

PRODUCT GUIDE

Lalmin®

B-Complex Vitamins



THE OPTIMAL SOURCE OF B-COMPLEX VITAMINS

Yeast *Saccharomyces cerevisiae* is known as being a natural and rich source of B-complex vitamins. However, the level of B-complex vitamins in brewer's by-products and even baker's yeast is difficult to guarantee.

Lalmin® B-Complex Vitamins is an inactivated dried whole cell yeast (*S. cerevisiae*) containing elevated and standardized levels of B-complex vitamins. During the fermentation process, the yeast is supplemented with specific levels of B vitamins, allowing the B vitamins to interact with the yeast cell components. The gentle processing conditions preserve the yeast natural beneficial nutrients such as minerals, β -glucans, peptides, nucleotides, etc.

COMPLETE B-COMPLEX SUPPLEMENTATION

B-complex vitamins generally refer to all 8 B vitamins: Thiamine (B1), Riboflavin (B2), Niacin (B3), Pantothenic Acid (B5), Pyridoxine (B6), Biotin (B8), Folic Acid (B9) and Cobalamin (B12).

Food sources include meat (liver), fish, whole grains, potatoes, bananas, lentils, beans, nutritional and brewers' yeast.

Non-GMO
Allergen-free
Gluten-free
Vegan
Kosher
Halal

B-VITAMINS
are essential
for energy
metabolism

COBALAMIN
is required to
produce red blood
cells and prevent
anemia⁽¹⁾

FOLIC ACID
supplementation
during pregnancy
helps prevent birth
defects⁽²⁾

THIAMIN
supports the immune
system and normal
nervous system
function

B-VITAMINS
can help relieve
symptoms
of depression
and improve
cognitive function
and mental health^(3,4)



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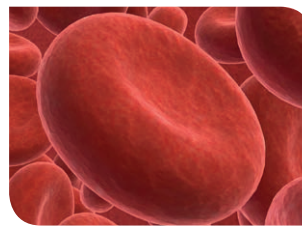
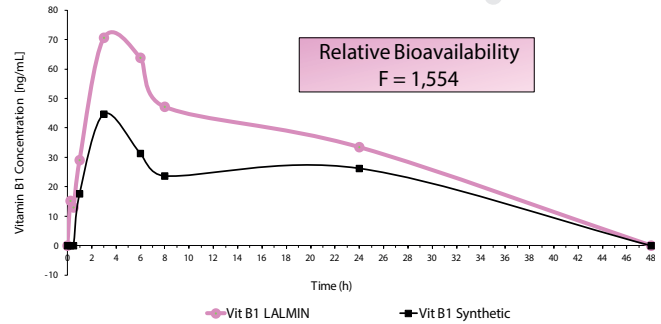


LALMIN® B-COMPLEX VITAMINS: HIGHLY BIOAVAILABLE B VITAMINS⁽⁵⁾

The objective of this study was to compare the bioavailability of B vitamins from **Lalmin® B vitamins** to a blend of synthetic B vitamins.

- ✓ After 3 weeks of depletion, rats received an acute oral dose of B vitamins, either from **Lalmin® B vitamins** or from a blend of synthetic B vitamins (Thiamin HCl)
- ✓ **Bioavailability of vitamin B1 (Thiamin) is superior with Lalmin® B vitamins than with a synthetic blend of B vitamins (F= 1,554)**

Variation of Vitamin B1 plasmatic concentration in rats administered either Lalmin® B vitamins or synthetic B vitamins blend



B-COMPLEX VITAMINS: A WIDE RANGE OF HEALTH POSITIONING⁽⁶⁾

Based on 13.1 Health Claims approved by EFSA on B Vitamins

Blood & Heart Function	Vit B1, Vit B2, Vit B6, Vit B12
Brain & Cognitive Function	B-Complex Vitamins
Hormonal Function	Vit B5, Vit B6
Body Protection & Immunity	Vit B2, Vit B6, Vit B9, Vit B12
Energy & Metabolism	B-Complex Vitamins
Pregnancy	Vit B9, Vit B12
Beauty	Vit B2, Vit B3, Vit B8

References

1. Chan et. al (2016). Oral Vitamin B12 Replacement for the Treatment of Pernicious Anemia. *Front. Med.*, Aug; 3, 38; 1-6.
2. Crider et. al (2011). Folic Acid Food Fortification—Its History, Effect, Concerns, and Future Directions. *Nutrients*; 3, 370-384
3. Skarupski et al. (2010). Longitudinal association of vitamin B-6, folate, and vitamin B-12 with depressive symptoms among older adults over time. *Am J Clin Nutr* 2010; 92: 330-5.
4. White et. al. (2015). Effects of Four-Week Supplementation with a Multi-Vitamin/Mineral Preparation on Mood and Blood Biomarkers in Young Adults: A Randomised, Double-Blind, Place bo-Controlled Trial. *Nutrients*; 7(11), 9005-9017
5. Bioavailability study of Vitamins B in Lalmin® B vitamins in Wistar rats. METABRAIN RESEARCH - Biology Department - 4 avenue du Président F. Mitterrand - F 91380 Chilly Mazarin
6. EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA)