Electrophoresis '81
Advanced Methods · Biochemical and Clinical
Applications
Proceedings of the Third International Conference on
Electrophoresis Charleston, SC, April 7–10, 1981
1981. 17 cm x 24 cm. XVIII, 1021 pages. 406 illustrations.
Hardcover. DM 245,—; approx. US $115.00 ISBN 3 11 008155 5

This volume contains over 100 of the presentations made
either as oral reports or posters at "Electrophoresis '81".
The manuscripts have been compiled into four sections
entitled: I. Theory and Methods, II. High Resolution Two-
Dimensional Electrophoresis, III. Biomedical and Bio-
logical Applications, IV. Isotachophoresis and Free Flow
Electrophoresis, Author-Index, Subject-Index.

Price is subject to change
This compendium, previously published under the title of *Collected Tentative Rules and Recommendations of the Commission on Biochemical Nomenclature* has now been updated and published in its third edition for the International Union of Biochemistry by the Biochemical Society under the title: *Biochemical Nomenclature and Related Documents*.

The compendium, prepared by the IUB Committee of Editors of Biochemical Journals, collects together all the current rules and recommendations on nomenclature that have emanated from the IUPAC-IUB and IUB nomenclature committees. As such it is an indispensable part of the library of all biochemists.

The price is £3.50/US$7.00, postage-paid (vi plus 223 pages, paper bound). A 20% discount is allowable on orders for 10 or more copies to a single address. Payment must accompany the order.

Order from The Biochemical Society Book Depot, P.O. Box 32, Commerce Way, Colchester CO2 8HP Essex, U.K.
Mobility and Migration of Biological Molecules

Edited by P. B. GARLAND and R. J. P. WILLIAMS

Mobility and Migration of Biological Molecules was the title of the Biochemical Society's Forty-sixth Symposium held in London in December 1980. The fifteen papers presented by leading biochemists involved in research studies of molecular movement are now published in this book. In particular, the aspects of intramolecular movements of proteins, movements of ions and reaction intermediates in proteins (including the structure and function of ion channels), rotational and lateral movements in biomembranes and movements of proteins across membranes are discussed in detail. Mobility and Migration of Biological Molecules offers the specialist a valuable review of the existing state of knowledge and useful signposts for the directions further research must take.

275 pp. ISBN 0 904498 13 1 £25.00 (US$57.50)

Order from
THE BIOCHEMICAL SOCIETY BOOK DEPOT
PO Box 32, Commerce Way, Colchester CO2 8HP, Essex, U.K.

Writing a Scientific Paper & Speaking at Scientific Meetings

By Vernon Booth

To the newly revised and amplified fifth edition of Writing a Scientific Paper, the author has added the companion essay on Speaking at Scientific Meetings. Widely praised in its earlier editions, this concise compendium of advice is expected to receive renewed acclaim. By both the first-time writers of scientific papers and the alert 'old hand' it will be found of the greatest help in avoiding faults in writing and presenting papers.

Soft cover 48 pp. £2.50 (US$6.00)

To order or to obtain details of discounts available for purchases in quantity write to:
The Biochemical Society Book Depot, P.O. Box 32, Commerce Way, Colchester CO2 8HP, Essex, U.K.
The Ames Test for Mutagenicity

There is increasing evidence that some human cancers may be caused by both natural and man-made chemicals in the environment, through damage to DNA. Thus, identification of carcinogenic agents is clearly a major step in reducing human exposure.

Animal testing, mainly in rats and mice, still remains a key method for detection of carcinogens. However, these tests are long-term, very expensive, and require much manpower. Also, such tests do not lend themselves to the complex chemical mixtures around us, such as impurities in air and water and cigarette smoke.

Thus, there is a need for short-term tests which would allow, for example, a chemical company to test a new synthetic chemical rapidly and adequately, and make an early economic decision before large-scale production is undertaken.

For some fifteen years Bruce N. Ames and co-workers have been developing a simple test for detecting chemical mutagens, and have shown that a large percentage of chemical carcinogens are mutagens. They have described the test in detail.2

This rapid and simple test, now well known as the Salmonella/microsome test or "Ames test," has been validated by assaying about 300 chemicals1 known, by animal testing, to be carcinogens or noncarcinogens, and the results have been discussed.3

The "Ames test" is carried out on petri plates, and employs several specially prepared mutants of Salmonella typhimurium exhibiting different kinds of histidine mutations. Rat-liver homogenates are added directly to the petri plates as a source of activating enzymes, providing an important aspect of mammalian metabolism to the in vitro test.2 Thus, carcinogens requiring metabolic activation can be detected easily. Mutagenicity is determined by counting the number of revertants per plate.

Positive and negative controls are run with each experiment, as is a control for liver homogenate (S9) sterility. Aldrich offers a number of products which are used as strain-specific controls in the test.4

Other compounds useful as positive controls in the presence of S9 are 2-acetamidofluorene, benz[a]pyrene and 2-aminoantracycine (which serves as a positive control for all strains in the presence of S9). We also offer the very potent mutagen N-methyl-N'-nitro-N-nitosoguanidine (MNNG).

It has been demonstrated that, generally, carcinogens are mutagens, and since this test is becoming widely accepted as a simple and rapid means of detecting chemical mutagens, in individual laboratories continue their efforts to modify and optimize the test. These efforts result in published recommendations56 from time to time, which help establish criteria for the usefulness of the test.

References:

10,889-8 4-Nitro-o-phenylenediamine...........100g $12.00
500g $42.00
12,992-5 Methyl methanesulphonate..5g $11.00; 25g $33.85
100g $96.00
B1.608-0 Benzo[a]pyrene.................100mg $7.60; 1g $38.10
19,993-1 Sodium azide..................100g $11.00; 500g $25.00
21,626-7 7,12-Dimethylbenz[a]anthracene...1g $32.95
86,044-1 Nitrofurantoin................25g $5.75
A410-9 2-Aacetamidofluorene [CAS 53-96-3,
N-(2-fluorenyl)acetamide]*..........5g $15.00
25g $63.75
A3,840-1 9-Aminoacidine hydrochloride monohydrate
25g $14.20
A3,880-0 2-Aminoantracycine..........5g $21.50; 25g $69.75
N1,675-4 2-Nitrofluorenone............25g $24.00; 100g $74.15
12,994-1 MNNG..........................10g $13.50; 25g $26.25
21,394-2 3-Methylcholanthrene...250mg $17.00; 1g $43.25

*This carcinogen is regulated by Title 29, Part 1910, Code of Federal Regulations.

chemists helping chemists in research & industry
aldrich chemical co.
P.O. Box 355, Milwaukee, Wisconsin 53201 • (414) 273-3850

Printed in Great Britain by Spottiswoode Ballantyne Ltd., Colchester and London