

# What's New

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## Radiation Detectors

A new brochure describing the applications and benefits of cadmium telluride (CdTe) radiation detectors has been introduced by Radiation Monitoring Devices.

The detectors offer a unique combination of high sensitivity and small physical size for gamma ray detection. They are typically incorporated into simple instruments or into larger scale systems for both end user and OEM application. Typical nuclear medicine applications include: gamma cameras, heart probes, and cerebral blood flow imaging systems. More information is available upon request.—*Radiation Monitoring Devices, Inc., 44 Hunt St., Watertown, MA 02171.*

## Image Processing Computers

A new generation of nuclear medicine image processing computers designed to give maximum performance in solving medical diagnostic imaging problems has been introduced by Medical Data Systems.

The new system, called A<sup>2</sup>, utilizes improved technology that allows multiple studies to be processed simultaneously. It also provides a sharper display image to assist the nuclear medicine physician in diagnosis.—*Medical Data Systems Corp., 2311 Green Rd., Ann Arbor, MI 48105.*

## Calibration Setting Numbers for Over 200 Radionuclides

The recent availability of National Radioactivity Standard Sources, especially low energy gamma ray and x-ray emission dominant sources, makes it possible to refine the curve of sensitivity compared with photon energy for the Capintec radioisotope calibrator ionization chamber. As a result, Capintec announces the availability of a new calibration setting card.—*Capintec, Inc., 136 Summit Ave., Montvale, NJ 07645.*

## DVT Monitoring



Actus, Inc., announces a new instrument to be used in conjunction with intravenous injection of I-125 labeled human fibrinogen for detecting and monitoring deep vein thrombosis. The Actus I-Scan offers many features not found in currently available instruments. A large, eight-digit LED display indicates not only the automatically calculated percentage of precordial, but the venous leg position number as well.

Other LED's indicate counting and overflow modes.

A built-in, high speed, electric discharge printer, which utilizes nonfading aluminum oxide coated paper, is also featured. The printout is completely alphanumeric providing an annotated patient record that indicates mode, range, and actual venous position number in addition to data.—*Actus, Inc., Bldg. No. 2, Suite 7-10, Florence, KY 41042.*

## What's New in RIA

### RIA Teaching Programs

The *Principles of Radioimmunoassay* is designed to be a self-contained introductory course.

The basic steps in a typical RIA procedure are given. Then the major components—antigens, radiolabeled antigens, and antibodies—are detailed in terms of composition and test function. Formation of the complex, competitive binding,

and calibration with dose-response curves are clearly presented. The separation of bound-from-free phase is explained and illustrated in depth. Methods include absorption by charcoal, silica or talc, ion exchange, gel filtration, salting out, double antibody, and solid phase.

Finally, the measurement of radioactivity in a gamma counter and readout of results give the student a firm understanding of laboratory practice.

*Data Reduction and Quality Control in the RIA Laboratory* assumes some knowledge of RIA principles. After a review of terminology and the antigen-antibody reaction, QC parameters such as B<sub>0</sub>/T and NSB are described and related to the dose-response curve.

Next, various methods of data reduction are systematically classified and advantages and limitations of each are cited. Graphical procedures include plots of various direct and inverse functions of bound compared with concentration, and the more sophisticated functions such as logit and spline.

The key factors in quality control are introduced and explained thoroughly. These are sensitivity, precision, specificity, and accuracy. Techniques of monitoring equipment and instrument function are described and illustrated. The program concludes with a discussion of data analysis and record keeping.—*Savant, PO Box 3670, Fullerton, CA 92634.*

### **Ferritin I-125 RIA Kit**

New England Nuclear introduces a ferritin I-125 RIA kit designed to measure ferritin levels in serum or plasma. The kit provides a sensitive and accurate assay system over a wide range of values. It utilizes a solid phase, second-antibody separation, a feature which reduces the usual second-antibody incubation time and results in a firm, highly visible pellet. All necessary reagents are provided color-coded for technologists' convenience.—*New England Nuclear, 549 Albany St., Boston, MA 02118.*

### **TBG (RDA) with FTA**

The NMS TBG (RDA) test makes it possible to measure total serum binding capacity for thyroid hormones with the same speed and simplicity of the T<sub>3</sub>U tests. The TBG (RDA) employs a saturating dose of both labeled and unlabeled T<sub>4</sub> to effectively displace endogenously bound hormone on TBG, the principle TH binding protein in blood. Determination of the amount of tracer bound after separation from excess free tracer by adsorption of the free on charcoal results in a direct measurement of total TBG binding capacity.

The kit is intended to measure the total thyroxine binding capacity of the specific thyroxine binding interalpha globulin of serum. It is accomplished by adding a large excess of cold as well as hot (I-125 labeled) T<sub>4</sub> to a small amount of patient's serum and the mixture allowed to equilibrate. The free labeled T<sub>4</sub> is then separated

from the bound by charcoal-dextran slurry and the bound fraction is counted in a gamma counter.—*Nuclear Medical Systems, Inc., 1531 Monrovia Ave., Newport Beach, CA 92663.*

### **RIA Accessories**

The JMT Corp. announces several cost saving devices that are said to increase productivity of process steps in chemistry while improving the precision:

Model TMV-7 vortex-mixer is designed to handle racks of test tubes. The racks are compatible with available centrifuge rotors and are supplied with baskets for rotors;

UT-100 series racks are general purpose racks compatible with the TMV-7 and allow batch decanting. Any diameter test tube can be specified in this series. Height can be any value less than 120 mm per batch load;

and CS-100 series caddies for various commercially available RIA gamma counting trays are compatible with the TMV-7 vortex-mixer.—*JMT Corp., 270 Farmington Ave., Farmington, CT 06032.*

### **Bile Acids RIA**

Becton Dickinson Immunodiagnostics announces a new solid-phase RIA kit for conjugated bile acids that is said to provide a significant breakthrough in testing for liver function.

Because bile acid composition varies among liver diseases, as well as among patients with the same disease, this new assay is designed to measure the sum of the four predominant bile acids. The assay is easy-to-use and it features the convenience of solid phase, antibody-coated tubes that require only two pipetting steps and no centrifugation.—*Becton Dickinson Immunodiagnostics, Mountain View Ave., Orangeburg, NY 10962.*

### **PTH RIA**

A direct, sensitive, and convenient test for serum parathyroid hormone is available from Cambridge Nuclear Radiopharmaceutical Corp. The kit features direct assay (no patient-sample preparation or stripping prior to assay); highly specific C-terminal antibody; sensitivity of PTH; six prediluted standards and two controls; intra-assay CV of 5%; interassay CV of 10%; and double-antibody separation technique.—*Cambridge Nuclear Radiopharmacy Corp., 575 Middlesex Turnpike, Billerica, MA 01865.*

### **RIA for LH**

An RIA kit is available to measure luteinizing hormone in human serum. Assay precision and sensitivity are increased by preincubating patient serum with anti-LH serum for 1 hr at 37°C before adding the I-125 labeled LH. After overnight incubation, separation is achieved with a second-antibody reagent and the double-antibody complex is precipitated with ammonium sulfate.

Good performance throughout shelf-life (normally 4-7 weeks from date of shipment) is ensured by use of ion-exchange paper to partially purify tracer before each assay.—*Amersham Corp., 2636 S. Clearbrook Drive, Arlington Heights, IL 60005.*

### **Anti-native DNA Kit**

Meloy Laboratories has introduced a fluorescent diagnostic test kit to detect anti-nDNA antibody in serum or plasma. Positive ANA samples for AnDNA antibodies are now used in confirming systemic lupus erythematosus.

The kit features the same hydrophobic mask that is used with Meloy's ANA test kit, which eliminates cross-contamination of serum samples. Kit includes: eight slides, conjugate with counterstain, positive and negative controls, PBS, BSA concentrate (optional use), buffered glycerol, and complete instructions.—*Meloy Laboratories, 6715 Electronic Drive, Springfield, VA 22151.*