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Oral bioavailability of curcumin: problems and advancements

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Abstract

Curcumin is a natural compound of *Curcuma longa* L. and has shown many pharmacological activities such as anti-inflammatory, anti-oxidant in both preclinical and clinical studies. Moreover, curcumin has hepatoprotective, neuroprotective activities and protects against myocardial infarction. Particularly, curcumin has also demonstrated favorite anticancer efficacy. But limiting factors such as its extremely low oral bioavailability hampers its application as therapeutic agent. Therefore, many technologies have been developed and applied to overcome this limitation. This review described the main physicochemical properties of curcumin and summarized the recent studies in the design and development of oral delivery systems for curcumin to enhance the solubility and oral bioavailability, including liposomes, nanoparticles and polymeric micelles, phospholipid complexes, and microemulsions.

Keywords: Curcumin; liposomes; nanoparticles; oral bioavailability.

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