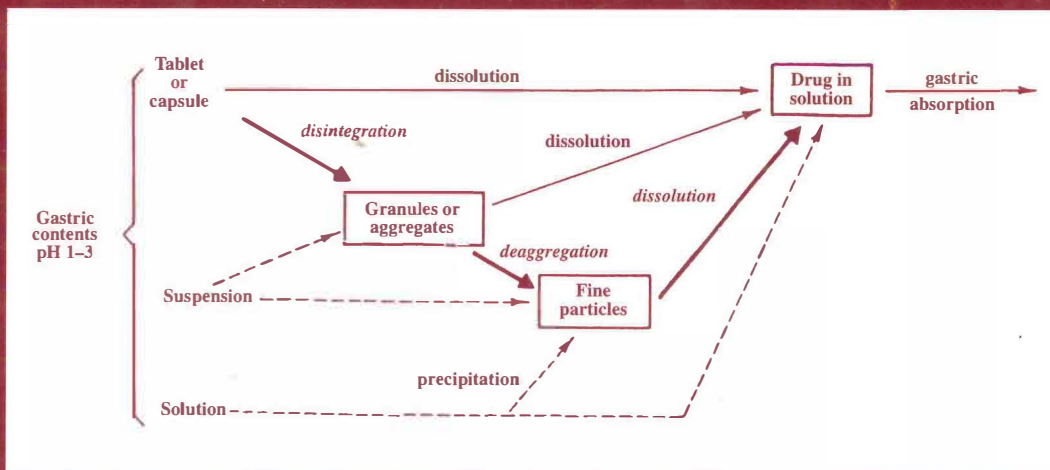


# Modern Pharmaceutics

Fourth Edition, Revised and Expanded



edited by  
Gilbert S. Banker  
Christopher T. Rhodes

BMS 2019

# Modern Pharmaceuticals

# Modern Pharmaceutics

Fourth Edition, Revised and Expanded

edited by  
Gilbert S. Banker  
*University of Iowa*  
*Iowa City, Iowa*

Christopher T. Rhodes  
*University of Rhode Island*  
*Kingston, Rhode Island*



MARCEL DEKKER, INC.

NEW YORK • BASEL

**DOCKET  
ALARM**

Find authenticated court documents without watermarks at [docketalarm.com](http://docketalarm.com).

**ISBN: 0-8247-0674-9**

This book is printed on acid-free paper.

**Headquarters**

Marcel Dekker, Inc.  
270 Madison Avenue, New York, NY 10016  
tel: 212-696-9000; fax: 212-685-4540

**Eastern Hemisphere Distribution**

Marcel Dekker AG  
Hutgasse 4, Postfach 812, CH-4001 Basel, Switzerland  
tel: 41-61-261-8482; fax: 41-61-261-8896

**World Wide Web**

<http://www.dekker.com>

The publisher offers discounts on this book when ordered in bulk quantities. For more information, write to Special Sales/ Professional Marketing at the headquarters address above.

**Copyright © 2002 by Marcel Dekker, Inc. All Rights Reserved.**

Neither this book nor any part may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, microfilming, and recording, or by any information storage and retrieval system, without permission in writing from the publisher.

Current printing (last digit):

10 9 8 7 6 5 4 3 2 1

**PRINTED IN THE UNITED STATES OF AMERICA**

## Contents

<i>Preface</i>	<i>iii</i>
<i>Contributors</i>	<i>ix</i>
1. Drug Products: Their Role in the Treatment of Disease, Their Quality, and Their Status and Future as Drug-Delivery Systems <i>Gilbert S. Banker</i>	1
2. Principles of Drug Absorption <i>Michael Mayersohn</i>	23
3. Pharmacokinetics <i>David W. A. Bourne</i>	67
4. Factors Influencing Drug Absorption and Drug Availability <i>Betty-ann Hoener and Leslie Z. Benet</i>	93
5. The Effect of Route of Administration and Distribution on Drug Action <i>Svein Øie and Leslie Z. Benet</i>	119
6. Chemical Kinetics and Drug Stability <i>J. Keith Guillory and Rolland I. Poust</i>	139
7. Preformulation <i>Jens T. Carstensen</i>	167
8. Cutaneous and Transdermal Delivery—Processes and Systems of Delivery <i>Gordon L. Flynn</i>	187
9. Disperse Systems <i>Wandee Im-Emsap, Ornlaksana Paeratakul, and Juergen Siepmann</i>	237

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.