

The oral route is the most preferred route for systemic and local drug delivery. However, the oral drug delivery system faces the harsh physiological and physicochemical environment of the gastrointestinal tract, which limits the bioavailability and targeted design of the oral drug delivery system. Innovative pharmaceutical approaches including nanoparticulate formulations, biomimetic drug formulations, and microfabricated devices have been explored to optimize drug targeting and bioavailability. In this review, the anatomical factors, biochemical factors, and physiological factors that influence delivering drugs via the oral route are discussed and recent advances in conventional and novel oral drug delivery approaches for improving drug bioavailability and targeting ability are highlighted. We also address the challenges and opportunities of oral drug delivery systems in the future <sup>1)</sup>.

<sup>1)</sup>

Lou J, Duan H, Qin Q, Teng Z, Gan F, Zhou X, Zhou X. Advances in Oral Drug Delivery Systems: Challenges and Opportunities. *Pharmaceutics*. 2023 Feb 1;15(2):484. doi: 10.3390/pharmaceutics15020484. PMID: 36839807.

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