

AT A GLANCE

HU58 AND IMMUNE FUNCTION STUDY

THE EFFECT OF PROBIOTIC BACILLUS SUBTILIS HU58 ON IMMUNE
FUNCTION IN HEALTHY HUMANS

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RESEARCH SUMMARY

Bacillus spores are known to have many advantages over other strains of probiotics on the market. They're heat-stable, can be stored at room temperature, and can survive the low pH of the gastric barrier. In human health, they've been shown to stimulate innate immunity, competitively exclude potentially harmful pathogens, secrete antimicrobials and produce beneficial nutrients. Intestinal epithelial cells are active participants in the gut immune response. They can mediate gut-derived systemic inflammatory processes through the production of proinflammatory cytokines. The inflammation is associated with weakened gut barrier integrity when increased permeability is present. In the presence of intestinal permeability, macromolecules and toxins more readily enter the bloodstream. This leads to activation of inflammatory pathways and the production of pro-inflammatory cytokines like IL-6 and TNF- α . These cytokines are associated with the inflammatory and auto-immune processes in many diseases. The current study aimed to evaluate the effect of HU58 on immune function in healthy human subjects. After 8 weeks, a 45% reduction in IL-6 and a 55% reduction in TNF- α was observed. The probiotic Bacillus subtilis HU58 at a dose of 2billion CFU once a day for 8 weeks was found to be well tolerated and has a potential for improving the immune system of human beings.

GOALS

Evaluate the effect of supplementation of Bacillus subtilis HU58 probiotics on immune function in healthy human subjects.

KEY TERMINOLOGY

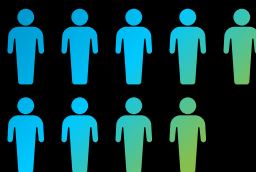
PRO-INFLAMMATORY CYTOKINE

An inflammatory cytokine or proinflammatory cytokine is a type of signaling molecule that is secreted from immune cells like helper T cells and macrophages, and certain other cell types that promote inflammation.

SUBJECTS

18 participants were recruited for the study

9 MALE



9 FEMALE



MATERIALS AND METHODS

Blood markers were measured at baseline, 4th week, and 8th week of the study

- Pro-inflammatory cytokines: IL-6, TNF-alpha
- Natural killer cells (NK Cells)
- Erythrocyte sedimentation rate (ESR)
- Organ function tests: Complete blood count (CBC), Lipid profile, HbA1c, Liver function tests (LFTs), Creatinine
- Seropositivity for HIV, HCV, HBcAg

2 billion CFU of Bacillus Subtilis HU58 each day for 8 weeks

Detailed physicals examinations were given at week 1, 2, 4, and 8.

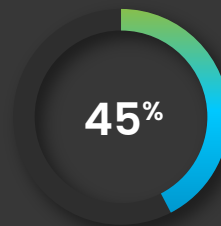
RESULTS

Significant 45% reduction in IL-6

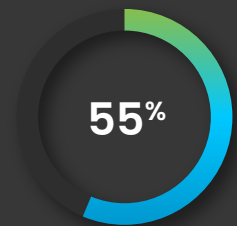
Significant 55% reduction in TNF- α

All organ function tests remained within normal limits

Reduced flatulence and improved stool consistency and ability to defecate



REDUCTION IN
IL-6



REDUCTION IN
TNF- α

CONCLUSIONS

The probiotic Bacillus subtilis HU58 at a dose of 2 billion CFU once a day for 8 weeks was found to be well tolerated and has a potential for improving the immune system of human beings.