

Psychobiotics Regulate the Anxiety Symptoms in Carriers of Allele A of IL-1 β Gene: A Randomized, Placebo-Controlled Clinical Trial

P. Gualtieri ¹, M. Marchetti ^{1,2}, G. Cioccoloni ³, A. De Lorenzo ^{1,4}, L. Romano ^{1,2,*}, A. Cammarano ⁵,
C. Colica ⁶, R. Condò ⁷ and L. Di Renzo ¹

¹ Section of Clinical Nutrition and Nutrigenomic, Department of Biomedicine and Prevention, University of Rome Tor Vergata, Via Montpellier 1, 00133 Rome, Italy

² School of Specialization in Food Sciences, University of Rome Tor Vergata, Rome, Italy

³ PhD School of Applied Medical-Surgical Sciences, University of Rome Tor Vergata, Via Montpellier 1, 00133 Rome, Italy

⁴ Casa di Cura Madonna dello Scoglio S.r.l. e SADEL di Salvatore Baffa S.p.a., Cotronei (KR), Italy

⁵ Department of Biomedicine and Prevention, University of Rome Tor Vergata, Via Montpellier 1, 00133 Rome, Italy

⁶ CNR, IBFM UOS of Germaneto, University “Magna Graecia” of Catanzaro, Campus “Salvatore Venuta”, 88100, Germaneto, Catanzaro, Italy

⁷ Department of Clinical Sciences and Translational Medicine, University of Rome Tor Vergata, Via Montpellier 1, 00133 Rome, Italy

* Corresponding author: L. Romano; lorenzo.romano1177@gmail.com

Background:

Probiotic oral intake, via modulation of the microbiota-gut-brain axis, can impact brain activity, mood, and behavior. Inflammatory cytokines can influence the onset and progression of several neurodegenerative mood disorders. The aim of this study was to examine the combined effect of IL-1 β polymorphism and probiotic administration in mood disorder phenotypes.

Methods:

150 subjects were randomized into two different groups, probiotic oral suspension group (POSG) and placebo control group (PCG), and received the relative treatment for 12 weeks. Psychological profile assessment by Hamilton Anxiety Rating Scale (HAM-A), Body Uneasiness Test (BUT), and Symptom Checklist 90-Revised (SCL90R) was administered to all volunteers. Genotyping was performed on DNA extracted from salivary samples.

Results:

After 12 weeks of intervention, a significant reduction of HAM-A total score was detected in the POSG, compared to the PCG. Furthermore, IL-1 β carriers have moderate risk to develop anxiety (OR = 5:90), and in POSG IL-1 β carriers, we observed a reduction of HAM-A score.

Conclusions and Significance:

Consumption of probiotics mitigates anxiety symptoms, especially in healthy adults with the minor A allele of rs16944 as a risk factor. Our results encourage the use of probiotics in anxiety disorders and suggest genetic association studies for psychobiotic personalized therapy.

Keywords:

Probiotic, microbiota-gut-brain axis.

References:

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Thematic Area:

- Microbiome: from Research to Clinics

Infrastructures:

N.A.