

A Comprehensive Review on Nutraceuticals

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Abstract: *Nutraceuticals, a hybrid of “nutrition” and “pharmaceuticals,” have emerged as a significant component of modern healthcare, offering health benefits beyond basic nutrition. These bioactive compounds, derived from natural sources such as plants, marine organisms, and fermented foods, play a crucial role in disease prevention and health promotion. Increasing scientific evidence suggests that nutraceuticals exert therapeutic effects through antioxidative, anti-inflammatory, and immunomodulatory mechanisms, making them valuable in the management of chronic conditions such as cardiovascular diseases, diabetes, neurodegenerative disorders, and cancer. Despite their growing popularity, challenges persist in the regulation, standardization, and clinical validation of nutraceuticals, limiting their integration into mainstream medical practice. This review provides a comprehensive analysis of nutraceutical classification, mechanisms of action, therapeutic applications, and regulatory challenges, highlighting the need for further research to establish their efficacy, safety, and long-term benefits*

Keywords: Nutraceuticals, functional foods, bioactive compounds, chronic disease prevention, health benefits, regulation

