Special Issue

Gastrointestinal Variables and Drug Absorption: Experimental, Computational and In Vitro Predictive Approaches

Message from the Guest Editor

Gastrointestinal (GI) variables dictate the fate of any oral drug product as in vivo product disintegration, dissolution, transit and drug permeation determine absorption rate and extent. Nevertheless, the gut remains as the final frontier at many levels, which will need new navigation methods to unravel how its dynamic changes affect to and are affected by the pharmaceutical product. In the last decades, human intubation studies or dosage-form-like sensors have brought in new information about transit, motility, fluid volumes and composition and a partial picture of the in vivo dissolution process while non-invasive methods, such as MRI, are being validated for the same purpose. Combined with computational fluid dynamic experiments, these methods will permit the design of new dissolution devices covering the adequate range of critical variables adapted to all BCS classes as drug-product development tools and, eventually, bioequivalence test devices. The aim of this Special Issue is to highlight the latest developments in oral biopharmaceutics from the experimental methods to study GI variables to its application to in vivo predictive tools and models.

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