

PRODUCT GUIDE

Lalmin[®] Selenium

Lallemand Health
Ingredients

SELENIUM ENRICHED YEAST FOR FUNCTIONAL FOOD AND DIETARY SUPPLEMENTS

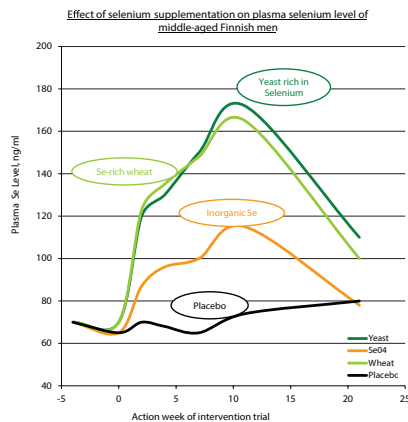
- Selenium is highly recognized for its many health benefits (antioxidant, fertility enhancement, immune response optimization, viral diseases, protection etc.).
- It enters the food chain as selenomethionine, through plants, via soil content, therefore intake varies with geography and dietary habits.
- Low intake of selenium can lead to selenium deficiency which can be responsible for adverse health effects and diseases.
- Predictions show that selenium content in the soil will continue to decline with climate changes, and the prevalence of deficiency is expected to increase.⁽¹⁾
- Selenium-containing yeast can be an effective, safe, and natural source of dietary selenium.⁽²⁾

LALMIN[®] SE: A NATURALLY FERMENTED SOURCE OF SELENIUM

- **Lalmin[®] Se** is a dried inactivated whole cell yeast (*Saccharomyces cerevisiae*, also known as bakers yeast) which converts inorganic selenium into organically bound selenium during the fermentation process.
- That's why **Lalmin[®] Se** is rich in selenium **in its main natural food form: selenomethionine⁽³⁾**.
- Lalmin[®] Se1000 contains 1000 - 1400ug of selenium per gram, and Lalmin[®] Se2000 contains 2000 - 2400ug selenium per gram.



LALMIN[®] SE: BEST BIOAVAILABILITY IN HUMANS⁽⁴⁾



In this study, 50 middle-aged Finnish men of low selenium status were supplemented with different forms of selenium (200 µg/day) for 11 weeks.

Yeast rich in selenium has the same effect on plasma selenium level as selenium-rich wheat.

✓ Yeast rich in selenium has a similar bioavailability as wheat rich in selenium.

Yeast rich in selenium has a superior effect on plasma selenium level than inorganic selenium.

✓ Yeast rich in selenium is more bioavailable than inorganic selenium.

VEGAN

LALLEMAND BIO-INGREDIENTS

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LALLEMAND

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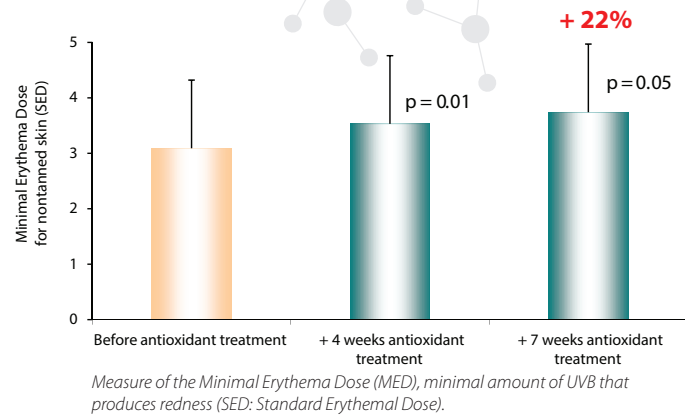


LALMIN® SE: A STRONG ANTIOXIDANT FOR SKIN PROTECTION⁽⁵⁾

In this study, the capacity of an antioxidant complex containing **Lalmin® Se** to reduce UV-induced damage was investigated in 25 healthy individuals. The antioxidant complex was administered orally over 7 weeks.

Significant results:

- ✓ Increase of skin tolerance to UV-light
 - Reduction of sunburns (cf graph)
- ✓ Protection against oxidative stress
- ✓ Genomic Protection – DNA protection
- ✓ All the while, pigmentation increased



Selenium is known for many health benefits, including antioxidant activity, fertility enhancer, immune response optimization and protection against viruses.

New data shows that selenoproteins are also relevant for normal neurological function. Selenium has been identified as playing a role in several neurodegenerative disorders, including Alzheimer's, Parkinson's, and possibly multiple sclerosis, amyotrophic lateral sclerosis, and Huntington's.

Selenium status during mother's pregnancy may also affect children's cognitive and motor ability.

LALMIN® SE AND HEALTH CLAIMS

According to the European claim regulation: Article 13⁽¹⁾ of Regulation (EC) No 1924/2006⁽⁶⁾

Antioxidant	Selenium contributes to the protection of cell constituents from oxidative damage
Immunity	Selenium contributes to the normal function of the immune system
Thyroid	Selenium contributes to normal thyroid function
Spermatogenesis	Selenium contributes to normal spermatogenesis
Hair & nails	Selenium contributes to the maintenance of normal hair & nails

FDA Qualified Health Claims About Cancer Risk

Reduce Risk of Cancer	Selenium may reduce the risk of certain cancers. Some scientific evidence suggests that consumption of selenium may reduce the risk of certain forms of cancer. However, FDA has determined that this evidence is limited and not conclusive.
Anticarcinogenic	Selenium may produce anticarcinogenic effects in the body. Some scientific evidence suggests that consumption of selenium may produce anticarcinogenic effects in the body. However, FDA has determined that this evidence is limited and not conclusive.

References

1. Jones et al. (2017). Selenium deficiency risk predicted to increase under future climate change. *PNAS*, March 14; 114, 11: 2848-2853.
2. Kieliszek et al. (2013). Selenium: Significance, and outlook for supplementation. *Nutrition*, May; 29, 5: 713-718.
3. Mc Sheehy S., Identification of selenomethionine determination in selenized yeast using two-dimensional liquid chromatography-mass spectrometry based proteomic analysis, *Analyst* (2005), 130, 35-37
4. Levander O.A., Bioavailability of selenium to foinish men as assessed by platelet glutathione peroxidase activity and other blood parameters, *The American Journal of Clinical Nutrition* (1983), 37, 887-897
5. J.P. Cesarini, L. Michel, J.M. Marette, H. Adhoute, M. Bejot. Immediate effects of UV radiation on the skin: modification by an antioxidant complex containing carotenoids. *Photodermatol. Photoimmunol. Photomed.* (2003); 19: 182-189
6. EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA); Scientific Opinion on the substantiation of health claims related to selenium

