

DuPont focuses on high-potency, multi-strain probiotic formulations

22 March 2019 | News

Results from a clinical trial performed by Taverniti and colleagues from the University of Milan (IT) suggest that ingesting higher doses of multispecies probiotic formulations may permit higher, earlier and longer recovery of probiotics in feces of healthy adults.



Nutrients Journal publishes new study suggesting higher doses of a DuPont Multispecies Probiotic Formulation may permit more benefits for healthy adults than lower doses

Results from a clinical trial performed by Taverniti and colleagues from the University of Milan (IT) suggest that ingesting higher doses of multispecies probiotic formulations may permit higher, earlier and longer recovery of probiotics in feces of healthy adults.

The aim of the study, which was published in the journal *Nutrients* (Taverniti et al. *Nutrients* 11(2):285, 2019), was to understand the effect of bacterial count on the transient colonization in the human intestinal tract of four different DuPont probiotic strains administered in a single, commercially available, formulation. The four DuPont strains under investigation were (1) *Bifidobacterium lactis* BI-04, (2) *Lactobacillus acidophilus* La-14, (3) *Lactobacillus plantarum* SDZ-11 and (4) *Lactobacillus paracasei* SDZ-22. The study compared the formulation at two different doses; 7 billion and 70 billion colony forming units (CFU), with the goal of measuring cell recovery in feces after oral administration.

Study Design

In the study, 40 healthy adults of both genders aged between 18 and 60 were randomly divided into two equal groups. A single-blind, two-arm parallel microbiological pilot study was then conducted in which the volunteers, depending on which group they were assigned to, consumed either the 7 billion or 70 billion CFU formulation daily for two weeks. They were then monitored for a follow-up period of an additional two weeks. For the duration of the study, the volunteers were instructed to follow their usual diet (without the intake of any other probiotic products) and to collect 19 fecal samples in total, in accordance with the study design. These samples were then tested for probiotic recovery.

Multiple Strains at Higher Potency Equals Earlier, Longer and Higher Recovery

The study found the first day of detection of the four probiotic strains was earlier in the high dose group when compared to that of the low dose group. Furthermore, on the last day of probiotic consumption, viable cells of all four probiotic strains were recovered from those consuming the 70 billion CFU dose, whereas recovery was not successful for five volunteers who

consumed the 7 billion CFU dose.

During the follow-up period of two weeks after consumption stopped, viable recovery was significantly higher and detectable longer in those who consumed the higher dose formulation than those who consumed the lower dose one. This demonstrates that higher doses of bacterial cells in probiotic formulations may allow for a higher, earlier and longer recovery time suggesting that higher doses may lead to an earlier and more stable transient colonization. In addition, the study shows that strains belonging to diverse taxa may be combined in a single formulation and be selectively quantified upon digestion.

“Higher doses of probiotics result in higher levels of fecal recovery; this has been shown before. What is fascinating with the Taverniti study is they show a higher dose also leads to an earlier and longer detection of the consumed probiotics; suggesting a more stable ‘colonization’. This begs the question if a higher probiotic dose also leads to earlier and more reliable health benefits,” stated Arthur Ouwehand, Ph.D., Technical Fellow, DuPont Nutrition & Health.

Valerie Delahaye, Global Leader of Dietary Supplements for DuPont Nutrition & Health, adds, “Since we are experiencing a clear trend toward multi-strain and higher potency probiotic formulations in many markets around the world, it is encouraging to see study results which may assist in better understanding the benefits of these formulations from a consumer perspective.”