

# JOURNAL OF PHARMACEUTICAL SCIENCES



1983  
Volume 72

A publication of the American Pharmaceutical Association

Sharon G. Boots  
*Editor*

Nancy E. Brown  
*Production Editor*

Edward G. Feldmann  
*Contributing Editor*

Sue A. Kruger  
*Copy Editor*

Samuel W. Goldstein  
*Contributing Editor*

Belle R. Beck  
*Editorial Secretary*

Neil Minihan  
*Director of Publications*

## Editorial Advisory Board

Kenneth A. Connors  
Louis Diamond  
Milo Gibaldi  
Everett N. Hiestand

W. Homer Lawrence  
Ian W. Mathison  
Edward G. Rippie  
Paul L. Schiff, Jr.

The *Journal of Pharmaceutical Sciences* (ISSN 0022-3549) is published monthly by the American Pharmaceutical Association (APhA) at 2215 Constitution Ave., N.W., Washington, DC 20037. Second-class postage paid at Washington, D.C. and at additional mailing office.

All expressions of opinion and statements of supposed fact appearing in articles or editorials carried in this journal are published on the authority of the writer over whose name they appear and are not to be regarded as necessarily expressing the policies or views of APhA.

**Offices**—Editorial, Advertising, and Subscription: 2215 Constitution Ave., N.W., Washington, DC 20037. All Journal staff may be contacted at this address. Printing: 20th & Northampton Streets, Easton, PA 18042.

**Annual Subscriptions**—United States and foreign, industrial and government institutions \$75; educational institutions \$75; individuals *for personal use only* \$40; single copies \$10. APhA and SAPHA members may subscribe to *J. Pharm. Sci.* for \$20.00 per year. All foreign subscriptions add \$10 for postage. Subscription rates are subject to change without notice.

**Claims**—Missing numbers will not be supplied if dues or subscriptions are in arrears for more than 60 days or if claims are received more than 60 days after the date of the issue, or if loss was due to failure to give notice of change of address. APhA cannot accept responsibility for foreign delivery when its records indicate shipment was made.

**Change of Address**—Members and subscribers

should notify at once both the Post Office and APhA of any change of address.

**Photocopying**—The code at the foot of the first page of an article indicates that APhA has granted permission for copying of the article beyond the limits permitted by Sections 107 and 108 of the U.S. Copyright Law provided that the copier sends the per copy fee stated in the code to the Copyright Clearance Center, Inc., 21 Congress St., Salem, MA 01970. Copies may be made for personal or internal use only and not for general distribution.

**Microfilm**—Available from University Microfilms International, 300 N. Zeeb Road, Ann Arbor, MI 48106.

© Copyright 1983, American Pharmaceutical Association, 2215 Constitution Ave., N.W., Washington, DC 20037; all rights reserved.