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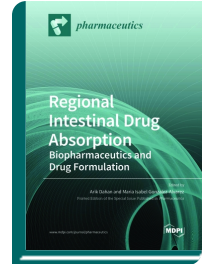
Regional Intestinal Drug Absorption

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The gastrointestinal tract (GIT) can be broadly divided into several regions: the stomach, the small intestine (which is subdivided to duodenum, jejunum, and ileum), and the colon. The conditions and environment in each of these segments, and even within the segment, are dependent on many factors, e.g., the surrounding pH, fluid composition, transporters expression, metabolic enzymes activity, tight junction resistance, different morphology along the GIT, variable intestinal mucosal cell differentiation, changes in drug concentration (in cases of carrier-mediated transport), thickness and types of mucus, and resident microflora. Each of these variables, alone or in combination with others, can fundamentally alter the solubility/dissolution, the intestinal permeability, and the overall absorption of various drugs. This is the underlying mechanistic basis of regional-dependent intestinal drug absorption, which has led to many attempts to deliver drugs to specific regions throughout the GIT, aiming to optimize drug absorption, bioavailability, pharmacokinetics, and/or pharmacodynamics. In the book "Regional Intestinal Drug Absorption: Biopharmaceutics and Drug Formulation" we aim to highlight the current progress and to provide an overview of the latest developments in the field of regional-dependent intestinal drug absorption and delivery, as well as pointing out the unmet needs of the field.



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