



HOWARU® PROTECT ADULT

Helps maintain a healthy respiratory function

Immune defense for overall health & wellness

Pollution, allergies, respiratory infections and the increasing prevalence of cold and flu are growing concerns worldwide. For instance, cold and flu now affect adults two to three times each year. Colds and flu are an enormous economic burden, and every year lead to more doctor visits and absences from work than any other illness. Many consumers are aware that by maintaining their natural defenses, they are better protected against environmental challenges. They also understand that diet can influence their natural immune defenses, and there is a growing trend to favor prevention over treatment. Ingredients such as vitamins, minerals and probiotics are already associated with immune health in the consumer's mind.

Helping adults stay healthy around the globe

But not all probiotics are the same. IFF scientists have developed HOWARU® Protect Adult (*Bifidobacterium lactis* BI-04®), a unique proprietary* probiotic formulation to help adults maintain a healthy respiratory function.

Your daily challenge

- Helping consumers support their immune health
- Tailor-made products for the consumer you are targeting
- Supporting your products with clinically-documented probiotics
- Safe probiotics for your products

Proven benefits of HOWARU® Protect Adult

In a study published in *Clinical Nutrition*, *Bifidobacterium lactis* BI-04® demonstrated a significant benefit to Upper Respiratory Tract illness (URTI) in healthy physically active adults. The study was conducted in Australia by the Griffith Health Institute at Griffith University and the Australian Institute of Sport. The study, West et al. *Clinical Nutrition* 2014, measured the effect of BI-04® on healthy, active men and women over a five-month period. Results showed the prevalence of URTI was less than that of the placebo group by 27%.

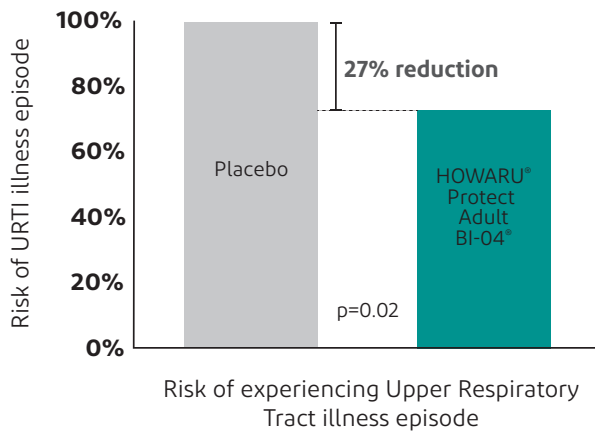
The participant group supplemented with BI-04® also experienced a significant delay in the onset of URT illness, with subjects remaining free of upper respiratory tract illness for several weeks longer on average than those in the placebo group.

Upper respiratory symptoms may be a sign of common cold that is typically caused by rhinovirus. The effect of BI-04® on the rhinovirus lifecycle and human immune system was studied in healthy adults at the University of Virginia (Turner et al. 2017). Over 100 healthy adults participated in the clinical trial where BI-04® was supplemented daily for 4 weeks after which rhinovirus was applied to the nostrils of the volunteers to induce mild cold. The results showed that the participants in the BI-04® supplementation group had less rhinovirus in their nostrils over the 5 days following the infection. In addition, changes in the innate immune response were observed in the BI-04® group compared to placebo group.

Key findings for BI-04® :

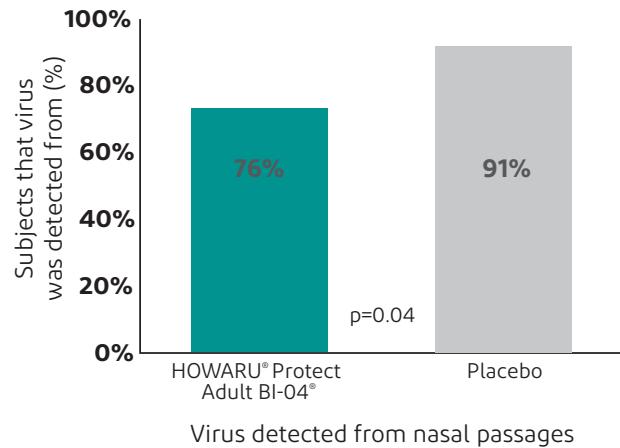
- Delays onset of respiratory tract illness versus placebo
- Supports the immune system in your nasal passages
- Helps maintain respiratory health in healthy active adults
- Helps to keep you healthy, longer

HOWARU® Protect Adult BI-04®
Risk of respiratory tract illness associated symptoms



Adapted from West et al. 2014

HOWARU® Protect Adult BI-04® versus Placebo
Supports the immune system in your nasal passages



Adapted from Turner et al. 2017

Why choose HOWARU® Protect Adult?

- A documented probiotic solution to help adults maintain a healthy respiratory function. Benefits delivered at 2 billion CFU of *Bifidobacterium lactis* BI-04®
- A range of convenient ready-to-market formats and concentrate available for the consumer health care, dietary supplements, and food and beverage industries, or as a custom formulation suited to your desired delivery format
- Patented probiotics* for their immune health properties and shelf-stable technology

*Patent families WO 04/052462 and WO 12/168732

Why choose IFF?

- Leaders in Probiotic science
- Broadest range of clinically-documented probiotics
- Unrivalled dietary supplement formulation expertise
- Global and regional applications expertise used widely by the food & beverage industries
- Robust regulatory support to help you comply with local requirements
- Marketing support and industry insights to help you successfully position your products

References

West, Nicholas P. et al., Probiotic Supplementation for respiratory and gastrointestinal illness symptoms in healthy physically active individuals. *Clinical Nutrition*, (2014) Volume 33, Issue 4, 581-587.

Turner, Ronald B. et al., Effect of probiotic on innate inflammatory response and viral shedding in experimental rhinovirus infection – a randomized controlled trial. *Beneficial Microbes*, (2017) Volume 8, Issue 2, 207-215.



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