Special Issue

The Latest Technology for the Prediction and Improvement of Drug Absorption

Message from the Guest Editors

In the past decade, drugs have been developed to accommodate a wide range of small- (about 500 Da), medium-, and large-molecule candidates. Oral administration is the most convenient way for patients to take medications, and leads to high adherence. To determine the feasibility of developing a candidate as an oral drug, appropriate methods are required for predicting intestinal absorption. First, we focus on methods that use human intestinal tissue. Next, we introduce new findings on co-cultured models that use Caco-2 cells, and on in silico systems. These alternative in vitro methods are not only convenient for predicting intestinal drug absorption, but can also be used in a variety of research locations without strict controls, such as ethical and biosafety assessments. On the other hand, it is necessary to develop an oral absorption improvement technique that enables the intestinal absorption of medium- and large-molecule drugs; such technology should facilitate the development of these drugs. Therefore, we also introduce recent advances in nanocrystal systems.

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