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Editorial

Closing Editorial: New Insights into Food Ingredients for Human Health Promotion

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1. Introduction

In recent years, the intersection of food science and health promotion has gained interest. Driven by consumer awareness and a global push toward healthier, safer, and more sustainable food systems, the demand for functional, fortified, and clean-label products has grown substantially. In response to these evolving expectations, this Special Issue of *Applied Sciences*, titled "New Insights into Food Ingredients for Human Health Promotion", brings together research and review articles that explore the development, characterization, and application of bioactive compounds with the potential to promote human health. These contributions reflect a commitment to innovation in food ingredient science, offering solutions that are both effective and aligned with the Sustainable Development Goals.

2. Overview of Contributions

The six articles featured in this Special Issue explore a broad range of functional food ingredients. The contributions in this Special Issue addressed key themes such as novel bioactive sources, ingredient characterization, and delivery strategies for health-promoting compounds. Different sources of functional ingredients were explored: from wild carob pulp rich in phenolic compounds and antioxidants sourced from the Mediterranean countries to the *Hypericum perforatum* essential oil from Bulgaria with promising biological activities. The role of seaweed-derived ingredients, such as *Durvillaea antarctica* meal, was also evaluated for its potential to enhance the nutritional profile and functionality of traditional meat products. Furthermore, this Special Issue highlighted studies investigating both probiotic Lactobacillus strains and the integration of prebiotics in plant-based functional foods. Novel encapsulation systems were also featured, including modified cellulose nanocrystals for controlled delivery of cannabigerol, demonstrating advanced strategies for the management of intestinal inflammation. These studies exemplify how natural and sustainable ingredients can be valorized for their health-promoting potential.

3. Conclusions

The Special Issue highlighted the importance of formulation and delivery strategies in maximizing the bioavailability and stability of sensitive compounds such as polyphenols or probiotics. As the food industry continues to adapt to evolving consumer expectations and regulatory frameworks, innovation at the ingredient level will remain a cornerstone of product development. The insights presented in this Special Issue not only expand the

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scientific understanding of bioactive ingredients but also serve as a foundation for the next generation of health-oriented, sustainable food solutions.

As Guest Editors, we thank all authors, reviewers, and contributors for their commitment to scientific excellence and innovation. We hope this collection inspires further interdisciplinary research that aligns with the mission of *Applied Sciences*: advancing science and technology to meet real-world challenges with practical and scalable solutions.

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