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Oral films as breakthrough tools for oral delivery of proteins/peptides

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Abstract

Therapeutic proteins and peptides demonstrate unique, peerless, pharmacological characteristics such as high specificity to receptors and superior biological mimicking of physiological mechanisms, resulting in a better therapeutic index compared to conventional chemical-derived drugs. However, proteins also present inherent bioavailability limitations. Thus, this paper proposes several effective tools to improve protein/peptide drugs stability, permeability and pharmacokinetics with special emphasis on oral polymeric films as oral delivery platforms. Indeed, oral films present inherent characteristics that can greatly enhance biological performance of proteins and peptides and patient compliance along with other advantages that are critically this review. A rational choice of excipients addressed in and manufacture processes are also focused. In addition, possible toxicity issues to be overtaken and critical analysis regarding current market tendencies respecting oral films and protein/peptides along with future prospects are disclosed.

Keywords: bioactive peptides; bioactive proteins; bioavailability enhancement; oral delivery; Oral films; stability;

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