

LITEX AGAROSE

To meet your requirements
LITEX "The Danish" AGAROSE is made available with:

- STANDARDIZED ELECTROENDOSMOSIS.
- CONSTANT GELLING PROPERTIES.

AA 0010 AGAROSE TYPE HSA

25 gm.	\$25.00
100 gm.	48.00
500 gm.	200.00

TRY SOME

Product No.	Agarose type	Gelling temp. (dynamic)	-Mr Electro-endosmosis
AA0010	HSA	42°C	0,13
AA0020	HSB	42°C	0,10
AA0030	HSC	42°C	0,02
AA0040	LSA	36°C	0,25
AA0050	LSB	35°C	0,04

Sample & Literature upon request.

Exclusive U.S. & Canadian Distributor

**ACCURATE CHEMICAL &
SCIENTIFIC CORPORATION**

28 Tec Street, Hicksville, N.Y. 11801/Tel: (516) 433-4900

JV

THE text for over twenty years!

Now in an expanded,
revised, and updated
edition—

GENERAL VIROLOGY, 3rd Ed.

Salvador E. Luria, *University of California, San Francisco, California*
Massachusetts Institute of Technology, by James
 S. Darnell, Jr., *Rockefeller University*, by David
 Baltimore, *Massachusetts Institute of Technology*,
 by *Microbiology & Allan Campbell*, *University of California, San Francisco*

What before has a virology text been authored by such well-respected names including Nobel Prize Winners, Salvador Luria and David Baltimore. This new edition has been completely revised and revised, bringing the text up to date by including the latest research in the field of virology. The text is now organized into broad sections on general virology, specific virology, and the molecular biology of viruses. The text is now more comprehensive, including a chapter on specific virology.

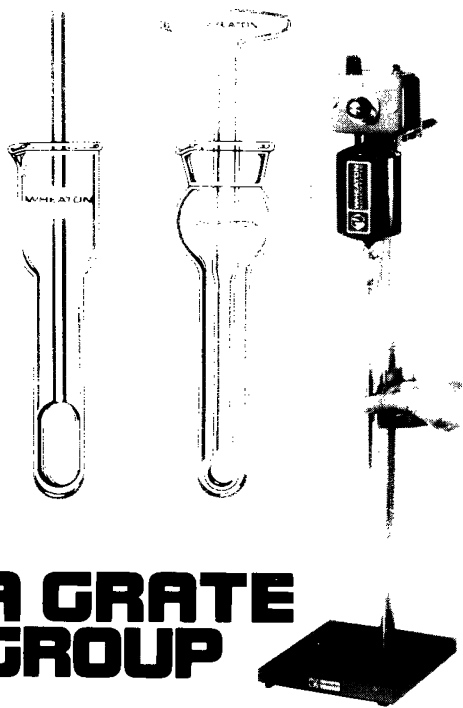
- An integrated view of virology
- An integrated view of molecular biology
- An integrated view of immunology
- An integrated view of cell biology
- An integrated view of genetics
- An integrated view of biochemistry
- An integrated view of physiology
- An integrated view of pathology
- An integrated view of epidemiology
- An integrated view of immunology
- An integrated view of cell biology
- An integrated view of genetics
- An integrated view of biochemistry
- An integrated view of physiology
- An integrated view of pathology
- An integrated view of epidemiology

For a complete list of titles in the *Wiley-Interscience* series, write to: Robert Merrill, Dept. 8398, Wiley-Interscience, 605 Third Avenue, New York, N.Y. 10016.

JOHN WILEY & SONS, Inc.
 605 Third Avenue
 New York, N.Y. 10016
 212 850 6000
 212 850 6000

For a complete list of titles in the *Wiley-Interscience* series, write to: Robert Merrill, Dept. 8398, Wiley-Interscience, 605 Third Avenue, New York, N.Y. 10016.

WHEATON TISSUE GRINDERS



A GRATE GROUP

The Wheaton Tissue Grinder is a simple, efficient, and easy-to-use instrument for grinding tissue. It is available in three models: the standard model, the model with a tapered pestle, and the model with a motorized base. The standard model is made of stainless steel and has a tapered pestle for efficient grinding. The model with a tapered pestle is made of stainless steel and has a tapered pestle for efficient grinding. The model with a motorized base is made of stainless steel and has a motorized base for efficient grinding.

Available through Ace Scientific Supply, Allied Scientific of Va., Inc., Eastern Research, Fisher Scientific Company, International Biological Laboratories, Inc., LaPine Scientific, Labco, Lawshe Instrument Company, Inc., Lab-Tek, Bicknell Company, Markson Scientific, Inc., Trace Scientific, Inc., Rascher & Betzold, the Chem-Best Scientific Co., Inc., Sargent-Welch Scientific Company, Scientific Products, VWR Scientific, and other leading dealers. For a complete list of dealers, write to: Wheaton Instrument Company, 1000 North 17th Street, Wheaton, Ill. 60187.

**WHEATON
INSTRUMENT COMPANY**

1000 North 17th Street, Wheaton, Ill. 60187

We cater to the cultured set.

When we feed our cell lines, we serve only the finest. Flow Laboratories Media and Sera. If our media and sera have helped us to become the number one producer of cell cultures, it should do the same for you. And that's food for thought.

Whether you are using our cells or not, help them reach their full

potential, give them a taste of the good life — with media and sera from Flow Laboratories.

If you'd like to see a menu describing our products and test procedures contact us.

If it doesn't say Flow Laboratories, it's not a Cell Raiser product.



Flow Laboratories

1710 Chapman Avenue
Dept. 101
Rockville, Maryland 20852
(301) 881-2900

Inglewood, California
Mississauga, Ontario, Canada



D. P. Snustad
M. Sobel
G. Stark
J. Stephenson
J. H. Strauss
F. W. Studier
B. Sugden
M. D. Summers
J. Sussenbach
K. Takemoto
F. Tan
P. Tattersall
J. Taylor
M. W. Taylor
P. Tegtmeier
E. S. Tessman

C. Tibbetts
G. Todaro
D. Troxler
P. van der Vliet
G. VandeWoude
J. van Etten
H. E. Varmus
L. Velicer
B. Vennström
I. M. Verma
J. Vilček
K. von der Helm
E. Wagner
D. Walker
D. Ward
A. L. Watkins

P. K. Weck
R. Weinberg
A. Weissbach
C. Weissman
S. Weller
H. Westphal
J. Williams
G. A. Wilson
E. Wimmer
O. Witte
W. Wold
C. P. Yehle
H. Young
S. A. Zahler
J. F. Zissler
H. zur Hausen

ACKNOWLEDGMENT

The following have served as invited special reviewers for the *Journal* during 1977, and their help is greatly appreciated.

S. A. Aaronson
S. Adhya
J. Adler
R. Adler
C. Anfinsen
R. Arlinghaus
G. Attardi
J. T. August
M. A. Baluda
L. Barksdale
R. Bassin
N. Battula
H. Bauer
A. Becker
A. J. D. Bellett
T. Benjamin
R. Benzinger
P. Berg
S. Berget
K. Berns
H. Bernstein
M. A. Billeter
J. M. Bishop
F. Bollum
D. P. Bolognesi
H. G. Boman
A. Bothwell
H. Bremer
W. Brockman
T. Broker
C. S. Buller
B. W. Burge
M. Burger
J. S. Butel
R. Callahan
R. D. Cardiff
B. Carter
S. R. Casjens
M. J. Chamberlin
R. M. Chanock
J. M. Coffin
G. Cooper
D. J. Cummings
L. K. Curtiss
J. Dahlberg
S. Dales
E. Daniell
A. Das
E. Davidson
N. Davidson
V. Defendi
J. DeLarco
P. Desjardins
C. Dickson
P. M. Dierks
H. Diggelman
G. Dimayorca
R. H. Doi
J. W. Drake
D. Dressler
H. Drexler
W. Eckhart
R. Eisenman
H. Fan
A. Faras
G. Fareed
G. Felsenfeld

B. Fields
P. Fischinger
J. Flanagan
J. Flint
F. Frankel
N. C. Franklin
R. Franklin
E. C. Friedberg
P. Gallimore
A. T. Ganesan
A. J. Garro
R. Gesteland
R. Gilden
D. Gillespie
J. Glorioso
R. Goldberg
S. H. Goodgal
A. Granoff
W. R. Guild
A. T. Haase
G. L. Hager
D. Harter
J. Hartley
W. Haseltine
M. Hatanaka
J. Hay
G. Hayward
W. Hayward
W. Henle
J. A. Hoch
J. A. Holowscak
N. Hopkins
K. Horiuchi
M. M. Howe
J. A. Huberman
R. Hyman
V. Israel
J. Ito
A. B. Jacobson
L. Kääriäinen
R. Kamen
A. Kaplan
T. Kelly
S. Kit
D. Korn
M. Kozak
A. Kozinski
A. M. Kropinski
R. G. Krueger
R. M. Krug
E. Kuff
E. Kutter
F. Landsberger
R. Lazzarini
S. Lederberg
E. Lennette
R. Lerner
A. J. Levine
L. Levintow
A. Lewis
F. Lilly
T. Lindahl
A. A. Lindberg
T. Linné
D. Livingston
H. Lodish
P. S. Lovett

D. Lowy
P. E. McAllister
D. J. McCorquodale
J. J. McSharry
J. Maizel
J. Maniloff
D. Marciani
P. Marcus
J. Marmur
R. Martin
R. J. Martinez
R. C. Miller
K. Moellig
D. H. Moore
C. Morgan
R. W. Moyer
C. Mulder
D. Nakada
H. Nash
D. Nathans
P. Neiman
E. G. Niles
E. Norrby
P. O'Donnell
B. A. Oldstone
T. Papas
J. T. Parsons
E. J. Patzer
J. J. Pène
S. Penman
R. Perry
R. Pettersson
U. Pettersson
E. R. Pfefferkorn
P. Pitha
A. R. Price
A. M. Prince
H. Raskas
W. E. Rawls
M. E. Reichmann
M. Revel
M. Rhoades
S. L. Rhode III
J. Robb
J. W. Roberts
R. Roberts
W. S. Robinson
R. Roeder
J. A. Rose
J. K. Rose
J. Ross
E. Rothenberg
R. Rottman
L. J. Rutberg
P. D. Sadowski
P. Schaeffer
T. Schenk
R. W. Schlesinger
R. H. Schloemer
J. Schlom
A. Sen
L. A. Sherman
C. Sherr
D. A. Shub
A. Silverstone
J. Skehel
A. Smith

JOURNAL OF VIROLOGY

INSTRUCTIONS TO AUTHORS

Correspondence. Submit manuscripts in duplicate (original and one copy) to ASM Publications Office, 1913 I St., N.W., Washington, D.C. 20006. A \$35 check or money order (non-refundable) must accompany the manuscript to cover handling costs. Institutional purchase orders will be accepted, but the author is requested to utilize this procedure only if problems are encountered in getting reimbursement from the author's institution. We solicit your cooperation in this effort to hold down the cost of administration.

General policy. Any manuscript submitted must be a report of unpublished original research, which is not being considered for publication elsewhere. When a submitted manuscript is judged to be more appropriate for the subject scope of one of the other ASM journals, the Editors will transfer it to that journal for consideration, so notifying the author. In borderline cases, the preference of the author will be considered, but the final decision rests with the respective Editors and the Chairman of the ASM Publications Board.

The "editorial style" of the *Journal* essentially follows the *CBE Style Manual* (3rd ed., AIBS, 1972). Biochemical nomenclature, including abbreviations and symbols, should follow the recommendations of the IUPAC-IUB Commission on Biochemical Nomenclature (CBN) and the Instructions to Authors of *J. Biol. Chem.* and *Arch. Biochem. Biophys.* (first issue of each year), which are based upon the CBN Recommendations and contain a list thereof. Reprints of these Recommendations and advice on biochemical and chemical nomenclature are available from the NRC Office of Biochemical Nomenclature (W. E. Cohn, Director), Biology Division, Oak Ridge Nat'l. Lab., Box Y, Oak Ridge, TN. 37830 (phone: 615-483-8611, Ext. 3-7514). Normally, abbreviations (except those of standard units of measurement and symbols of the elements) should be defined and introduced parenthetically at first use in the text. Certain abbreviations will be accepted without definition in the title, abstract, and text. Among these abbreviations are: DNA (deoxyribonucleic acid); RNA (ribonucleic acid); rRNA (ribosomal RNA); mRNA (messenger RNA); tRNA (transfer RNA); AMP, ADP, ATP, dAMP, dADP, dATP (for the respective 5' phosphates of adenosine or the other nucleosides, using appropriate letter symbols); 2'-AMP, 3'-AMP, 5'-AMP (the 2', 3', and 5', where needed for contrast, phosphates of the nucleosides); DNase (deoxyribonuclease); RNase (ribonuclease); P_i (orthophosphate); PP_i (pyrophosphate); mol wt (molecular weight); UV (ultraviolet); PFU (plaque-forming units); Tris [tris(hydroxymethyl)amino-methane]; DEAE- (diethylaminoethyl-); and EDTA (ethylenediaminetetraacetate). Genetic symbols should follow essentially the recommendations of Demerec et al. (*Genetics* 54:61, 1966). Enzyme activities should be expressed in the terms set out in CBN's *Enzyme Nomenclature* (1972) (Elsevier Scientific Publishing Co.). Lengths, weights, volumes, and molarities should make use of the prefixes m, μ , n, and p (for 10⁻³, 10⁻⁶, 10⁻⁹, and 10⁻¹², respectively), where applicable, avoiding such compound prefixes as m μ and $\mu\mu$. Metric units should be employed as much as possible. The Editors reserve the privilege of editing manuscripts to make them conform to the above-mentioned stylistic conventions.

Form of manuscript. All parts of the manuscript should be typed double-space or, preferably, triple-space. Most manuscripts can and should be divided into the following sections: Abstract, Introduction, Materials and Methods, Results, Discussion, Acknowledgments, and Literature Cited. Only one weight of heading (paragraph lead-in) should be used within each section.

Title. A single statement of the subject of a paper is preferred to a main title-subtitle arrangement. A

short version of the title (no more than 46 characters and spaces) should be supplied for use as a running head.

Abstract. An Abstract appears at the beginning of each paper in the *Journal*. The abstract should not exceed 200 words.

Literature Cited. In the text, references are cited by number. The Literature Cited section should be typed in alphabetical order, by first author, and numbered. Each reference should include the title of the article and inclusive pagination. Names of journals are abbreviated according to *Bibliographic Guide for Editors & Authors* (American Chemical Society, 1974). Literature citations should be restricted to closely pertinent papers. Citations of abstracts, theses, "unpublished data," "personal communication," and "in press" will not be accepted in the Literature Cited, but may be used parenthetically in the text.

Tables. Each table should be typed on a separate page. The data should be arranged so that columns of like material read down, not across. The headings should be sufficiently clear so that the meaning of the data will be understandable without reference to the text. Explanatory footnotes are permitted, but detailed descriptions of the experiments are not. The materials and methods used to gain the data should properly remain in the section of that name.

Figures. A complete set of figures, preferably glossy photographs, should accompany each of the two copies of the manuscript. Each figure should be numbered and should include the name of the author, either in the margin or on the back (marked lightly with a soft pencil). Graphs (*submit as photographs*) should be finished drawings not needing further artwork or type-setting. Absolutely no part of a graph should be typewritten (except the legend, which should be typed on a separate page). All lettering should be done with a lettering set. Most graphs will be reduced to one-column width, and all elements in the drawing should be prepared to withstand this reduction. The legend of the figure should provide enough information so that the figure is understandable without reference to the text. Experimental details from Materials and Methods should not be repeated in figure legends.

Notes. The accepted form for Notes is somewhat different from the foregoing. Contributors should consult a recent issue of the *Journal* for style. Notes should not exceed 500 words. The Abstract should not exceed 25 words. Papers submitted as Notes which are fragments of full-length papers are not acceptable. Consideration will be given to publication of Notes which consist of commentaries or interpretations of principles of virology.

Nomenclature of viruses. Viruses named after a disease should be written as separate words in lower-case roman, except when the name of the disease is derived from a proper noun: herpes simplex virus, measles virus, Newcastle disease virus, poliomyelitis virus, varicella-zoster virus, vaccinia virus.

Most other viruses should be written as a single word in lower case: adenovirus, coxsackievirus, cytomegalovirus, echovirus, herpesvirus, mengovirus, picornavirus, poliovirus, poxvirus.

Copyright. Once a paper has been published in the *Journal*, which is a copyrighted publication, the legal ownership of all parts of the paper, including the illustrations, has passed from the author to the *Journal*. If the same author, or any author, wishes to republish material previously published in the *Journal*, he must first receive written permission from ASM.

Reprints. Reprints (in multiples of 100) will be furnished contributors when ordered in advance. A table showing the cost of reprints, and an order form, will be sent with the proof.

***A masterful compilation of articles on the convergence
of basic science and clinical microbiology –***

MICROBIOLOGY-1977

A major theme of this new collection of outstanding papers from recent ASM conferences and symposia is the interaction between basic research and clinical applications. For example, the material on the mode of action of penicillins, by Tomasz and Strominger, sheds much new light on old clinical mysteries like "persisters." Of equally great fascination are Westphal's classic review of bacterial endotoxin and host resistance, and Todaro's discussion of the origin of tumor viruses. The material on bacterial cell walls and host response will particularly interest specialists in infectious diseases. The following are the major sections of this important new book:

- I Cell Envelope and Cell Division in Bacilli**
- II *Pseudomonas aeruginosa* and Related Species**
- III Novel Aspects of Penicillin Action**
- IV Bacterial Antigens and Host Response**
- V Persistent Viral Infections**
- VI Endogenous Tumor Viruses**
- VII Viruses and Plasmids in Fungi and Protozoa**

Bibliographic Information:

Editor-in-Chief: David Schlessinger

ISBN: 0-914826-13-1

May 1977, 593 pages, \$22.00 (Members of ASM may purchase MICROBIOLOGY — 1977 for \$12.00. Member purchases are for personal use only. Payment must accompany member orders.)

Also available, in the annual MICROBIOLOGY series:

MICROBIOLOGY –1976, November 1976, 586 pages, \$22.00 (ASM Members: \$12.00)

MICROBIOLOGY –1975, October 1975, 521 pages, \$22.00 (ASM Members: \$12.00)

MICROBIOLOGY –1974, March 1975, 313 pages, \$22.00 (ASM Members: \$12.00)

Standing orders are welcome.

Please direct all orders and inquiries to the publisher:

American Society for Microbiology — Publications Office

1913 I Street, NW, Washington, DC 20006



Cellulose ion exchangers should be spherical too

DEAE-Sephacel[®] is



DEAE-Sephacel
Total capacity: 1.4 meq/g
Wet diameter: 40-160 μ m

The spherical form of DEAE-Sephacel gives you easy, uniform packing without the generation of fines. It improves your results because it reduces zone broadening and ensures uniform, high flow rates. DEAE-Sephacel is reproducible from batch-to-batch.

No precycling is needed because DEAE-Sephacel is ready swollen. Its controlled macroporous structure, which is almost completely independent of pH and ionic strength, gives high protein capacities and excellent recoveries.

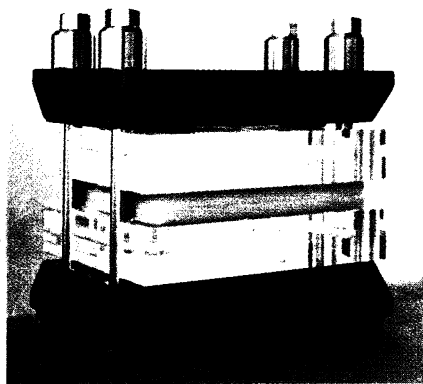
DEAE-Sephacel is the only spherical cellulose ion exchanger.

Pharmacia Fine Chemicals
Division of Pharmacia Inc.
Piscataway, New Jersey 08854
Phone (201) 469-1222



Pharmacia
Fine Chemicals

STOP YOUR VIRUSES FROM GOING AROUND.



Introducing the Pellicon® Cassette System from Millipore.

By pre-concentrating your viruses in our \$2500 Pellicon system, you can dramatically decrease the number of times viruses go around in your centrifuge. Without damage to virus particles or loss of biological activity.

Now you can increase the life of the centrifuge while at the same time increasing the amount of virus concentrate for research.

The Pellicon is also a perfect choice for harvesting bacteria. When operated as a closed system, you can totally eliminate aerosol generation with pathogenic microorganisms and recombinant DNA strains, thus avoiding possible hazards to researchers.

The Pellicon Cassette System also handles protein concentration. Because the system's design is sinuous flow

rather than hollow fiber, protein can be forced through at higher concentrations under more pressure. Without clogging or sticking.

There's more. The Pellicon Cassette is designed so you can stack the membranes to allow larger amounts of filtrate to pass through. So you adapt the system to your exact needs.

See it for yourself. At your request, we'll send you a representative trained in biological research filtration methods to demonstrate the Pellicon in your laboratory. Just write to Paul Chadwick, Product Manager, Laboratory Ultrafiltration at Millipore or call toll-free, 800-225-1380 (in Mass., 617-275-9200).

The Pellicon Cassette System.
Now your viruses won't get around much anymore.

Millipore Corporation,
Bedford, Massachusetts 01730.

