Volume 235
OCTOBER–DECEMBER
1985

The Journal of PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

A Publication of The American Society for Pharmacology and Experimental Therapeutics

Founded by John J. Abel 1909

EDITOR

Eva King Killam

ASSISTANT EDITOR

Mannfred A. Hollinger

EDITORS FOR SPECIFIC FIELDS

Analgesia and Drug Abuse
Joseph Cochin

Autonomic Pharmacology
Joseph J. McPhillips
Robert E. Stitzel

Behavioral Pharmacology
John A. Harvey

Cardiovascular Pharmacology
Leslie E. Bailey
Henry R. Besch, Jr.
Theodore M. Brody
Sue Piper Duckles

Cell Pharmacology
Toshio Narahashi
George B. Weiss

Chemotherapy
H. George Mandel

Developmental Pharmacology
Bernard L. Mirkin

Drug Metabolism and Disposition
Edward Bresnick
Jordan L. Holtzman

Endocrine Pharmacology
Paula H. Stern

Gastrointestinal Pharmacology
Thomas F. Burks

Immunopharmacology
Sydney Spector

Neuropharmacology
Edmund G. Anderson
S. J. Enna
Charles O. Rutledge

Prostaglandins and Leukotrienes
John C. McGiff

Pulmonary Pharmacology
Mannfred A. Hollinger

Renal Pharmacology
William O. Berndt

Toxicology
Curtis D. Klaassen

EDITORIAL ADVISORY BOARD

Martin W. Adler
Edson X. Albuquerque
Lewis Aronow
Michael D. Bailie
Robert L. Balster
Paul Bass
Michael A. Beaven
John A. Bevan
C. Paul Bianchi
Ruth E. Billings
David A. Blake
Floyd E. Bloom
Gary Brooker
Carl K. Buckner
David B. Bylund
Theodore J. Cicero
Doris H. Clouet
Leonard Cook
Charles R. Craig
E. E. Daniel
William C. de Groat
Louis Diamond
Gerald F. DiBona
Robert J. Dinerstein
Walter R. Dixon
James S. Douglas
J. W. Downie
Linda Dykstra
Hugh L. Evans
James A. Ferrendelli
Gregory D. Fink
Lawrence J. Fischer
Ray W. Fuller
Timothy S. Gaginella
Gerard L. Gebber
James W. Gibb
Shri N. Giri
Frank R. Goodman
Charles W. Gorodetzky
Theodore E. Gram
Thomas P. Green
Garrett J. Gross
A. James Hance
T. Kendall Harden
Harold F. Hardman
Louis S. Harris
R. Adron Harris
Richard J. Head
William R. Hewitt
Stephen G. Holtzman
Jerry B. Hook
David M. Jacobowitz
Barbara A. Jakschik
Donald R. Jasinski
E. H. Jeffery
Alain F. Junod
George J. Kaloyanides
Conan Kornetsky
Edwin A. Kroeger
Tony J.-F. Lee
Roberto Levi
Wayne Levin
Louis Levy
George E. Lindenmayer
Stephen L. Lipsius
Walter Lovenberg
Benedict R. Lucchesi
K. U. Malik
William D. Matthews
Thomas A. McCalden
Donald E. McMillan
Joseph J. McPhillips
Jerry Mitchell
Perry B. Molinoff
W. H. Morse
Kevin Mullane
Jose M. Musacchio
Mary J. Mycek
Robert A. Neal
Philip Needleman
Robert F. O'Dea
Achilles J. Pappano
William A. Pettinger
Larissa A. Pohorecky
Donald V. Priola
Russell A. Prough
James W. Putney, Jr.
Arthur Raines
Carl E. Rosow
C. R. Ross
Ronald P. Rubin
Robert R. Ruffolo, Jr.
Betty I. Sasyniuk
Arnold Schwartz
Lewis S. Seiden
Eric J. Simon
Roger P. Smith
Roger D. Spealman
John L. Sutko
Boris Tabakoff
Robert I. Taber
A. E. Takemori
Robert E. Ten Eick
Thomas R. Tephly
Richard E. Tessel
C. D. Thron
U. Trendelenburg
Betty M. Twarog
Norman J. Uretsky
Ladislav Volicer
Martin A. Wasserman
I. M. Weiner
Benjamin Weiss
Richard M. Welch
David P. Westfall
Grant R. Wilkinson
Martin M. Winbury
Barry B. Wolfe
Ben G. Zimmerman

BOARD OF PUBLICATIONS TRUSTEES

William W. Fleming, *Chairman:* James A. Bain, Joseph R. Bianchine, Joel G. Hardman, Eva King Killam, Bettie Sue Masters Jerry R. Mitchell, Marcus M. Reidenberg, Irving I. A. Tabachnick, Palmer W. Taylor, Vincent G. Zannoni

EXECUTIVE OFFICER OF THE SOCIETY

Kay Croker

THE JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS (ISSN 0022-3565) is published monthly by The American Society for Pharmacology and Experimental Therapeutics, 428 E. Preston Street, Baltimore, MD 21202. Second class postage paid at Baltimore, MD and at additional mailing offices. POSTMASTER: Send address changes (Form 3579) to Williams & Wilkins, 428 E. Preston St., Baltimore, MD 21202. Indexed by *Current Contents* and *Index Medicus*. Subscription rates $140.00 ($170.00 foreign); institutions $220.00 ($250 foreign) single copy $16.00 ($19.00 foreign). (Prices subject to change.) Copyright © 1985 by The American Society for Pharmacology and Experimental Therapeutics