choose the optimum resolution and sensitivity you need for each study, because two or three collimators can not meet the exacting requirements of every clinical application.

The Tomocamera™ for imaging organs in 4 separate and variably selectable focal planes at one time. An Anatomical Marker which electronically provides direct transfer of anatomical landmarks to all film readouts and system accessories, and eliminates the need for cumbersome radioactive markers. A Clinical Data System (CDS-4096) to perform functional data manipulation and present the processed results as unambiguous, easily interpreted results for more accurate and faster interpretation. A Data-Store/Playback System which allows you to digitally capture the scintillation events, play the results back at your convenience, study, step-by-step, the nuclide distribution in the organ, and interpret the study with information that might have been missed on the initial scintiphoto study—and many more features, including the totally variable area of interest capability—all at the push of a button on the master console.

Pho/Gamma. Everything about it sounds like 2002 A.D., but it's here now for you to use. Contact your Nuclear-Chicago Sales Engineer, or write to us for further information.

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