NEW, AUTOMATED MICROPROBE!

Cambridge Microscan 9

Microscan is a Registered Trade Mar

COMPUTER CONTROLLED SCANNING ELECTRON PROBI X-RAY MICROANALYSER STREAMLINES ROUTINE SAMI IN THE HIGH-THROUGHPUT ANALYTICAL LABORATORY

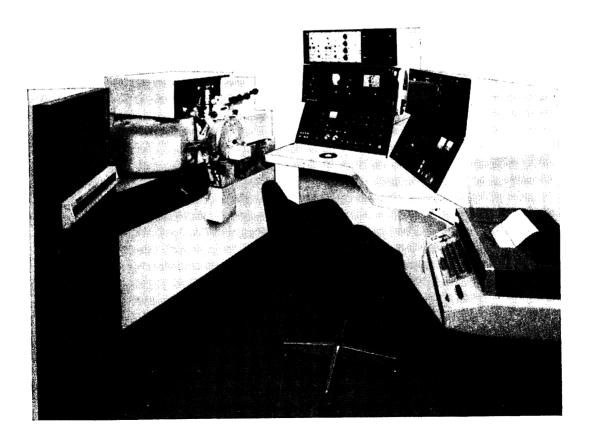
40 specimen positions 27 spectrometer settings 27 reference standards automatically utilised by computer control Sum up the advantages.

Microscan 9 gives you classic standards of accuracy and repeatability — better even than those that have made Cambridge microprobes famous. Computer control gives built-in storage and instant automatic readout of your sampling routines, with all that that means in increased volume handling and reduced operator involvement, Microscan 9 even runs your repetitive routines overnight. State-of-the-art visual imaging adds an entirely new sophistication in examining what you're measuring — i.e. producing and analysing x-ray distribution pictures of your samples — a significant expansion of capability.

If all this adds up to something worthwhile in your case, then call us straight away for full details.



Cambridge Scientific Instruments Limited
Cambridge England CB1 3QH Telephone: (0223) 42021 Telex: 81162





More Sigma Exclusives-

ISOPRENOID ALCOHOLS

With continued expansion of Sigma's LIPID LABORATORY, we are pleased to announce production of several "Firsts" in what we expect will be a growing series of Isoprenoid Alcohols, Ubiquinones and Fatty Acid derivatives. Please send us your inquiries.

Interest in DOLICHOL and other Isoprenoid Alcohols has increased rapidly with the recent discovery of lipid intermediates in sugar transfer reactions. Some Isoprenoid Alcohols have been shown to form sugar phosphates which subsequently act as donors for Polysaccharide and Glycoprotein formation.1,2

Our first preparation of DOLICHOL is believed to be a family with C₈₀-C₁₀₅ structure.³ Additional Isoprenoid Alcohols and their derivatives will be prepared from Bovine Heart, Yeast and various plant leaves.

> Ref: 1. Behrens and Leloir, Proc. Natl. Acad. Sci. (USA) 66:85, (1970).

2. Strominger et al, J. Biol. Chem. 245:3697, (1970).

3. Burgos et al, Biochem. J., 88:470 (1963)

DOLICHOL from Porcine Liver

D 4511 - Grade I: Approximately 98%

10 mg/ml in Carbon Tetrachloride. 5 mg - £ 25.88 25 mg. - £ 86.25

10 mg.- £ 43.13 50 mg. - £ 143.76

100 mg. - £ 239.60

Grade II: Approximately 90% D 5760 -

10 mg/ml in Carbon Tetrachloride. 25 mg. – £ 60.38 5 mg. — £ 18.11 £ 30.19 50 mg. – £ 100.63 100 mg. – £167.72 10 mg. - £ 30.19

DOLICHOL MONOPHOSPHATE

(Dolichyl Monophosphate)

Purity not yet firmly established; bound Phosphorous assays indicate approximately 50% purity. Prepared by the chemical phosphorylation of DOLICHOL. Active in the membrane system of Warren, C., JBC 249:6316 (1974). D 5885—Grade II: 2 mg/ml in Chloroform-Methanol (2:1 v/v). 1 ma. — £ 11.98 5 mg. - £ 52.71

DOLICHOL ACETATE

(Dolichyl Acetate)

Approx. 98%. Prepared by chemical acetylation of DOLICHOL. D 6260 - 5 mg/ml in Chloroform-Methanol (2:1 v/v).

2 mg. - £ 15.33)

5 mg. — £ 31.15

10 mg. - £ 52.23

We also offer:

C 9504 - COENZYME Q6

(Ubiquinoine-30; 2,3-Dimethoxy-5-Methyl-6-(all trans) Farnesyl-Farnesyl-1,4-Benzoquinone)

From S.cerevisiae, Sealed ampules

10 mg. — £ 35.94 2 mg. — £ 11.98

50 mg. - £ 119.80

C 9629 - COENZYME Q10

(Ubiquinone - 50)

From Bovine Heart, Sealed ampules.

5 mg. - £ 4.31 25 mg. - £ 13.90 50 mg. — £ 24.92 10 mg. - £ 7.19

100 mg. - £ 46.00

Completion of the following Isoprenoids & Ubiquinones is expected soon!

F 6378 FARNESYL PHOSPHATE C 1763 COENZYME Q₇

F 6503 FICAPRENOL PHOSPHATE C 1888 COENZYME Q8

F 8754 SOLANESOL C 2013 COENZYME Q,

C 1513 CASTAPRENOL, From Aesculus hippocastanum F 6253 FICAPRENOL, From Figure elastica 9/75

ORDER DIRECT

TELEPHONE COLLECT



from ANYWHERE in Great Britain or Europe, 01-549-3171 Night and Holidays N. A. Virgo 01-942-0883

---Most orders will be shipped within hours CABLE: SIGMALOND, London, England

It's a Pleasure Doing Business With Sigma!



CHEMICAL COMPANY LTD. Norbiton Station Yard, Kingston-upon-Thames, Surrey, KT2 7BH, England

MANUFACTURERS OF THE FINEST BIOCHEMICALS AVAILABLE

SIGMA Chemical Co.—P.O. Box 14508—St. Louis, Missouri, 63178 U.S.A. Telephone: 314-771-5750 (Reverse Charges)

Also distributed through:
SIGMA Chemie GmbH MUNCHEN • D-8014-Neubiberg, Isarstrasse 14, W. Germany Telephone: 089/60 70 03 (Reverse Charges)

JOHN WILEY & SONS LTD



INTERNATIONAL PUBLISHERS

TECHNIQUES OF BIOCHEMICAL AND BIOPHYSICAL MORPHOLOGY, Vols. 1 & 2,

edited by D. Glick, Stanford University Medical School, California, and R.M. Rosenbaum, Albert Einstein College of Medicine.

A new series of annual volumes to keep scientists informed of the latest developments in instrumentation, methodology, and techniques in this field.

292 pages (Vol. 1) 548 pages (Vol. 2) November 1972 March 1975

£12.20

HORMONE CHEMISTRY: Vol. 1: Protein. Polypeptide & Peptide Hormones,

by W.R. Butt, Director, Dept. and Laboratory of Clinical Endocrinology, Birmingham and Midland Hospital for

This first of a two-volume work gives a general picture and detailed information on an unusually wide range of hormones. It deals with those related to proteins and peptides which are the controlling agents for many functions including reproduction, growth and metabolism.

286 pages September 1975 £12.50

Published by Ellis Horwood Ltd., and distributed by John Wiley and Sons Ltd.

£17.05

ENZYME KINETICS: Behavior and Analysis of Rapid Equilibrium and Steady State Enzyme Systems,

by Irwin H. Segal University of California

overs enzyme kinetics from its most elementary aspects to the modern, sophisticated subjects of steady-state kinetics and isotope exchange. Provides basic understanding of the behavior of enzyme systems and of the diagnostic tools used to characterize enzymes and to determine kinetic mechanisms.

July 1975

A STEP-BY-STEP APPROACH TO ELEMENTARY ORGANIC SYNTHESIS,

by M. Paul Serve, Associate Professor of Chemistry, Wright State University, Dayton, Ohio.

This book was written to supplement a full three-quarter or two-semester course in organic chemistry for chemistry majors, engineers and pre-professional students, It supplements the text, particularly Organic Chemistry by Morrison and Boyd, 3rd edition.

October 1975 326 pages £5.55

Published by Ann Arbor Science Publishers Inc., and distributed by John Wiley and Sons Ltd.

FUNCTIONAL CHEMISTRY OF THE BRAIN,

by Adrian Dunn, University of Florida College of Medicine and Stephen C. Bondy, University of Colorado Medical Centre

Reviews the current status of brain biochemistry - biochemical aspects of brain function and how biochemistry can help answer questions about the brain. (Monographs in Modern Neurobiology)

278 pages February 1975 £9.35
Published by Spectrum Publications Inc., and distributed by John Wiley and Sons Ltd.

TOTAL PARENTERAL NUTRITION: Premises and Promises,

edited by H. Ghadmi, M.D.

Focuses on applied biochemistry and pharmacology of individual nutritional components used in total parenteral alimentation; then deals with clinical experience. (Clinical Pediatrices: Maternal and Child Health)

April 1975 £15.10

SOLID-PHASE SYNTHESIS,

edited by Erich C. Blossey, Rollins College, Florida, and Douglas C. Neckers, Bowling Green State University,

Papers deal with recent applications of solid phase synthesis in biochemistry and in organic chemistry and demonstrates the usefulness of attaching reactive residues to insoluble polymer supports in a wide variety of problems.

378 pages June 1975 £15.10

Published by Dowden, Hutchinson and Ross Inc., and distributed by John Wiley and Sons Ltd.

JOHN WILEY & SONS LTD

Baffins Lane · Chichester · Sussex PO19 1UD · **ENGLAND**

ADVERTISING^{*} RATES

Cover and
Special Positions £90
Full Page £40
Ouarter Page £25

Agency Commission 10% Publisher's Discount 10%

All communications regarding advertising matters should be addressed to:

Advertisement Section, Biochemical Society, 7 Warwick Court, London WC1R 5DP

Telephone: 01-242 1076 (4 lines)

THE BIOCHEMICAL JOURNAL____

The Biochemical Journal

Cumulative Indices

Save Research Time

Busy researchers and authors find that these multi-volume indices are invaluable. Where time is money the cost is recovered quickly. Produced as a service to subscribers and priced accordingly.

Volumes	£p	U.S.\$
21-30	0.75	2.50
31-40	2.00	5.50
41–65	2·7 5	7.50
66–90	3.25	9.00
91–115	5.25	13.00
116–130	5.50	15.00

All prices include postage (by surface mail to overseas)

Available from:

The Biochemical Society (Publications)

PO BOX 32 Commerce Way Whitehall Industrial Estate Colchester CO2 8HP Essex

CLINICAL SCIENCE AND MOLECULAR MEDICINE

Formerly Clinical Science

EDITORIAL BOARD

For the Biochemical Society

J. A. OWEN, Deputy Chairman

B. H. BILLING, A. M. BRECKENRIDGE, C. N. HALES, T. D. R. HOCKADAY, R. G. HUNTSMAN, G. H. LATHE, J. LIDDELL, I. MACINTYRE, K. L. MANCHESTER, R. W. E. WATTS

For the Medical Research Society

R. D. COHEN, Chairman

G. Cumming, D. C. Flenley, N. F. Jones, D. M. Matthews, M. E. M. Noble, D. K. Peters, A. Polak, J. I. S. Robertson, B. Robinson, J. D. M. Slater

Vol. 49, No. 4

CONTENTS

OCTOBER 1975

- Paradoxical diuresis after vasopressin administration to patients with neurohypophyseal diabetes insipidus treated with chlorpropamide, carbamazepine or clofibrate. By A. E. Meinders, A. M. van Leeuwen, J. G. G. Borst and V. Cejka
- Plasma catecholamines, plasma renin activity and plasma aldosterone in tetraplegic man, horizontal and tilted. By C. J. Mathias, N. J. Christensen, J. L. Corbett, H. L. Frankel, T. J. Goodwin and W. S. Peart
- Increased plasma calcitonin in early acute renal failure. By R. Ardaillou, M. Beaufils, Marie-Paul Nivez, R. Isaac, C. Mayuad and J.-D. Sraer
- Evidence for active transport of tripeptides by hamster jejunum in vitro. By JILL M. Addison, D. Burston, J. W. Payne, S. Wilkinson and D. M. Matthews
- A common mechanism for transport of di- and tri-peptides by hamster jejunum in vitro. By JILL M. ADDISON, D. BURSTON, JUDITH A. DALRYMPLE, D. M. MATTHEWS, J. W. PAYNE, M. H. SLEISENGER and S. WILKINSON
- Body weight and body water in chronic cor pulmonale. By R. H. A. CAMPBELL, HILARY L. BRAND, J. R. Cox and P. Howard
- Cardiac effects of lead in drinking water of rats. By M. R. Moore, P. A. Meredith, A. Goldberg, K. E. Carr, P. G. Toner and T. D. V. Lawrie
- Effect of phenylalanine and its metabolites on the metabolism of leucocytes and lymphocytes. By D. M. Bradley and R. F. Mahler
- Effect of intravenous frusemide on plasma renin concentration: suppression of response in hypertension. By P. L. Padfield, M. E. M. Allison, J. J. Brown, A. F. Lever, R. G. Luke, C. C. Robertson, J. I. S. Robertson and M. Tree
- Defective membrane systems in dystrophic skeletal muscle of the UM-X7.1 strain of genetically myopathic hamster. By N. S. Dhalla, A. Singh, S. L. Lee, M. B. Anand, A. M. Bernatsky and G. Jasmin

Subscription: £2.00 (\$7.50) per part; £20.00 (\$70.00) per year.

Orders may be placed with your bookseller, or sent direct to the publishers.

BLACKWELL SCIENTIFIC PUBLICATIONS LTD

5 ALFRED STREET, OXFORD OX1 4HB, ENGLAND



Boehringer Mannheim

Benefits /

foryfour

- Confidence through Quality Control probably the most exacting in the world
- Service first class, unequalled
- Economy cost competitive especially when related to performance
- Innovation constant developments through progressive research

THIS YEAR'S HIGH QUALITY-LAST YEAR'S PRICES

NICOTINAM	IDE COENZYM Pack Sizes	ES Cat. No.	Pack Sizes	Cat. No.
β-NAD	Grade I	15298	Grade II	15300
	250mg 1g 5g		250mg 1g 5g	
β-NADH	Grade I	15297	Grade II	15142
	100mg 500mg		100mg 500mg 1g	
β-NADPH	Grade I	15502	Grade II	15501
	25mg 100mg		50mg 100mg 500mg	
β-NADP	Grade I	15600		
	50mg 100mg	500mg 1g		

For full details please contact:





The Boehringer Corporation (London) Ltd., Bilton House, Uxbridge Road, London W5 2TZ. Telephone: 01-679 6944 or in countries other than Gt. Britain your local Boehringer Mannheim Office.