Active ‘guides’ on Metabolic Routes

The radioactive tracer method is now indispensable for the study of metabolic processes. To scientists engaged in such researches we can supply several hundred “labelled” compounds from stock or at short notice, of which the following are examples (G = generally labelled):

- Cholesterol-4-C14
- Maltose-C14 (G)
- DL-Cystine-S35
- L-Arginine-C14 (G)
- Fumaric acid-1-C14
- D-Glucose-1-C14 (or, G)
- Sodium acetate-1-C14 (or, 2)
- Sodium DL-lactate-1-C14 (or, 2)
- DL-Methionine-S35
- L-Valine-C14 (G)
- Guanine-8-C14
- D-Mannose-C14 (G)
- Histamine (2-ring-C14)
- Sorbitol-C14 (G)
- Taurine-S35
- Glycerol-1-C14
- DL-Serine-3-C14
- D-Mannose-1-C14
- Sodium pyruvate-1-C14
- DL-Valine-1-C14
- Hypoxanthine-8-C14
- Linoleic acid-1-C14
- DL-Tryptophane [indolyl (alanine-5-C14)]
- DL-5 (3, 4-Dihydroxyphenyl) alanine-2-C14
- Glycerol tri(stearate-2-C14)

Send for our comprehensive list.

THE RADIOCHEMICAL CENTRE
AMERSHAM · BUCKINGHAMSHIRE · ENGLAND

Biochem. Jnl. 66, 2 (i)
SYMPOSIA OF THE BIOCHEMICAL SOCIETY

The Structure of Nucleic Acids & their Role in Protein Synthesis

The fourteenth symposium of the Biochemical Society was organised to survey current research on the chemical composition and the structure of nucleic acids and to discuss the role played by them in the synthesis of proteins in organisms of varying degrees of complexity. Dr R. Markham reviews the recent work on the chemical composition of ribonucleic acid and deoxyribonucleic acid, including his own recent contributions. Dr M. H. F. Wilkins discusses the reliance to be placed upon modern X-ray data and the most likely spiral configurations of the acids. The metabolic aspects are treated by Dr T. S. Work and his colleagues at the National Institute for Medical Research, who deal with the mammal; by Dr Gale, who presents his latest research on incorporation of amino acids into bacterial protein and its mediation by nucleotides and other factors; and by Dr Burton, who discusses the role of nucleic acids in the inheritance mechanisms of bacteriophage.

Previously published:

1. The Relation of Optical Form to Biological Activity in the Amino-Acid Series. 5s. net
2. The Biochemical Reactions of Chemical Warfare Agents. Out of print
3. Partition Chromatography. 6s. net
5. Biological Oxidation of Aromatic Rings. 8s. net
6. Biochemistry of Fish. 12s. net
7. Biochemistry of Fertilization and the Gametes. 9s. 6d. net
8. Metabolism and Function in Nervous Tissue. 12s. 6d. net
9. Lipid Metabolism. 13s. net
10. Immunochemistry. 12s. 6d. net
11. Biological Transformations of Starch and Cellulose. 10s. 6d. net
12. Chemical Pathology of Animal Pigments. 12s. 6d. net
13. The Biochemistry of Vitamin B₁₂. 20s. net

In Paper Covers, 13s. 6d. net

CAMBRIDGE UNIVERSITY PRESS
BENTLEY HOUSE, 200 EUSTON ROAD, LONDON, N.W. 1
E.K. BOWMAN LTD.
Established 1889
32 & 34 HOLMES ROAD, KENTISH TOWN
LONDON, N.W. 5
Telephone: Gulliver 1653 & 1984

★

SPECIALISTS IN
ANIMAL HOUSE EQUIPMENT
CAGES & RACKING
NEW AND LARGER WORKS NOW OPEN

Lacceral, Lactalbumin, Lactalbumin,
Lactic acid l, Lactic acid allyl est
drognase, Lactylase, Laetide, La
cryst., Lactoperoxidase, Latoenin, L
Lanadizin, Lanadine, Lanatoside
terol, Lanthanum, Lanthanum acetate,
ferricyanide, Lanthanum formate, Lant
Lanthanum, Lante, Lauric
ester, Lauryl chloride, Laur
Laurovichlorine, Lauroxide, Laurlvnoro
late, p-Lauryl alcohol, Lauryl butyra
Lauryl carboxylic acid, Laurlow, Minini
cite, ter, Laurmyristate, Laurpalmitate,
laurylidodecyl ether, L
uvtalate, Lead potassium iodide, Le
Lead chloride, Lead fluoride, Lea
tetrachloro, Tetrachloro, Lea
chlolester, Lea, Lepidin, Lepidina,
Lepidine, Leucine aminopeptidase, Le
thionine, Leucoriboflavine, Leucoros
Levogluco, Levulinic acid, Levulin
benzyl ether, Lignin, Lignin, Li
lineolic acid, Linol, Linol
Lipoca, lipitrol, Lithium, Lithium
Lithium chloride, Lithium chloride
bromide, Lithium carbonate, Lithiu

NOW AVAILABLE
95%
NITROGEN 15 ISOTOPE

STANDARD FORMS:
Nitric acid, nitrates,
ammonium salts, cyanides,
potassium phthalimide,
nitric oxide, nitrogen dioxide,
nitrogen

Write for Technical
Bulletin 256C
ISOMET CORPORATION
P.O. Box 34, Palisades Park
New Jersey, U.S.A.

DELTA CHEMICAL WORKS, Inc.
23 West 60th St., New York 23, N. Y., U.S.A.
Cable: DELTACHEM
LONG WORKING DISTANCE OBJECTIVES

Cooke

8 m.m. 20X 0-50 N.A. and 4 m.m. 40X 0-57 N.A.

Sugar Phosphates

The following chemicals of English manufacture and to the specifications shown are now available:

α-D(−)-Glucose-1-phosphoric acid, dipotassium salt dihydrate

\[
\text{C}_{6}\text{H}_{12}\text{O}_{7}\cdot\text{K}_{2}\text{O} \cdot \text{H}_{2}\text{O} \quad \text{Mol. wt. 372-35}
\]

Assay (ex P and K): Not less than 95.0% Inorganic phosphate: Not more than 0.1% (as P) Loss on drying: Not more than 11.0% at 105° C. in vacuo 

\[ [\alpha]_{D}^{20} = 76° \text{ to } 80° \text{ (c, 5 in water)} \]

1 g—12s. 6d.

D(−)-Glucose-6-phosphoric acid, barium salt heptahydrate

\[
\text{C}_{6}\text{H}_{12}\text{O}_{7}\cdot\text{Ba} \cdot \text{H}_{2}\text{O} \quad \text{Mol. wt. 521-60}
\]

Assay (ex P and Ba): Not less than 95.0% Inorganic phosphate: Not more than 0.1% (as P) Loss on drying: Not more than 25.5% at 105° C. in vacuo

\[ [\alpha]_{D}^{20} = 20° \text{ to } 22° \text{ (c, 5 in N/1 HCl)} \]

0.1 g—8s. 6d. 1 g—50s. 0d.

Also available:

D(+)-Fructose-1:6-diphosphoric acid, dibarium salt

1 g—6s. 0d. 5 g—22s. 9d

D(−)-Fructose-6-phosphoric acid, barium salt

0.1 g—5s. 0d. 1 g—30s. 0d.

Enquiries for larger quantities are welcomed

THE BRITISH DRUG HOUSES LTD.
B.D.H. LABORATORY CHEMICALS GROUP
POOLE DORSET
SP/5601

Routine Tests...

...or Research Projects

There is an MSE Centrifuge Model, with or without refrigeration, exactly suited to the application.

Ask for MSE Publication No. 888/B

MEASURING AND SCIENTIFIC EQUIPMENT LTD.
Spenser Street, London, S.W. 1
Telephone: VICtoria 5426
Abnormal oxygen saturation of blood is one of the most important indications of cardio-respiratory disturbances. Hitherto, measurements have been possible only by slow and intricate methods.

With the Brinkman Haemo-reflector, in conjunction with the Kipp Light Spot Galvanometer, measurements may now be made within 3 minutes, including preparation of samples. Based on the reflection principle described by Prof. R. Brinkman, the Kipp Haemo-reflector is accurate to within one per cent.

Here is a comment from one of our customers: "I think that the Brinkman Haemo-reflector is an excellent instrument. We calibrated ours against a Van Slyke and came to the conclusion that it was the Van Slyke we were testing and not the Haemo-reflector. The correlation was within 2%."
Books supplied from stock or obtained to order on BIOCHEMISTRY, PHYSIOLOGY, MEDICINE, PHYSICS, ORGANIC AND INORGANIC CHEMISTRY. Catalogue on request.

Scientific Lending Library New books and latest editions obtainable promptly.

Annual Subscription, Town or Country, from £1. 17s. 6d.
The Library Catalogue revised to December 1949. To subscribers, 10s. net. To non-subscribers, 17s. 6d. net; postage 3s. 8d. Supplement 1950 to 1952. To subscribers 11s. 6d. net; To non-subscribers 3s. net; postage 9d.
Bi-monthly List of New Books and New Editions sent post free on application.

Second-Hand Books
Large stock of recent editions
Back volumes of Scientific Journals
Old and Rare Scientific Books

H.K. LEWIS & Co. Ltd.
LONDON: 136 Gower St., W.C.1
Telephone BUSton 4282 (7 lines)

‘ROCHE’
BIOCHEMICALS FOR RESEARCH

Recent additions to our range include:

ACETYLTHIOCHOLINE IODIDE
BUTYRYLTHIOCHOLINE IODIDE
PYRIDOXAL-5’-PHOSPHATE
SEROTONIN CREATININE SULPHATE

Full details available on request

ROCHE PRODUCTS LIMITED
15 Manchester Square, London, W.1

‘Striking the Happy Medium’

Although this may be taken in more ways than one, there is no doubt that the answer to many problems in the Laboratory lies in the use of

OXOID
CULTURE MEDIA

Further detailed particulars of the Complete OXOID Range may be obtained from:
OXOID LIMITED · MEDICAL DEPARTMENT · 16 SOUTHWARK BRIDGE ROAD · LONDON SE1 · Telephone: Waterloo 4515
The Thyroid Gland
La Glande Thyroïde
Die Schilddrüse

The present state of knowledge concerning the formation of the thyroid hormones has been reviewed by J. Roche and R. Michel in Annu. Rev. Biochem., 1954, 23, 481-500 and by S. E. Barker in Annu. Rev. Physiol., 1955, 17, 417-422.


The following lodo-amino acids in chromatographically pure form can be supplied by us:

| 3-MONOIDO-L-TYROSINE | $0.90 per g. | D,L-THYRONINE | $11.00 per g. |
| 3.5-DIBROMO-L-TYROSINE | 2.00 per g. | D,L-DIODOTHYRONINE | 6.00 per g. |
| 3.5-DIODO-L-TYROSINE | 1.00 per g. | L-THYROXINE, SODIUM SALT | 6.00 per g. |

3,5,3'-TRIODO-L-THYRONINE, SODIUM SALT | $16.00 per g. |

Sets of 1 gram of each | $45.00 |

Write for free Catalog No. 5, listing over 2400 research chemicals.

ALDRICH CHEMICAL COMPANY, INC.
2747 NORTH BOOTH STREET
MILWAUKEE 12, WISCONSIN, U.S.A.

Printed in Great Britain at the University Press, Cambridge
(Brooke Crutchley, University Printer)
THE JOURNAL OF PHYSIOLOGY
APRIL 1957. VOL. 136, NO. 2

REINHARDT, W. O. and YOFFEY, J. M. Lymphocyte content of lymph from the thoracic and cervical ducts in the guinea-pig.

DICKER, S. E. and NUNN, JOAN. The role of the antidiuretic hormone during water deprivation in rats.

KOSTERLITZ, H. W. and ROBINSON, JUDITH A. Inhibition of the peristaltic reflex of the isolated guinea-pig ileum.

MAURICE, D. M. The structure and transparency of the cornea.


BUTTERWORTH, K. R. and MANN, MONICA. A quantitative comparison of the sympathomimetic amine content of the left and right adrenal glands of the cat.

FINDLAY, J. D. The respiratory activity of calves subjected to thermal stress.

BÜLBRING, EDITH and LÜLLMANN, H. The effect of metabolic inhibitors on the electrical and mechanical activity of the smooth muscle of the guinea-pig's taenia coli.

NOUR-ELDIN, F. and WILKINSON, JOHN F. The blood clotting factors in human saliva.

CAMPBELL, H. J. and HARRIS, G. W. The volume of the pituitary and median eminence in stalk-sectioned rabbits.

FORTIER, C., HARRIS, G. W. and McDoNALD, I. R. The effect of pituitary stalk section on the adrenocortical response to stress in the rabbit.

BROWN-GRAnt, K., HARRIS, G. W. and REICHLIN, S. The effect of pituitary stalk section on thyroid function in the rabbit.

CLARKE, E. W. A simplified heart-oxygenator preparation suitable for isotope experiments: with some observations on the metabolism of acetate, pyruvate and four amino acids.

BLIGH, J. The relationship between the temperature in the rectum and of the blood in the bicipitid trunk of the calf during exposure to heat stress.

BLIGH. J. A comparison of the temperature of the blood in the pulmonary artery and in the bicipitid trunk of the calf during thermal polynoea.

BLIGH, J. The initiation of thermal polynoea in the calf.

CURTIS, D. R., ECCLES, J. C. and ECCLES, ROSAMOND M. Pharmacological studies on spinal reflexes.

BRONK, SYLVIA M. and FISHER, R. B. The interaction of growth hormone and insulin in the perfused rat heart.

Subscription price 80s. per volume of three parts, post free
Single parts 30s. each, postage extra

CAMBRIDGE UNIVERSITY PRESS
BENTLEY HOUSE, 200 EUSTON ROAD
LONDON, N.W. 1