



HOWARU[®] CALM

Probiotics for Stress Management and Mood Health

Everyone experiences stress and anxiety at one time or another. In fact, 2 out of 3 adults report experiencing some level of stress in their everyday lives.¹

Whether it is occasional or chronic, there are many negative health implications that are experienced as a result, such as headaches and gastrointestinal problems but can also lead to brain health problems such as difficulty concentrating and behavioral problems such as loss of sleep.

Consumers are searching for a natural solution and, as they recognize the critical impact the gut has on the brain, are now turning to probiotics to target stress from within. This is why we are proud to introduce HOWARU[®] Calm, a new brain health product that provides a natural way to support overall mental and mood well-being.

Clinically Proven Benefits of Lpc-37[®]

Lactiseibacillus paracasei Lpc-37[®] improves psychological and physiological markers of stress and anxiety in healthy adults: a randomized, double-blind, placebo-controlled clinical trial².

Neurobiology of Stress just published a randomized, double-blind, placebo-controlled, single-site study, with a 5-week intervention. 120 healthy volunteers 18 to 45 years of age were randomized into 2 groups: Placebo Group and Lpc-37[®] Group (17 billion CFU *Lactiseibacillus paracasei* Lpc-37[®] per day).

Product Attributes

17B CFU

Lactiseibacillus paracasei (HOWARU Lpc-37[™])

- ⊖ Helping consumers support their mood health
- ⊖ Developing brain health products
Tailor-made products for the consumer you are targeting
- ⊖ Proven safe, well tolerated, clinically-documented probiotics



Brain Health

The Trier Social Stress Test (TSST) was administered at the end of the study as a challenge triggering perceived and physiological stress responses. The psychological and physiological responses to the TSST, a general psychometric assessment including validated questionnaires, inventories, and self-report scales, including the Perceived Stress Scale to measure stress and mood and a more general continuous assessment of sleep, and overall well-being were measured in the study.

Key Findings

HOWARU® Calm is an innovative probiotic solution to promote mental well-being in adults and has been clinically demonstrated to manage the mind's psychological response to stress. By significantly reducing users' perceived stress, the premium probiotic strain in HOWARU® Calm – *Lacticaseibacillus paracasei* Lpc-37® – helps balance mood, promote overall mental well-being and offer a relaxed state of mind.

- ✓ Helps to manage the psychological response to stress
- ✓ Helps to reduce perceived stress
- ✓ Promotes mental well-being
- ✓ Helps balance and regulate general feelings of stress

Why Choose HOWARU® Calm?

- ✓ A documented probiotic solution to help adults maintain mood health. Benefits delivered at 17 billion CFU of *Lacticaseibacillus paracasei* Lpc-37
- ✓ A ready-to-market solution available for the consumer health care, dietary supplements, and food and beverage industries, or as a custom formulation suited to your desired delivery format

Why Choose IFF?

- ✓ Leaders in Probiotic science
- ✓ Broadest range of clinically-documented probiotics
- ✓ Unrivaled 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

1. Multi-sponsor Surveys, Inc. / 2018 Study of Energy Needs & Solutions
2. Patterson E, Griffin SM, Ibarra A, Elsiepen E, Hellhammer J. *Lacticaseibacillus paracasei* Lpc-37® improves psychological and physiological markers of stress and anxiety in healthy adults: a randomized, double-blind, placebo-controlled and parallel clinical trial (the Sisú study). *Neurobiol Stress*. 2020;13:100277. doi: 10.1016/j.ynstr.2020.100277.

HOWARU®, NOW PART OF THE IFF FAMILY



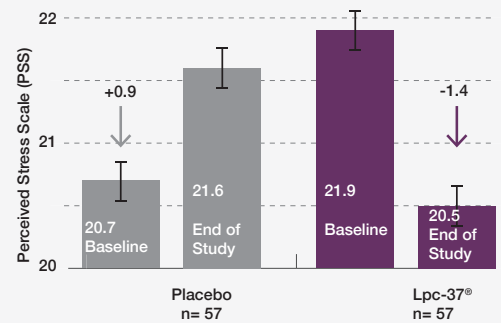
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HOWARU® Calm | HO 00249-0 E A 05.2023

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Figure 1, Change in perceived stress score from baseline to end of study



The Lpc-37® group reported significantly less perceived stress compared with the placebo group after 5 weeks (P=0.0) 48