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ESSENTIALS

L. PLANTARUM

Guaranteed potency tested for stability and survivability

Nutritional Information

One Capsule provides:

Lactobacillus Plantarum	2 billion (2×10^9)
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Take one or two capsules daily with or after a meal



SUMMARY

- 2 billion viable *L. plantarum* organisms per capsule
- With DRcaps, a unique delayed release capsule shell that protects sensitive bacteria from stomach acid
- Lyophilised, encapsulated and individually sealed to enhance stability
- Refrigeration is optional
- Suitable for Vegetarians and vegans

DESCRIPTION

Quest probiotic products are manufactured 100% in-house from proprietary probiotic master cultures with proven stability and survivability in the GI tract. Quest *L. Plantarum* provides 2 billion *Lactobacillus plantarum* bacteria per capsule, lyophilised and encapsulated with guaranteed potency until the end of shelf life.

HOW DOES *L. PLANTARUM* SUPPORT GUT HEALTH IN IBS SUFFERERS?

Alteration in gut microbiome: Alterations of normal intestinal microbiome is frequently observed in IBS (irritable bowel syndrome) patients and probiotic supplementation has been shown to be beneficial in reducing symptoms. A review looked at 20 trials with a total of 1404 subjects and concluded that probiotics were associated with improvements in IBS symptoms including less abdominal pain when compared to a placebo¹.

Abdominal pain and bloating: *Lactobacillus* probiotics decrease intestinal pain in IBS sufferers by promoting the expression of opioid and cannabinoid receptors in the gut and inducing an effect similar to morphine². Studies suggest that *L. plantarum* may be beneficial for those with IBS, particularly relieving abdominal pain and bloating^{3,4}.

Regulation of bowel movements: One placebo-controlled study showed a trend towards the normalisation of bowel movements in the majority of constipated IBS sufferers. An improvement occurred in 95% of participants who took *L. plantarum* vs 15% of participants who took the placebo⁴. *Lactobacilli* strains produce short chain fatty acids, of which acetate, propionate and butyrate nourish the gut cells and promote peristalsis and the relief of constipation⁵.

Protection against pathogenic organisms: *L. plantarum* adheres to the gut mucosa via a mechanism known as mannose adhesion and resides and colonises in the gut. *L. plantarum* has significant antibacterial activity against *Listeria monocytogenes*, *Escherichia coli*, *Yersinia enterocolitica*, *Enterobacter cloacae* and *Enterococcus faecalis* and prevents these from becoming pathogenic and causing symptoms³.

Intestinal immune modulation: *L. plantarum* has immunomodulatory effects and increases the secretion of macrophages and T cells from the colon which protects against pathogens further³. Probiotics have a large influence on the gut associated lymphoid tissue (GALT), the body's store of immune cells and directly influence the development of these cells.

HOW SHOULD *L. PLANTARUM* BE TAKEN?

As a food supplement take one or two capsules daily with or after a meal. Swallow with water.

ARE THERE ANY PRECAUTIONS BEFORE OR WHILE TAKING *L. PLANTARUM*?

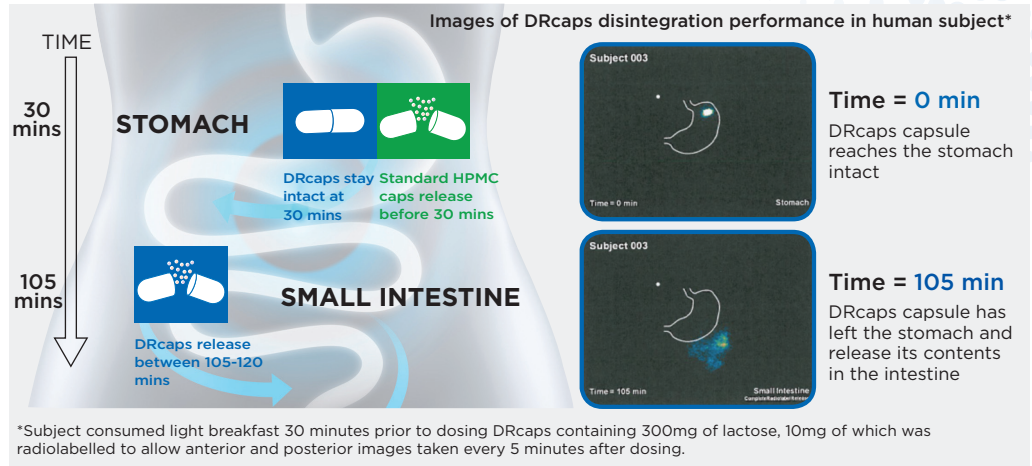
Medical supervision should be obtained before taking *L. Plantarum* while taking immune suppressants.

THE ADVANTAGE OF DRCAPS™

DRcaps are designed to delay the release of probiotic bacteria, protecting the probiotics from stomach acidity and allowing the probiotics to be most effective where they need to be - **directly in the intestine.**



Images of DRcaps disintegration performance in human subject*



FEATURES

- 2 billion viable *L. plantarum* organisms per capsule
- With delayed release capsules to protect bacteria from the harsh environment of the stomach
- Non-dairy sourced vegan strains

HEALTH NEEDS



GUT & DIGESTION

SCIENTIFIC REFERENCES

1. World J Gastroenterol. 2008; 14 (17).
2. Nature Medicine. 2007;13;35-37
3. World J Gastroenterol. 2012; 14;18(30): 4012-4018
4. European J Gastroenterology and hepatology.2001;13;10
5. Colorectal Dis. 2016;18(8):803-10

