3–6. **Acoustical** Soc. of America, St. Louis, Mo. (W. Waterfall, American Inst. of Physics, 335 E. 45 St., New York 10017)

3–8. French Soc. of **Orthopedics and Traumatology**, 40th annual, Paris. (D. P. Masse, FSOT, Pavillon Ollier, Hôpital Cochin, 27 rue du Faubourg Saint-Jacques, Paris 14ᵉ)

3–12. Intergovernmental **Oceanographic** Commission, 4th session, Paris, France. (Office of Oceanography, UNESCO, Pl. de Fontenoy, Paris 7ᵉ)

4–5. **Operations Research** Soc. of America, Houston, Tex. (N. E. Miller III, Mt. Royal and Guilford Aves., Baltimore, Md. 21202)

4–5. **Rheumatology**, Czechoslovak-Polish meeting, Prague, Czechoslovakia. (F. Lenoch, Na Slupi 4, Prague 2)

4–6. American Soc. of **Cytology**, 13th annual scientific, New York, N.Y. (W. R. Lang, 1012 Walnut St., Philadelphia, Pa. 19107)

4–6. Society of **Economic Geologists**, Kansas City, Mo. (J. O. Kalliokoski, Dept. of Geology, Princeton Univ., Princeton, N.J. 98540)

4–6. **Geological** Soc. of America, Kansas City, Mo. (R. C. Becker, GSA, 231 E. 46 St., New York 10017)

4–6. National Assoc. of **Geology Teachers**, Kansas City, Mo. (M. B. Rosalsky, Dept. of Geology, City College of New York, New York 10031)

4–6. Southwestern **Medical** Assoc., 47th annual, El Paso, Tex. (S. Heinemann, 310 N. Stanton, El Paso)

4–6. **Paleontological** Soc., Kansas City, Mo. (R. L. Langenheim, Jr., Dept. of Geology, Univ. of Illinois, Urbana)

5–6. **Cancer of the Gastrointestinal Tract**, 10th annual clinical conf., Univ. of Texas M. D. Anderson Hospital and Tumor Clinic, Houston. (R. L. Clark, M. D. Anderson Hospital and Tumor Inst., Univ. of Texas, Houston 25)

5–6. Society for **Psychosomatic Research**, London, England. (C. J. Lucas, Student Health Centre, 17 Gordon St., London W.C.1)

5–7. American **Translators** Assoc., natl. conv., Washington, D.C. (Suite 2157, 630 Fifth Ave., New York 10020)

6–7. American Soc. for **Colposcopy and Colpomicroscopy**, annual, New York, N.Y. (D. Schildwaechter, 4219 Chester Ave., Philadelphia, Pa.)

6–7. International College of **Dentists**, Las Vegas, Nev. (H. O. Westerdahl, 4829 Minnetonka Blvd., Minneapolis, Minn. 55416)

6–20. International Federation of **Thermalism and Climatism**, Israel. (A. Schirmer, Fédération Intern. du Thermalisme et du Climatisme, Stadtbachstr. 12, Baden, Switzerland)

7. American College of **Dentists**, Las Vegas, Nev. (O. W. Brandhorst, 4236 Lindell Blvd., St. Louis, Mo.)

7–9. American **Science Film** Assoc., annual, Washington, D.C. (ASFA, 1319 F St., NW, Washington 20004)

7–10. **Automation**, British conf., Eastbourne, England. (Inst. of Production Engineers, 10 Chesterfield St., Mayfair, London, W.1)

7–11. American Soc. of **Mechanical Engineers**, winter annual mtg., Chicago, Ill. (ASME, 345 East 47 St., New York)

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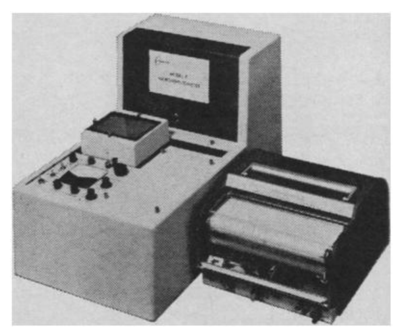

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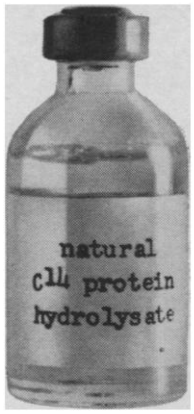

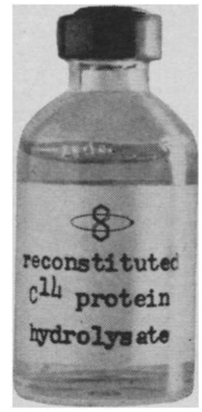

Is ersatz ever better?

(Or: is it excessively presumptuous to claim—as we do herein—that our new reconstituted C^{14} protein hydrolysate is always all ways better for protein labeling than a natural C^{14} protein hydrolysate?)

The problem with using a natural yeast or algal C^{14} protein hydrolysate for protein labeling is that you *start* your work with numerous and varied unneeded unknowns since the natural hydrolysate is relatively crude and may contain as much as 30-40% of non-amino acid material. And who needs such gratuitous complications?

The uncertainty that comes from undefined and unwanted contaminants can now be avoided by using our new reconstituted C^{14} protein hydrolysate which consists of C^{14} amino acids (and C^{14} amino acids *only*.) This product is exclusive with us. At least for the nonce.

Our work gets started (as *yours* shouldn't) with the typically unpredictable C^{14} yeast hydrolysate. But its amino acids are then separated and purified and the extraneous materials eliminated. At this point we have the individual amino acids, each with a *minimum* radiochemical purity of 99%. Thirteen of these are then recombined so as to mimic closely their proportions in the natural hydrolysate.

Two things can now be said about this reconstituted protein hydrolysate: (1) it has a 100% biosynthetically-prepared L-amino acid composition, and (2) all of the amino acids are uniformly C^{14} labeled. Or, more simply: this mixture is free of any non-amino acid material, hot or cold, and all of the amino acids are hot.

If you reached this point assuming that the extra processing, the extra purity, the extra convenience to you, is going to *cost* you extra—forget it. It won't. Rather surprisingly, 100 μc of this C^{14} reconstituted protein hydrolysate costs only \$35. 500 μc is \$170. 1 mc runs \$320. And 2 mc a mere \$600. (For a pleasant surprise, compare these prices with what you now pay for the crude natural product.) Also, please note that you get a Product Analysis Report with every shipment with the specific activity of each of the component amino acids. The other specifications for this product look like this:

	sp. act. mc/mmole	μc/mc of mix.		sp. act. mc/mmole	μc/mc of mix.
L-Ala-C^{14}	> 70	80	L-Phe-C^{14}	> 168	80
L-Arg-C^{14}	> 130	50	L-Pro-C^{14}	> 110	50
L-Asp-C^{14}	> 110	125	L-Ser-C^{14}	> 85	80
L-Glu-C^{14}	> 165	125	L-Thr-C^{14}	> 100	80
L-Ileu-C^{14}	> 110	100	L-Tyr-C^{14}	> 150	80
L-Leu-C^{14}	> 130	50	L-Val-C^{14}	> 100	50
L-Lys-C^{14}	> 180	50			

mixture of purified L-amino acids is in 0.01 *N* HCl/ 100 μc vials contain 100 μc/ml / all other vials contain 1 mc/ml

One interesting final point: we also have a mixture that is comparable in essentially every respect to the reconstituted protein hydrolysate shown above but with only these four C^{14} essential amino acids: arginine, leucine, lysine, valine, and with total activity divided equally among these. This too is new. We call it our C^{14} L-Amino Acid Protein Labeling Mixture (catalog no. 3122-06). It, and the reconstituted protein hydrolysate (catalog no. 3122-08), are immediately available to you from stock. Write, or call us collect at 914-359-2700. Ask for Maryann.

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Thermostated bath, model 7600, with proportional temperature regulation, maintains (it is claimed) the temperature of a 6-liter bath within 0.001°C for 2 days, when ambient temperature remains within 0.5°C and line voltage varies less than 2 percent; or within 0.004°C at ±5°C and ±5 percent (within 0.002°C for 8 hours). With an unobstructed cylindrical bath space 16.5 cm in diameter by 20 cm high, the bath permits precise measurements of electrolytic conductivity, electrical resistance, reaction rates, and other chemical and physical properties that vary with temperature. Comprises a well-insulated bath and a high-gain proportional controller. Bath unit holds a stainless-steel tank, shielded precision thermistor, thermostating liquid (usually water), and a rotor coupled magnetically to a stirring motor situated below the tank. Temperature gradients are kept low by heating the entire vertical surface of the tank and by careful design of baffles. The completely transistorized proportional controller, which uses the amplified signal from the thermistor in the bath to regulate power to the 25-watt heater winding, has a gain of 10^5. Although designed specifically for the bath, controller is available separately and may be used to regulate 500-watt heaters.—D.J.P. (LKB Instruments, Inc., Dept. S459, 4840 Rugby Ave., Washington, D.C. 20014)

Ultrasonic detector for gas chromatography, detects with high sensitivity the changes in molecular weight of the fractions of gas-chromatograph effluents. Has simplicity, stability, and low sensitivity to changes in flow. The transit time for a sound wave traveling a fixed distance from transmitting to receiving transducers is continuously monitored by comparing the electrical phase angle, at the receiving transducer, of a sample cell with the phase angle, at the receiving transducer, of a reference cell. Change in sound velocity in the sample cell results in a phase shift that can be measured with high precision. Velocity of sound is primarily a function of gas density, so that addition of any gas differing in molecular weight from the carrier gas will change the sound velocity. The phase shift associated with this change in velocity is monitored continuously. For example, the phase difference between 1 percent carbon dioxide in helium and pure helium at a sound frequency of 6 Mcy/sec and 10-mm length of sound path is 1200 degrees. With electronics capable of measuring 0.01 degree of phase, the lower limit for direct measurement of CO_2 in helium is 1 part in 10^6. The linear detector range for this analysis is slightly greater than 10^6. Because sound velocity is also a function of gas temperature, cell thermostating and equilibration of carrier-gas temperature are required. Temperature and gas composition being constant, the only variables that affect sensitivity of the detector (or reproducibility) are sound frequency and sound-path length. Sound frequency is known and constant to within 1 part in 10^7 per year. Sound-path length at constant temperature is expected to be constant (and can be calibrated) within 1 part in 10^4. The detector cell module is furnished as a completely enclosed, thermostated unit designed for dual, compensating-column operation; it includes two matched detection cells (reference and sample). Each cell incorporates two quartz transducers plated with chromium, with an outer coat of gold; transducer mounts, cell body, and inlet and outlet fittings are of stainless steel, with noble-metal electrical contacts. The module is permanently thermostated at one of three temperatures: 50°C, 200°C, 350°C. Fully solid-state electronics in separate module, thermostated at 35°C for stability; module provides thorough radio-frequency (rf) shielding for two crystal-controlled oscillators, a driver amplifier, two low-level rf amplifiers, two mixers, a phasemeter, and a tapped delay lane. It also includes two regulated power supplies, two temperature controllers, circuitry for output-signal attenuation and filtering, and both phase and recorder zero adjustment. Output: 0 to 10 volts dc. Response time for full scale (360-degree phase): less than 10 msec. Capable of measuring phase differences, between the outputs of the two detector cells, as small as 0.002 degrees. Front-panel controls include a meter for monitoring phase independently of the recorder, a meter function switch for checking signal levels, two-stage zero control, output attenuator, and output zero control. Output attenuator allows full-scale recorder deflection over the range 0.3 to 360 degrees. For phase changes greater than 360 degrees, the recorder trace automatically returns to the baseline at each 360-degree interval. Designed for 19-inch (48-cm) relay rack mounting, it occupies 0.5 ft^3 (0.014 m^3).—D.J.P. (MicroTek Instruments, Inc., Dept. S454, 550 Oak Villa Blvd., Baton Rouge, La.)

Automatic cool-down controller for chromatography, model 5085, automatically returns the column to an initial temperature after each run. By controlling the column oven dampers and heater during cool-down, the module eliminates time-consuming manual manipulation of temperature; the operator need only inject sample and start the programmed run. Front-

The material in this section is prepared by Denis J. Prager (D.J.P.), Laboratory of Technical Development, National Heart Institute, Bethesda 14, Md. (medical electronics and biomedical laboratory equipment).

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Neither *Science* nor the writer assumes responsibility for the accuracy of the information.

panel controls include: 0 to 180-minute programming timer; 0 to 30-minute cool-down timer; pilot lights marked "programming," "recovery," "ready"; automatic-manual mode-selector switch. Time requirements for temperature programming and cool-down, determined experimentally, are set on the timer dials; the selector switch is set to "automatic." Temperature is programmed by selecting the initial and final temperatures and rate of rise. The sample is then injected and program action is initiated. At the end of the programmed run, a relay activates a solenoid valve that opens the intake and exhaust dampers of the column oven and shuts-off oven heat. The cool-down timer determines the length of time that the dampers are to remain open; it is set to allow the oven temperature to fall 10° to 15°C below the initial temperature to compensate for residual heat from the oven and for insulation. After the dampers close, a preset internal timer provides a period for dissipation of this residual heat, permitting the oven and circulating air to reach equilibrium. A second internal preset timer then turns-on the oven heat for a short isothermal soak at the initial temperature. The "ready" light indicates that the column is at equilibrium at the initial temperature and ready for the next run. —D.J.P. (Barber-Colman Co., Dept. S460, Rockford, Illinois)

Remote reference junction, expedites *p*H measurements and titrations at high temperatures or with incompatible solutions. Junction is filled with a compatible electrolyte and used to make an electrical salt bridge to a reservoir containing the calomel electrode. Electrical contact between sample solution and electrolyte in the reference junction and reservoir is made through a porous plug of sintered ceramic, sealed into the glass at the tip of the tube. Above the plug is a fitting for 0.25-inch (6.25-mm) bore Tygon tubing. Any suitable container serves as the reservoir in which the reference electrode is immersed. Junction can be used in situations in which chloride ions or mercurous ions in a standard calomel reference electrode react with the solution being measured or titrated, introducing unknown errors. If the temperature of the sample solution is higher than the safe limit of the reference electrode, the new junction serves to keep the electrode within its most reliable working range; if the temperature of the sample changes while the *p*H is being measured, the time normally spent waiting for the elements of the reference electrode to come to equilibrium is saved. (The electrolyte reservoir can be thermostated if necessary.) For setups being used to monitor the *p*H of a system that would be likely to foul or clog the reference electrode, the electrode can be kept safely in a clean electrolyte. (Ability to vary the head of electrolyte in the tube of the reference junction makes it easy to keep the liquid junction in the sample free from clogging.) List: $7.50.—D.J.P. (Fisher Scientific, Dept. S457, 413 Fisher Building, Pittsburgh, Pa. 15219)

Specific gravities of liquids within the range 0.5500 to 3.0500 are made photoelectrically by the Speegrav. Essentially an electronic balance equipped with a microammeter, it provides direct readings within 0.0005 sp. gr.; by estimation, within 0.0001 sp. gr. In principle, the instrument is an accurate electronic balance using a plummet immersed in the test liquid. The plummet is suspended by a fine wire and stirrup from a beam with a slit to allow light to pass from source to a photocell. As the plummet seeks different levels in fluids of varying densities, the beam and slit move and increase or decrease passage of light to the photocell; cell output is then measured by the meter. Ranges are changed by addition or removal of precision weights, which increase or decrease weight on the beam. Effective length of the meter scale is thus spread to about 6 m. Within any one range, the entire meter scale indicates only small differences in specific gravity (for example, 0.600 to 0.650), so that precision is high with a relatively short, fixed meter scale. Readings are repeatable within 0.00025 sp. gr. on the 0-to-50-μa taut-band meter. Solid-state circuitry throughout. A-c supply regulated; fluctuations in line voltage to 20 percent do not affect accuracy. Meter scale reads directly in sp. gr. units; other scale plates, such as the Alcoholmeter, Baumé, Brix, and Fatty Oil scales, available on special order. Weights are supplied in sets with the instrument or as optional accessories. Operating manual, with appropriate reference tables, is standard equipment. —D.J.P. (Aloe Scientific, Div. of Brunswick, Dept. S449, 1831 Olive St., St. Louis, Mo. 63103)

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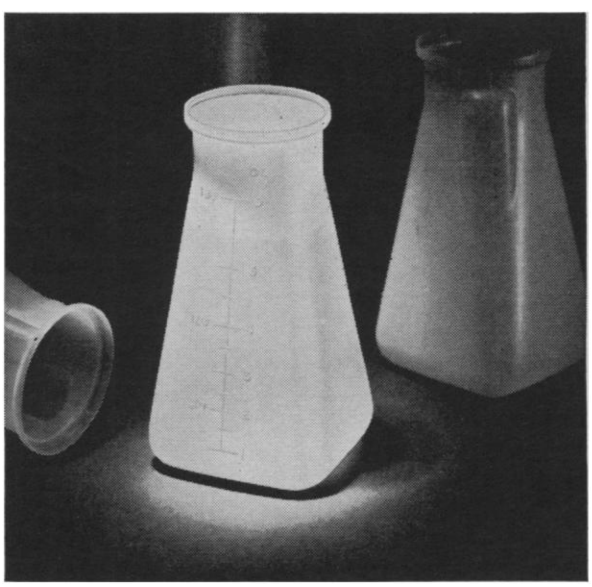

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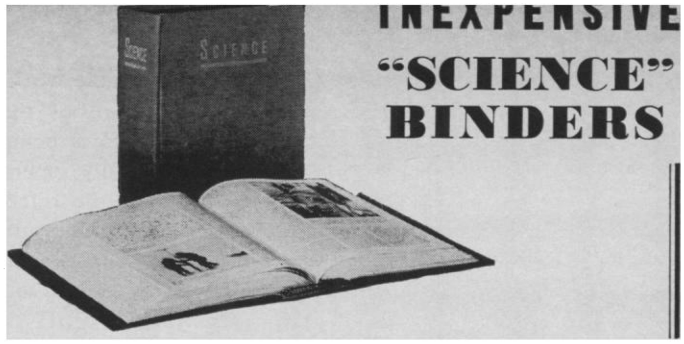

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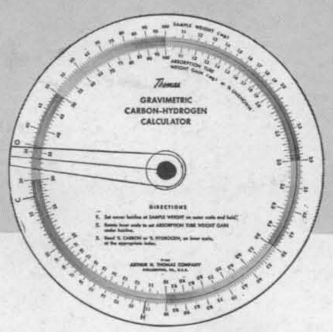

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