



*biology and life  
sciences forum*

Conference Report

---

# Abstracts of the 4th International Electronic Conference on Nutrients (IECN 2024), 16–18 October 2024

---

Mauro Lombardo and Carol Johnston



<https://doi.org/10.3390/blsf2024038002>

#### 4.26. Systematic Review of Clinical Trials on the Potential of Probiotics for the Treatment of COVID-19

Rita Natália Couto Santos<sup>1</sup>, Fernando Xavier Ferreira Moreira<sup>2</sup> and Agostinho Luís Silva Cruz<sup>2</sup>

<sup>1</sup> ESS, Polytechnic Institute of Porto, Rua Dr. António Bernardino de Almeida, 400, 4200-072 Porto, Portugal

<sup>2</sup> LAQV/REQUIMTE, ESS—Polytechnic Institute of Porto, Rua Dr. António Bernardino de Almeida, 400, 4200-072 Porto, Portugal

In recent decades, new deadly coronaviruses causing highly infectious diseases have emerged in human society, resulting in threats to public health and the global economy. In December 2019, in the province of Wuhan, China, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) emerged. This infection was classified as the coronavirus disease 2019 (COVID-19) pandemic. Probiotics are live microorganisms whose administration in adequate quantities has been associated with health benefits for the host, contributing to the treatment and prevention of multiple pathologies. The present study aims to review scientific evidence on the impact of probiotic treatment on the progression of morbidity due to SARS-CoV-2. The research was conducted in the Cochrane Library, Clinical Trials, EBSCO, Medline, Web of Science, and Science Direct databases. Inclusion criteria were as follows: study period between 2019 and 2023; language in English or Portuguese; methodology based on clinical trials; studies in humans with a confirmed diagnosis of SARS-CoV-2 and administration of probiotics in the treatment of the pathology. Five studies were included in this review, recruiting a total of patients ranging from 23 to 300 individuals. The main positive results of the probiotic intervention compared to the control group were nearly an improvement in digestive symptoms (65% vs. 88%,  $p$ -value 0.06) and overall symptoms (88.6% vs. 70.8%;  $p$ -value 0.03). Also, in the probiotic group, there was an increase in serum concentrations of immunoglobulin G (IgG) in the receptor-binding domain/spike 1 (RBD/S1) (225.9 vs. 105.6 binding antibody units/mL,  $p$ -value 0.05). The major limitation is related to the fact that in all five studies, patients were concomitantly treated with several other drugs whose action may have influenced the observed results. The conducted studies suggest that the use of probiotics enhances a decrease in morbidity in SARS-CoV-2, although more studies are needed to confirm their efficacy in the disease.

#### 4.27. The Biochemical Properties of Red Garlic: A Narrative Review of Laboratory Studies

Michele Antonelli<sup>1</sup> and Davide Donelli<sup>2</sup>

<sup>1</sup> Public Health Department, AUSL-IRCCS of Reggio Emilia, Italy

<sup>2</sup> Cardiology Unit, Parma University Hospital, Parma, Italy

The consumption of garlic (*Allium sativum*), recognized for its historical medicinal significance, is linked to diverse health benefits: notably, red garlic stands out for its distinct anthocyanin content, contributing to its unique pink–purple clove color. However, despite extensive research on the therapeutic properties of garlic extracts, there remains limited evidence specifically addressing the therapeutic potential of red garlic. A narrative search was conducted in February 2024 on PubMed and Google Scholar to identify relevant studies examining the biochemical properties of red garlic extracts. Following the search of selected databases, 789 articles were retrieved. Ten laboratory studies exploring the impact of red garlic extracts on laboratory models of lung and digestive tract phlogosis, cancer, microbial proliferation, obesity, and responses to inflammation or oxidative stress were included in this literature review. The studies analyzed both aged and fresh red garlic extracts with a specific emphasis on water extracts. The outcomes highlighted significant antioxidant and anti-inflammatory properties of red garlic extracts, also suggesting potential pro-metabolic effects that could be beneficial in addressing excessive weight and dyslipidemia. The findings also pointed to the inhibitory effect on cancer cell proliferation of red garlic by-products and the superior anti-inflammatory profile of the hydroalcoholic extract. Comparative analyses between red and black garlic extracts indicate inconclusive