New Beckman J-6 Centrifuge.

It holds more volume and quiets down your lab.

The J-6 is an unusually quiet 6000-rpm refrigerated centrifuge, capable of handling a lot of sample very efficiently. With the JS-4.2 Rotor shown, you can spin up to six one-liter bottles or six blood bags—50% more than most floor model centrifuges. And our modular Multi-disc™ adapters, which stack to fit different tube lengths, hold a surprisingly large number of tubes.

There are five special J-6 rotors, including one for gamma counter racks; and the J-6 can use all of the fixed angle and swinging bucket rotors developed for the Beckman J-21 Centrifuges. The J-6 also shares the J-21 high-torque dc drive for rapid acceleration/deceleration and proven dependability.

For convenience, the lids of the large rotors can be stored on the inside of the J-6 door, and you'll really appreciate the ease with which the lids attach to the rotors (patent pending). The J-6 also has a valuable feature developed originally for our preparative ultracentrifuges, a rotor imbalance detector.

Before you choose a new refrigerated centrifuge, be sure to give the Beckman J-6 a look. And a listen.

Complete specifications and accessories are described in Data File SB-480. For your copy, write Beckman Instruments, Inc., Spinco Division, 1117 California Ave., Palo Alto, CA 94304.
Millipore ultrafiltration membranes and systems span the full spectrum of life science needs. Economical Pellicon® disc ultrafilters fit our own stirred cells and those of other manufacturers. The unique Immersible Molecular Separator quickly and conveniently processes small sample volumes. The sinuous flow High Volume Cassette System gently and efficiently ultrafilters large volumes.

Millipore products provide better solutions to difficult ultrafiltration problems. Applications include concentration and desalting of viruses with minimal loss of viability, protein fractionation and concentration up to 30% (w/v).

Professional sales representatives from our Laboratory Products Division are available from 14 U.S. cities* to assist you in selecting and implementing Millipore ultrafiltration systems. For further information on Millipore ultrafiltration products, write Millipore Corporation, Bedford, Massachusetts 01730 or call 800-225-1380 toll-free. (In Massachusetts, call 617-225-9200; in Canada, call 800-261-0961.)

*Los Angeles, San Francisco, Denver, Dallas, St. Louis, Madison, Chicago, Columbus, Atlanta, Washington D.C., Bethesda, New Brunswick, New York and Boston.
"When the heat's on, justify timesharing with paper."

Problem: Pressure. Temperature. Time. Until you define influential variables, your process is out of control.

Trouble is, timeshare costs can also be an unknown quantity. And analyzing pounds of printout can bog you down for days. After all, the challenge in hundreds of programs and models lies in rapidly defining how each variable influences the end result. In finding the optimum operational range.

Solution: Tektronix' desktop Graphics system comes straight to the point.

The 4051 speaks a graphically beefed-up BASIC... supported by software packages like statistics, that lets you explore analyses of variance and linear and non-linear regression techniques with unequalled simplicity and interactivity. In integrated circuit production. Chemical analysis. Mathematical modeling. You name it.

The 4051 puts you in command of up to 32K of problem-solving power, with 300K bytes of built-in mag tape storage and optional online capability. You proceed directly from inputting data to outputting time plots, histograms, even three-dimensional renderings—without waiting for a processor or wading through printout.
Rotate, heat, stress, lift, cool, tilt, analyze, change: 3.5 Å

The Zeiss EM-10 High-Resolution TEM: modify it in less than a minute.
In less than a minute you can interchange any specimen cartridge of the Zeiss EM-10 for any other.

Shown below are 8 of those cartridges. Nothing better illustrates the enormous versatility, capability, and ease-of-operation of this high-performance (1.23 Å lattice; 500,000X) instrument.

Even the Goniometer can be inserted in less than a minute. Without affecting the focal length, magnification, or resolution. Without restricting the microscope in any way for any other use.

Switch to no-tilt X-Ray Analysis. In less than a minute.
The EDX cartridge goes straight in, without tilting the specimen. You never lose sight of it. That's because any analyzer of your choice can be mounted at a 45° angle. And, like the Goniometer, it can be added without exchanging specimen stages or lenses. Without re-alignment. Without turning your EM-10 into an exclusively special-purpose instrument.

Our 40-page brochure gives all the details. But a demonstration is even better. Ask for one.

Nationwide service.

Primarily, the UA-5 is a sensitive and stable multi-wavelength detector for conventional and high performance LC. But if you're a life scientist, it's much more than that - it's the key part of an integrated system, able to perform many functions in your lab.

A low cost accessory turns the UA-5 into a dual beam gel scanner. Gels electrophoresed in quartz tubes can be UV-scanned during separation. After electrophoresis, they may be stained and scanned at visible wavelengths with sensitivity and resolution comparable to popular gel-scanning spectrophotometers.

Samples being electrophoresed in an ISCO density gradient column can be repetitively scanned during separation, a real advantage for isoelectric focusing. Drop-in cuvettes allow recording of many reactions and take the load off your spectrophotometer for many routine jobs.

Accessory fractionators for centrifuged density gradients easily resolve zones undetectable by other methods, and plot their exact locations. This scan shows 16 pea polyribosomes separated on a 5 ml gradient.

But the UA-5 is still the best all-around column monitor: it offers you a built-in recorder, simultaneous monitoring of two columns or any two of 13 available wavelengths, automatic scale expansion, and an exclusive Peak Separator which controls a fraction collector to put each peak in its own tube.

A versatile UA-5 costs no more than single-purpose L/C monitors. Send for the complete ISCO catalog and learn how this instrument can expand your lab.

This ISCO absorbance monitor is a versatile instrument for the life scientist.

Look what it will do for you.
SOLID PHASE SEPARATION
Precision antibody-coated tubes provide a rapid, convenient method to separate bound from free fractions. Simply decant, no centrifugation required. The Gamma-Coat system eliminates the potential pitfalls of charcoal as a separating agent.

CHOICE OF GENERATION pH
Color-coded buffers are provided for the generation of angiotensin I at either pH 6.0 or 7.4. Antibacterial agents, neomycin and sodium azide, are included in the buffers to retard bacterial growth during extended incubations.

MINIMAL DILUTION OF PLASMA SAMPLE
Only 0.1 ml of buffer is added to a 1.0 ml plasma sample for adjustment and maintenance of pH during generation. Since excessive dilution of renin and renin substrate are avoided, angiotensin I generation proceeds at a maximal rate.

The complications of interpreting data obtained from procedures using higher dilutions are avoided in the GammaCoat Plasma Renin Activity System.

3-HOUR ROOM TEMPERATURE RIA INCUBATION
Use of a 3-hour incubation provides a significantly shortened radioimmunoassay. Results, from start to finish, are available on the same working day.

UNIQUE PROTECTION OF GENERATED ANGIOTENSIN I
The GammaCoat Plasma Renin Activity Kit is the first commercial kit to employ the unique proteolytic enzyme inhibiting activity of phenylmethylsulfonyl fluoride (PMSF), which has been shown to be equally effective at both pH 6.0 and 7.4. A single pipetting of this preferred inhibitor, PMSF, is used to block the enzymatic conversion of angiotensin I to angiotensin II.

RENIN ACTIVITY CONTROL PLASMA
Variations in PRA have been observed upon repeated assay of frozen plasma after various periods of storage. Thus, the use of stored frozen plasma as a control in PRA determinations may lead to erroneous results. The Gamma-Coat system includes lyophilized renin activity controls at two levels. Routine use of these controls during generation, as well as radioimmunoassay, provides a reliable quality control index for the entire assay.

Please write for complete technical data or call, toll free 1-800-225-1241 (in Massachusetts call collect 617-492-2526).

Clinical Assays, Inc.
237 Binney Street, Cambridge, MA 02142

from Clinical Assays
Which Büchi/Brinkmann Rotary Evaporator should you get?

We make the choice hard, to make the extraction easy.

Büchi/Brinkmann offers rotary evaporators in a variety of models to facilitate all types of extractions.

There is a rotary evaporator for volumes as small as 5 ml, and Pilot Plant Models for volumes as large as 50 l. In between, there are models with variable speed electronic motors, sparkless induction and explosion-proof motors, quick-action jacks, stainless-steel heating baths, and a wide selection of flasks, condensers and accessories.

If the rotary evaporator you need is not shown here, you’ll find it in the new Büchi/Brinkmann brochure. For your copy, write: Büchi Division, Brinkmann Instruments, Cantiague Road, Westbury, N.Y. In Canada: 50 Galaxy Boulevard, Rexdale (Toronto), Ont.

Büchi/Brinkmann Rotavapors

SMALL VOLUME ROTAVAPOR M
For evaporation, organic synthesis, and analysis of volumes 5 to 100 ml. Rotates at 150 r.p.m. All glassware is threaded. Comes with 4 evaporating and 3 receiving flasks plus extra vacuum seals. Less than 2 ft. wide.

ROTAVAPOR EL
Specially designed distribution head with built-in duct permits applications not possible with other rotary evaporators. Also has electronically-controlled motor, quick-action jack and stainless-steel heating bath.

ROTAVAPOR R-10
Designed for large volume applications. Has 10 liter flasks, mechanical lift, electronic speed control (10 to 150 r.p.m.) and thermostatically-controlled heating bath. For batch or continuous-feed operations.

ROTAVAPOR RE
Has fully transistorized, electronically controlled high torque motor. Variable speed, 10 to 220 r.p.m. Continuous solvent feed. Equipped with safety deflector shield, quick-action jack and stainless-steel heating bath.

ROTAVAPOR R-50EX
Explosion-proof Pilot Plant Model for large volume extractions. 50 liter capacity flasks, high throughput of solvent. Variable speed motor. For batch or continuous-feed operations.
The new edition now features:
- Increased emphasis on seismology and less on paleomagnetism
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- Totally rewritten chapters on thermal problems, tectonics, and anelasticity—reflecting the latest developments
- Tides and tidal friction now separated from other rotational problems
- A vastly expanded treatment of density and composition
- Appendices with student problems, orbital dynamics, Roche limited for the moon, thermodynamic Grüneisen parameter

7th Edition

Beef Cattle

A.L. Neumann, University of Illinois

This classic describes the role of beef cattle enterprise in the efficient and profitable conversion of food/orage resources to wholesome, nutritious human feed.

Look for these important changes in the new edition:
- A chapter on Crossbreeding for Commercial Beef Production, authored by Dr. Larry Cundiff, Meat Animal Research Center, U.S. Dept. of Agriculture
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These new 125I RIA kits from NEN combine extreme sensitivity with speed and convenience. We developed a very sensitive first antibody and pre-reacted it with a second antibody to eliminate the intermediate incubation.

Femtomole sensitivity is easily achieved by acetylation with reagents provided in the kits.

There are other improvements, too. The iodinated marker is exceptionally stable and is stored refrigerated, not frozen. Pipetting is done at room temperature. And a tritium-labeled marker is included to monitor sample recovery.

The resulting system is highly sensitive, accurate, reproducible, and yields low blanks.

Everything else is included for running 200 tubes — buffer, standards, complete protocol — even a telephone number if we can be of technical assistance. Ask us to send you our technical brochure.

Radioactive L-Fucose has been found to be a useful precursor for studying the biosynthesis of glycoproteins, especially those of the cell surface.

\[
\begin{align*}
\text{Fucose, } L-[5,6-^3H] & : \quad \text{NET-516} \quad 40-60\text{Ci/mm mole} \\
\text{Fucose, } L-[6-^3H] & : \quad \text{NET-384} \quad 10-15\text{Ci/mm mole} \\
\text{Fucose, } L-[5-^3H] & : \quad \text{NET-296} \quad 1-5\text{Ci/mm mole} \\
\text{Fucose, } D-[5,6-^3H] & : \quad \text{NET-521} \quad 40-60\text{Ci/mm mole} \\
\text{Fucose, } L-[^1^4C] & : \quad \text{NET-600} \quad 40-55\text{mCi/mm mole} \\
\text{Guanosine diphosphate fucose, } [\text{fucose-}^1^4C(U)] & : \quad \text{NEC-640} \quad 140-200\text{mCi/mm mole}
\end{align*}
\]

An independent study has demonstrated that the Grumman ADP-30SD automatic dispenser/dilutor can efficiently process the chemistries of 18 major RIA kit manufacturers. Send for information and report to: Grumman Data Systems Corp., 45 Crossways, Woodbury, NY 11797, or call (516) 575-3888.

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