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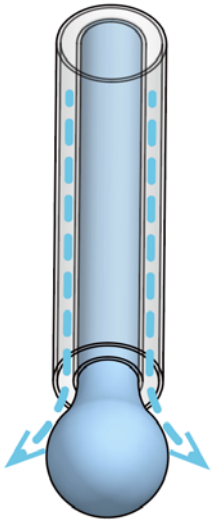
Microencapsulation and characterization of controlled-release intestinal drugs: a critical review

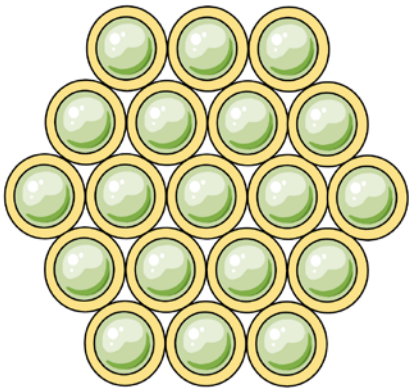
Key words: Oral drug; Controlled release; Microencapsulated intestinal drug; Microencapsulation method; Response mechanism

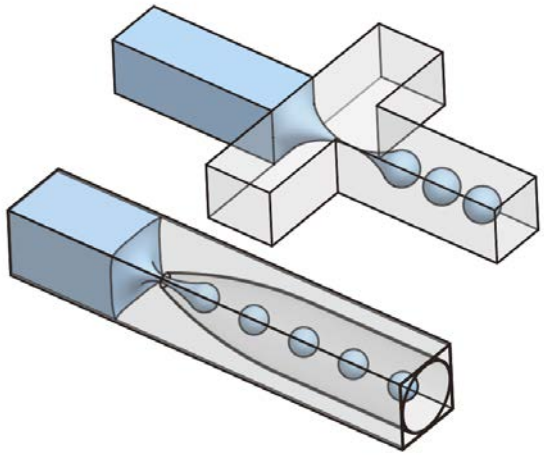
Research Summary

This review mainly focused on the preparation, release mechanism, and evaluation strategies of microencapsulated intestinal drugs (MeIDs), and summarized their key roles in the following aspects:

- **Preparation Techniques**
- **Release Mechanisms**
- **Evaluation Strategies**

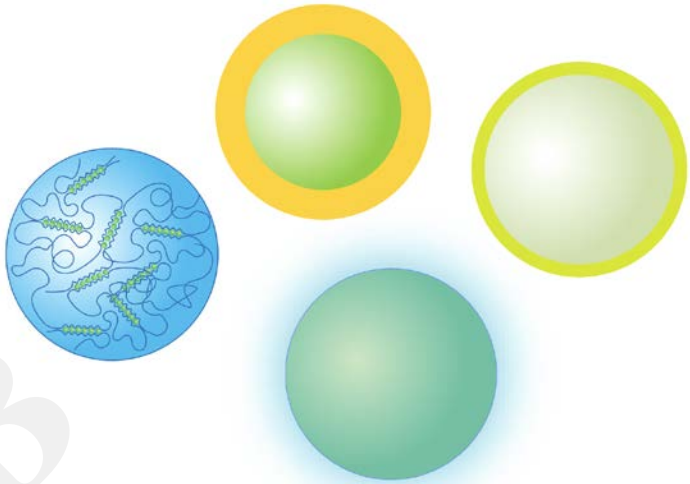




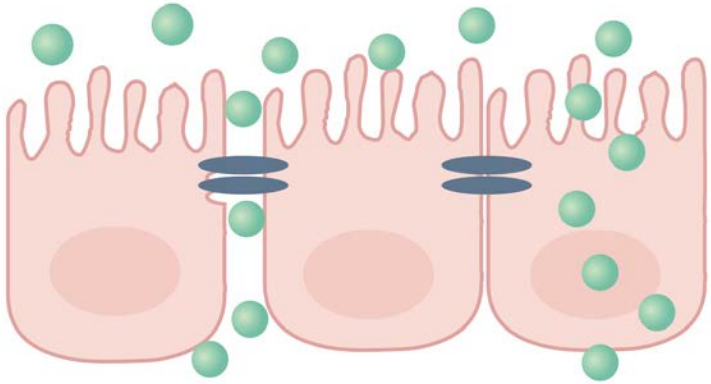


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Innovation points



- **Introduction** of current microencapsulation strategies for oral intestinal drug delivery, covering emulsion preparation, microencapsulation, and material selection.
- **Summary** of recent advances in evaluating microencapsulated drug systems, including biocompatibility testing, release kinetics analysis, and in vivo pharmacodynamic studies.
- **Emphasis** on the synergistic use of coating methods, micro/nano-carriers, and absorption enhancers to enhance formulation stability, bioavailability, and targeted delivery efficiency.



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Innovation points

A series of comprehensive tables were generated to summarize recent progress in microencapsulation strategies for oral intestinal drug delivery.

Table 1 | Summary and comparison of various droplet dispersion methods.

Table 2 | Preparation methods and characteristics of MeID.

Table 3 | Mathematic models for drug release kinetics.

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