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Developing Solid Oral Dosage Forms

Pharmaceutical Theory and Practice



DEVELOPING SOLID ORAL DOSAGE FORMS: PHARMACEUTICAL THEORY AND PRACTICE

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DEVELOPING SOLID ORAL DOSAGE FORMS: PHARMACEUTICAL THEORY AND PRACTICE

*This work is dedicated to Drs R.D. Schoenwald, J. Keith Guillory, L.E. Matheson, E.L. Parrott, D.R. Flanagan,
D.E. Wurster, P. Veng-Pedersen and the late D.J.W. Grant*

*By generously sharing their experience, time and wisdom, what they've taught us is well beyond
what we learned in school*

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Foreword

Physical pharmacy, the application of physico-chemical principles to the solution of problems related to dosage forms is, as a discipline, rapidly disappearing from curricula in colleges of pharmacy. It is being replaced by an emphasis on communication skills and pharmacotherapeutics. Biopharmaceutics and pharmacokinetics, sciences that arose from the efforts of such early physical pharmacists as Sidney Riegelman, Milo Gibaldi, Gary Levy, John Wagner and Edward Garrett, are still considered essential, at least for the present. In graduate programs in pharmaceutics, physical pharmacy has taken a back seat to such fashionable and fundable areas as genetics and tissue scaffolding. Yet, the demand for the skills of the physical pharmacist remains strong in the pharmaceutical industry. That is why this textbook fills an important need.

Scientists entering the pharmaceutical industry today often lack the fundamental knowledge that is reflected in the chapters contained in this book. Many of the researchers entering industry have backgrounds in chemical engineering or organic chemistry. Their exposure to the principles of physical pharmacy is a deficit that must be overcome by on-the-job training

and by extensive study. It is in the areas of preformulation, the development of new and sophisticated drug delivery systems, and the day-to-day work of optimizing the effects of new drug entities that this knowledge is most needed. There are, of course, many textbooks that deal with specific subjects important to the industrial pharmacist, focusing on tablets, capsules, disperse systems, parenterals, etc. However, there is a critical need for a comprehensive treatment of the science underlying each of these special areas, together with practical applications of the science that results in quality dosage forms. Questions related to solubility, dissolution, chemical and physical stability, interfacial phenomena, and the absorption and distribution of drug molecules are common to all. Consequently, a single textbook that brings together experts in all of these subjects can be an invaluable asset to the novice industrial scientist. Each chapter in this book contains a useful bibliography of references that can provide for ready access to current research in the field. We should be grateful that these authors have taken time from their busy schedules to share their knowledge and experience with all of us.

J. Keith Guillory, Ph.D.
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University of Iowa

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