



Gut Microbiota Targeted Approach by Natural Products in Diabetes Management: An Overview

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Abstract

Purpose of Review This review delves into the complex interplay between obesity-induced gut microbiota dysbiosis and the progression of type 2 diabetes mellitus (T2DM), highlighting the potential of natural products in mitigating these effects. By integrating recent epidemiological data, we aim to provide a nuanced understanding of how obesity exacerbates T2DM through gut flora alterations.

Recent Findings Advances in research have underscored the significance of bioactive ingredients in natural foods, capable of restoring gut microbiota balance, thus offering a promising approach to manage diabetes in the context of obesity. These findings build upon the traditional use of medicinal plants in diabetes treatment, suggesting a deeper exploration of their mechanisms of action.

Summary This comprehensive manuscript underscores the critical role of targeting gut microbiota dysbiosis in obesity-related T2DM management and by bridging traditional knowledge with current scientific evidence; we highlighted the need for continued research into natural products as a complementary strategy for comprehensive diabetes care.

Keywords Bioactive compounds · Diabetes mellitus · Gut microbiota · Inflammation · Molecular mechanisms · Natural products

Introduction

Diabetes mellitus has emerged as one of the most pressing public health issues of the twenty-first century [1••]. According to global estimates, approximately 422 million

adults were living with diabetes in 2019, and this number is projected to soar to 551.8 million by 2030 [2•]. The condition is not only accompanied by debilitating microvascular and macrovascular complications but also exerts an immense toll on healthcare systems globally

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