

Improvement of Oral and Transmucosal Absorption of Poorly Absorbable Drugs

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In general, drugs should be absorbed from each administration site and should be reached to the systemic circulation in order to elicit their pharmacological activities. However, the absorption of some drugs, which have high molecular weight and hydrophilic characteristics is usually very poor after their oral and transmucosal administration. Especially, the oral and transmucosal absorption of peptide and protein drugs are typically very poor, although they are recently discovered and will be applied in clinical use. These peptide and protein drugs include insulin, calcitonin, and interferon. Therefore, various approaches and strategies have been examined to improve the oral and transmucosal absorption of these drugs. These approaches include (1) to use additives such as absorption enhancers and protease inhibitors, (2) to develop an administration method that can serve as an alternative to oral and injection administration, (3) to modify the chemical and molecular structure of these drugs to produce prodrugs and analogues, (4) to use dosage form to these drugs. In this symposium, we invited some researchers who are expert in this field and they will give us some talk about the improvement of oral and transmucosal absorption of poorly absorbable drugs. They will also discuss about the present status and future prospect of oral and transmucosal delivery of these poorly absorbable drugs.