

An important resource for everyone  
involved in research on the  
metabolism of drugs and chemicals

# DRUG METABOLISM AND DISPOSITION

The Biological Fate of Chemicals

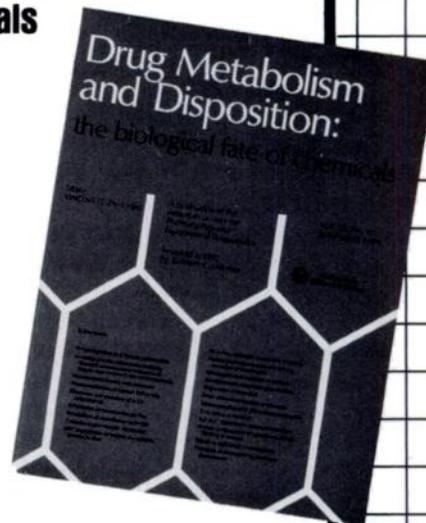
Editor: Vincent G. Zannoni, PhD, University of Michigan,  
Ann Arbor, Michigan

**DRUG METABOLISM AND DISPOSITION** publishes *in vitro*  
and *in vivo* experimental results that bring readers significant  
and original information on xenobiotic metabolism and  
disposition, including metabolism of all pharmacologic agents  
or drugs and environmental chemicals, reactants, and preser-  
vatives. All papers are refereed to ensure a high standard of  
publication. The areas covered are:

- pharmacokinetics
- pharmacodynamics
- genetic, nutritional, and hormonal factors affecting the  
biological fate of chemicals
- toxicological consequences of xenobiotic metabolism

This journal should be a standard reference in all pharmacology  
and toxicology departments. It is also a valuable resource for all  
medicinal chemists involved in designing drugs and all biochemists  
involved with drug metabolism.

**Bimonthly**



**YES!** Enter my subscription:

Avoid future rate increases and ensure uninterrupted service — enter  
your multiyear subscription today!

**Drug Metabolism and Disposition** (bimonthly)

- Individual: \$75/yr    Institutions: \$120/yr  
(Please add \$20.00 outside the U.S.; in Canada, also add 7% GST.)  
 New Subscription    Renewal    3 yrs    2 yrs    1 yr

name \_\_\_\_\_

address \_\_\_\_\_

city/state/zip \_\_\_\_\_

Payment options:

- Check enclosed    Bill me  
 VISA    MasterCard    American Express

card # \_\_\_\_\_

signature/P.O. # \_\_\_\_\_

MD residents, please add 5% sales tax. Subscriptions from outside the US and  
Canada must be prepaid, in US dollars only. Rates valid for orders received  
before October 31, 1991.

Please allow 10 weeks for delivery of your first issue. Surface mail delivery to  
countries outside the US may take up to 16 weeks. Airmail rates available upon  
request.

**Williams & Wilkins**

DMD 52767

P.O. Box 23291  
Baltimore, Maryland 21203-9990

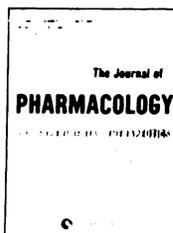
Broadway House  
2-6 Fulham Broadway  
London SW6 1AA England

J1002S01



# Leading Pharmacology Journals

Publications of the American Society for  
Pharmacology and Experimental Therapeutics, Inc.

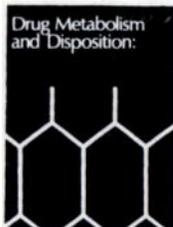


## The Journal of Pharmacology and Experimental Therapeutics

Editor:  
Eva King Killam, PhD

JPET is respected the world over as one of the leading research journals in the field of pharmacology. Readers find broad

coverage of all aspects of the interactions of chemicals with biological systems, including autonomic, behavioral, cardiovascular, cellular, clinical, developmental, gastrointestinal, immuno-, neuro-, pulmonary, and renal pharmacology, as well as analgesics, drug abuse, metabolism and disposition, chemotherapy, and toxicology. **Monthly**



## Drug Metabolism and Disposition: *the biological fate of chemicals*

Editor:  
Vincent G. Zannoni, PhD

Drug Metabolism and Disposition publishes *in vitro* and *in vivo* experimental results that bring readers significant and

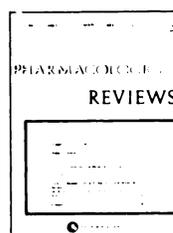
original information on xenobiotic metabolism and disposition, including metabolism of all pharmacologic agents or drugs and environmental chemicals, reactants, and preservatives. The areas covered are: pharmacokinetics, pharmacodynamics and mechanisms, genetic, nutritional, or hormonal factors affecting the biological fate of chemicals, toxicological consequences of xenobiotic metabolism. **Bimonthly**

### Williams & Wilkins

P.O. Box 23291 • Baltimore, MD 21203-9990

Broadway House

2-6 Fulham Broadway • London SW6 1AA England



## Pharmacological Reviews

Editor:  
Robert E. Stitzel, PhD

Pharmacological Reviews is a showcase for important review articles in your field, featuring longer papers on topics of high current interest. The areas covered in review papers have included biochemical

and cellular pharmacology, drug metabolism and disposition, renal pharmacology, neuropharmacology, behavioral pharmacology, clinical pharmacology, and toxicology. No library serving the pharmacologic community should be without a subscription. **Quarterly**



## Molecular Pharmacology

Editor:  
T. Kendall Harden, PhD

The papers published in Molecular Pharmacology are on the cutting edge of research on drug action and selective toxicity at the molecular level. Original applications of biochemistry, biophysics,

genetics, and molecular biology are juxtaposed with innovative pharmacologic research to elucidate basic problems in pharmacology and toxicology, including such areas as molecular mechanisms involved in drug receptor-effector coupling, xenobiotic metabolism, and antibiotic and anticancer drug action. **Monthly**

**To order**, complete and return the attached coupon. Or call TOLL FREE 1-800-638-6423 from anywhere in the U.S. or Canada.

Avoid future rate increases and ensure uninterrupted service — enter your multiyear subscription(s) today!

**YES!** Enter my subscription(s) to the following:

**The Journal of Pharmacology & Experimental Therapeutics** (monthly)

Individual \$170/yr  Institutional \$285/yr

(Please add \$65/yr outside the U.S.; in Canada, also add 7% GST.)

New subscription  Renewal

3 years  2 years  1 year

**Drug Metabolism and Disposition** (bimonthly)

Individual \$75/yr  Institutional \$120/yr

(Please add \$20/yr outside the U.S.; in Canada, also add 7% GST.)

New subscription  Renewal

3 years  2 years  1 year

**Molecular Pharmacology** (monthly)

Individual \$90/yr  Institutional \$195/yr

(Please add \$30/yr outside the U.S.; in Canada, also add 7% GST.)

New subscription  Renewal

3 years  2 years  1 year

**Pharmacological Reviews** (quarterly)

Individual \$50/yr  Institutional \$90/yr

In-training \$35/yr

(Please add \$15/yr outside the U.S.; in Canada, also add 7% GST.)

New subscription  Renewal

3 years  2 years  1 year

#### Payment options:

Check enclosed (payable to Williams & Wilkins)  
 Bill me  American Express  MasterCard  VISA

Card # \_\_\_\_\_ Exp. date \_\_\_\_\_

Signature or P.O. # \_\_\_\_\_

Maryland residents, please add 5% sales tax. Subscriptions from outside the U.S. must be prepaid, in U.S. dollars only. Rates valid until October 31, 1991.

Please allow 10 weeks for delivery of your first issue. Surface mail delivery to countries outside the U.S. may take up to 16 weeks. Airmail rates available upon request.

Name \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Return coupon to:



**Williams & Wilkins**  
P.O. Box 23291  
Baltimore, MD 21203-9990

Broadway House  
2-6 Fulham Broadway  
London SW6 1AA England

Or call TOLL FREE 1-800-638-6423 from anywhere in the U.S. or Canada.

ASP 52778

J1002S02

## INFORMATION TO SUBSCRIBERS

THE JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS is issued monthly. Four volumes are published each year. Each volume contains three numbers.

*Correspondence concerning business matters* should be addressed to Williams & Wilkins, 428 East Preston St., Baltimore, MD 21202-3993 U.S.A.

*Annual Subscription Rates*—U. S. A. AND POSSESSIONS: personal, \$180.00; institutional, \$310.00; single copy, \$19.00. FOREIGN: personal, \$245.00; institutional, \$375.00; single copy, \$23.00. (Prices subject to change.) Institutional (multiple reader) rate applies to libraries, schools, hospitals, clinics, group practices, and federal, commercial, and private institutions and organizations. Foreign subscribers who wish to have issues sent by airmail may inquire of the publisher for the additional cost. The GST Tax Number for Canadian subscribers is 123394371.

*Change of address:* Publisher must be notified 60 days in advance. Journals undeliverable because of incorrect address will be destroyed. Duplicates can be obtained (if available) from the publisher at the regular price of single issues.

*New subscriptions* are entered to begin with the next issue to publish unless otherwise specified by the subscriber. Subscriptions run for a twelve-month period.

To avoid a break in your series, subscriptions should be renewed promptly. The publisher cannot guarantee to supply back issues on belated renewals.

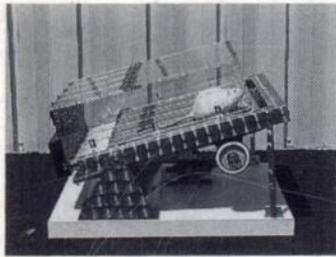
*Reprints* of individual articles are available *only* from authors.

*Microfilm.* For availability, inquire of Williams & Wilkins.

WILLIAMS & WILKINS  
BALTIMORE, MD 21202-3993 U.S.A.

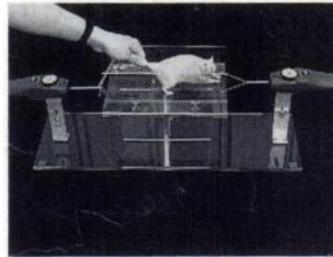
# LAB ANIMAL RESEARCH EQUIPMENT

## INEXPENSIVE EXERCISER



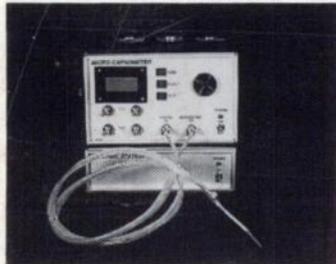
- \* For rats and mice -- 4-lane exerciser.
- \* Electronically controlled speed.
- \* Electric stimulation grids.

## GRIP STRENGTH METER for rats and mice



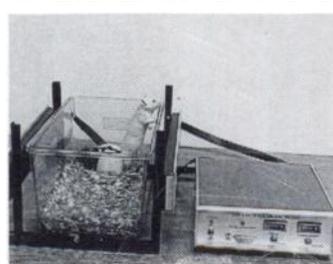
- \* Objectively measures animal deficiency in strength.

## END TIDAL CO<sub>2</sub> METER



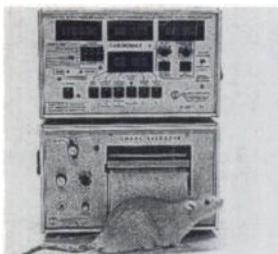
- \* Can be used for Rats
- \* Extremely small air sample flow -- 5ml/min.
- \* Analog output to most recorders.
- \* Digital display N<sub>2</sub>O measurements.

## INEXPENSIVE ANIMAL ACTIVITY METERS



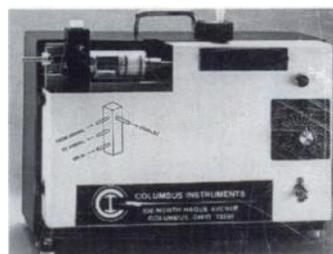
- \* "Mini" activity meter uses standard plastic cages.
- \* Can be used with rats or mice.
- \* 15 Infrared sensors.
- \* Separates ambulatory from total activity.
- \* Multi-cage system available w/ IBM-PC interface.

## CARDIAC OUTPUT FOR RATS



- \* Thermodilution method using 1/3 mm temp. microprobes.
- \* Can be interfaced to an IBM-PC.
- \* Measures: CO, S.V. BP, Mean Transit Time, Ejection Fraction and much more.

## VENTILATORS



- \* Mechanical (piston) positive pressure ventilators for rodents and larger animals.

## ECONOMICAL O<sub>2</sub>/CO<sub>2</sub> METABOLIC SYSTEM



Your own IBM-PC compatible computer.

- \* O<sub>2</sub> Consumption/CO<sub>2</sub> production computer (IBM-PC).
- \* Open-circuit indirect calorimeter.
- \* Completely computerized.
- \* Single channel.
- \* Also available-multi-channel

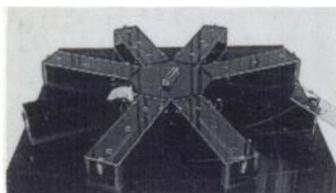
## 256 POINT THERMOMETER



FDA registered for human use

- \* Interface to IBM-PC for 1 to 256 thermocouples.
- \* Variety of temp. probes (rectal, skin, implantable).
- \* Software provides graphics and real-time plotting.
- \* Also special software for Pyrogenic Activity studies.

## MAZES -- "FIGURE 8" AND "RADIAL ARM"



- \* Computerized system with universal maze software (for IBM-PC) monitors interruption of 128 IR sensors.
- \* Data LOTUS 1-2-3 compatible.

## VIDEO TRACKERS FOR WATER MAZES



- \* Measures activity, distance traveled, pattern of movement, & rotations of multiple animals w/ 1 TV camera.
- \* Vertical activity (3-D) measurements w/ 2 cameras.
- \* Ideal for water maze, human and animal gait analysis.

For our complete catalog please contact: **Columbus Instruments International Corp.**

**P.O. Box 44049 Columbus, Ohio 43204 USA**

PH: (614) 488-6176 FAX: (614) 276-0529 TLX: 246514 Toll Free: 1-800-669-5011