

## INTELLIGENT OPPORTUNITIES TO USE BETA GLUCANS FOR YOUR WELL-BEING

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$\beta$ -glucans are polymers of glucose with different glycosidic linkages. Most  $\beta$ -glucans play a crucial role in cell wall structure, while others are used as an energy source for metabolism. Despite their simple monosaccharide composition, glucans show a different structural variability.  $\beta$ -glucans are recognized as biologically active substances with immunomodulatory, antioxidant, anti-inflammatory, antitumor properties, normalize cholesterol and glucose.

According to the document published by EFSA (European Food Safety Authority) in 2011, „Scientific opinion on the safety of 'beta-glucans from yeast' as a novel food ingredient”,  $\beta$ -glucans have been recognized as safe products that can be used both in soluble form as well as in insoluble form. For dietary supplements or foods intended for special nutritional uses, a daily dose of 375 mg to 600 mg is recommended. Following this opinion, the European Union adopted Decision (EU) 2017/2048 in 2017, which extended the use of beta-glucans from the yeast *S. cerevisiae* to other foods, such as juices (1.3 g/kg), breakfast cereals (15.3g/kg), biscuits (6.7 g/kg), powdered milk (25.5 g/kg) and dairy products (3.8 g/kg). This European Union decision was revised in 2019 and added the required purity of  $\beta$ -glucans, which must be greater than 80%. Similarly, more products have been added where the use of beta-glucans is allowed, such as: fermented dairy products, soups, cereal bars, chocolate and sweets, marmalade, jam, and other fruit spreads. At the same time, it should be noted that the structure of  $\beta$ -glucans is very different depending on the source of origin.  $\beta$ -glucans are among the compounds that will be increasingly studied for their potential applications in various industrial sectors. This is supported by scientific studies that highlight their diverse multifunctional properties; by the growing trend of consumers preferring „clean label” products without additives and other factors leading to the development of new functional ingredients such as  $\beta$ -glucans.

Currently,  $\beta$ -glucans have a wide range of applications in the food, pharmaceutical and cosmetic industries. However, their potential is not yet fully realized. Further research is needed to optimize the extraction, purification, drying and utilization of  $\beta$ -glucans in different fields.

**Acknowledgments:** This study was supported by the research project „Valorisation de coproduits vinicoles moldaves: identification et caractérisation d'agents multifonctionnels”, funded the Francophone University Agency (AUF) and through the State Project 20.80009.5107.10 „Personalized nutrition and smart technologies for my well-being”.

**Keywords:**  $\beta$ -glucans, extraction, value-added products, valorization.