

Volume 245
APRIL-JUNE
1988

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

William L. Dewey

Autonomic Pharmacology

Robert R. Ruffolo, Jr.

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

Ronald P. Rubin

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

David B. Bylund

S. J. Enna

Charles O. Rutledge

Prostaglandins and Leukotrienes

Guy C. Le Breton

John C. McGiff

Pulmonary Pharmacology

Mannfred A. Hollinger

Renal Pharmacology

William O. Berndt

Toxicology

Curtis D. Klaassen

EDITORIAL ADVISORY BOARD

Margaret Acara

Martin W. Adler

Edson X. Albuquerque

James B. Appel

Lewis Aronow

Michael D. Bailie

Robert L. Balster

Paul Bass

Michael A. Beaven

John A. Bevan

C. Paul Bianchi

David A. Blake

Floyd E. Bloom

Gary Brooker

Carl K. Buckner

Theodore J. Cicero

Doris H. Clouet

Marlene L. Cohen

Charles R. Craig

Luigi X. Cubeddu

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

Gregory D. Fink

Lawrence J. Fischer

Garret A. FitzGerald

Ray W. Fuller

Timothy S. Gaginella

Gerard L. Gebber

James W. Gibb

Shri N. Giri

Frank R. Goodman

Charles W. Gorodetzky

Thomas P. Green

Garrett J. Gross

T. Kendall Harden

R. Adron Harris

Richard J. Head

William R. Hewitt

J. Paul Hieble

Stephen G. Holtzman

Jerry B. Hook

Donald R. Jasinski

E. H. Jeffery

Robert M. Joy

Alain F. Junod

George J. Kaloyanides

Conan Kornetsky

Edwin A. Kroeger

Tony J.-F. Lee

Roberto Levi

George E. Lindenmayer

Stephen L. Lipsius

Horace H. Loh

Benedict R. Lucchesi

K. U. Malik

William D. Matthews

Thomas A. McCalden

Donald E. McMillan

Jerry Mitchell

Perry B. Molinoff

W. H. Morse

Hasan Mukhtar

Kevin Mullane

L. Charles Murrin

Jose M. Musacchio

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

C. R. Ross

Betty I. Sasyniuk

Arnold Schwartz

Lewis S. Seiden

David J. Smith

Roger P. Smith

Roger D. Speakman

John L. Sutko

Boris Tabakoff

A. E. Takemori

David A. Taylor

Robert E. Ten Eick

Thomas R. Tephly

Richard E. Tessel

Martin J. M. C. Thoolen

Pieter V. M. W. M. Timmermans

Theodore J. Torphy

U. Trendelenburg

Norman J. Uretsky

Ralph Vinegar

Ladislav Volicer

Larry A. Walker

Martin A. Wasserman

I. M. Weiner

Benjamin Weiss

Richard M. Welch

David P. Westfall

Grant R. Wilkinson

Michael Williams

Martin M. Winbury

Barry B. Wolfe

Henry I. Yamamura

Ben G. Zimmerman

BOARD OF PUBLICATIONS TRUSTEES

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

EXECUTIVE OFFICER OF THE SOCIETY

Kay A. 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 to THE JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS, 428 E. Preston St., Baltimore, MD 21202. Indexed by *Current Contents* and *Index Medicus*. Subscription rates \$140.00 (\$170.00 foreign, \$234 Japan); institutions \$220.00 (\$250 foreign, \$314.00 Japan) single copy \$16.00 (\$19.00 foreign). (Japanese rates include air freight.) Prices are subject to change. Copyright © 1988 by The American Society for Pharmacology and Experimental Therapeutics.