

Allegato B - DESCRIZIONE DELLA PROPOSTA PROGETTUALE

1) GENERAL INFORMATION

Project acronym:	NUTRIFY
Project title (extended name):	Nutrient Uptake Treatment with Postbiotics for Improved Functionality
Spoke:	6
Duration (months):	15 months
Total project budget (€):	409.499,50 €
Total grant requested (€):	498.527,50 €
Project Coordinator:	<i>Marcello Chieppa, University of Salento Department of Experimental Medicine marcello.chieppa@unisalento.it +39 0832 29 8869</i>
Abstract (max 1500 characters including spaces):	
<p>The NUTRIFY project aims to combat secondary protein-energy undernutrition through a unique postbiotic-based dietary supplement, targeting the intricate interplay between undernutrition and intestinal health. The project's focus is on restoring intestinal barrier integrity and function and prevent frailty utilizing beneficial metabolites known as postbiotics released during probiotic fermentation. Objectives include developing an innovative postbiotic formulation for enhanced protein absorption, validated through pre-clinical murine models simulating dietary-induced and disease-associated undernutrition. Leveraging Next-Generation Sequencing, a metagenomic and Bioinformatic tool will assess postbiotic effects on gut microbiota, establishing significant correlations between microbial diversity and biomarker variations. The project innovatively addresses undernutrition using postbiotics, promising safe and immediate reparative action without live bacteria risks. The targeted approach aims to significantly reduce poor clinical outcomes in the European elderly and fragile population affected by undernutrition. Starting at TRL 3, NUTRIFY plans to reach TRL 5, with a pilot formulation preparing for future translation in clinical applications. The advanced methodology integrates metabolomics, lipidomics, and microbiome sequencing to elucidate undernutrition mechanisms and assess postbiotic efficacy, marking a pioneering approach to a pressing global health challenge.</p>	
Keywords (Free Keywords that mainly characterize the project):	
Postbiotics, Undernutrition, Metagenomics, Lipidomics, Metabolomics, Innovative Food Supplement, Microbiota Studies, Protein Malnutrition.	
DNSH Principle:	
The NUTRIFY project is committed to adhering to the Do No Significant Harm (DNSH) principles, minimizing environmental impact. Through advanced fermentation techniques and optimized formulations, it aims to reduce energy consumption and greenhouse gas emissions through an	

integration of circular economy, green chemistry and human health. NUTRIFY emphasizes sustainable practices, such as efficient resource utilization and recycling, preferring fructooligosaccharides coming from circular economy sources. Furthermore, NUTRIFY ensures that its activities do not negatively impact biodiversity and ecosystems, using GRAS microorganisms that are safe to humans. The research and testing phases, conducted under controlled conditions, avoid any adverse effects on natural habitats, preserving both flora and fauna and releasing into the environment, through body waste, only natural products. . The project's focus on health and nutrition aligns with the environmental goal of reducing the carbon footprint by reducing the load on the public health system. In summary, NUTRIFY aligns with DNSH by prioritizing sustainability, efficient resource use, and a reduced ecological footprint in the development of its innovative food supplement.