

Oral Delivery of Glucagon-Like Peptide-1 and Analogs: Alternatives for Diabetes Control?

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Abstract

Type 2 diabetes mellitus (T2DM) is one of the most prevalent diseases worldwide. Current treatments are often associated with off-target effects and do not significantly impact disease progression. New therapies are therefore urgently needed to overcome this social burden. Glucagon-like peptide-1 (GLP-1), an incretin hormone, has been used to control T2DM symptomatology. However, the administration of peptide or proteins drugs is still a huge challenge in the pharmaceutical field, requiring administration by parenteral routes. This article reviews the main hurdles in oral administration of GLP-1 and focuses on the strategies utilized to overcome them.

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Abbreviations: (AUC) area under the curve, (DPP-4) dipeptidyl peptidase-4, (GI) gastrointestinal, (GLP-1) glucagon-like peptide-1, (GLP-1R) glucagon-like peptide-1 receptor, (PEG) polyethylene glycol, (PLGA) polylactide-co-glycolide, (T2DM) type 2 diabetes mellitus, (TJ) tight junction

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