

## Functional Beverage to Boosting Immune System in Elderly

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**Abstract :** The SARS-Cov-2 pandemic has exposed our vulnerability to new illnesses and novel viruses that attack our immune systems, particularly in the elderly. The vaccine is being gradually introduced over the world, but new strains of the virus and COVID-19 will emerge and continue to cause illness. Aging is associated with significant changes in intestinal physiology, which increases the production of inflammatory products, alters the gut microbiota, and consequently establish inadequate immune response to minimize symptoms and disease development. In this context, older people who followed a Mediterranean-style diet, rich in polyphenols and dietary fiber, performed better physically and mentally (1,2). This demonstrates the importance of the human gut microbiome in transforming complex dietary macromolecules into the most biologically available and active nutrients, which in turn help to regulate metabolism and both intestinal and systemic immune function (3,4). The role of lactic acid fermentation is prominent also as a powerful tool for improving the nutritional quality of the human diet by releasing nutrients and boosting the complex bioactive compounds and vitamin content. the PhD project aims to design fermented and functional foods/beverages capable of modulating human immune function via the gut microbiome.

**Keywords :** functional bevarage, fermented beverage, gut microbiota functionality, immun system

**Conference Title :** ICM 2022 : International Conference on Microbiome

**Conference Location :** Amsterdam, Netherlands

**Conference Dates :** December 02-03, 2022