



Arbor Organics

NOP Organic Yogurt Plus Code: A40000

Probiotic ingredients are a global mainstay of cosmetic and personal care products, proven by steadily growing international awareness. A rich source of probiotic bacteria, yogurt protects and nourishes the body inside and out. The fermented nature of **NOP Organic Yogurt Plus** allows for isolation and concentration of bioactives, which increase ATP synthesis when applied to the skin, resulting in heightened cellular efficiency and enhanced collagen production.



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| Trade Name: | NOP Organic Yogurt Plus |
| Code: | A40000 |
| INCI: | Water & Oryza Sativa (Rice) Extract & Yogurt Extract |
| Status: | Proposed |
| Suggested Use Level: | 1 - 10% |
| Suggested Applications: | ATP Synthesis, Moisturization |

Unlike other fads and trends that generally enjoy short-lived popularity, probiotics have been a persistent theme in personal care products since the early 2000s and have yet to lose momentum. Probiotic ingredient sales reached \$ 51.7 million in the United States in 2004 and grew by 28.4% in 2006-2007. In 2009, sales are expected to reach \$ 11.4 billion.¹ Clearly, probiotics have become a fundamental element of modern skin care and cosmetics.

Probiotic bacteria are helpful and protective, serving to treat gastrointestinal problems and allergies along with stabilizing immune responses and intestinal barrier function in critical illnesses.^{2,3,4} Due to its high level of probiotics, yogurt consistently earns raves from nutrition experts who tout the benefits of the popular dairy item.

Many beneficial foods are also valuable cosmetic ingredients, and yogurt is a prime example. It is ideal for use in skin care systems that focus on providing intense moisture therapy for dry, irritated skin.^{5,6} From a marketing point of view, **NOP Organic Yogurt Plus** is an excellent way to tie in the trend for probiotics with the growing consumer desire for organic products. The Boston Globe reports “naturals & organics [are] the fastest-growing segment of the cosmetics industry”.⁷

Yogurt is a fermented milk product. Cultures of *Lactobacillus bulgaricus* and *Streptococcus thermophilus*, ferment the lactose in milk to produce lactic acid. The increase in lactic acid lowers the pH thus clotting the milk to form yogurt.⁸ Fermentation increases production of vitamins, minerals, and other bioactive compounds and amplifies the bioavailability of chemical compounds by freeing them from the matrix to which they are typically bound. Yogurt is a chief ingredient in **NOP Organic Yogurt Plus**, its fermented nature allows us to isolate and concentrate bioactive compounds, which are then transferred to the skin when applied in a personal care product.

NOP Organic Yogurt Plus has been proven to significantly increase ATP synthesis in in vitro assays. Cells treated with 2% **NOP Organic Yogurt Plus** had a 43% increase in ATP when compared to a negative control and a 5% increase when compared to a positive control. Higher ATP synthesis rates lead to amplified cellular efficiency, which can in turn accelerate collagen production. Augmented levels of collagen production are invaluable in anti-aging formulations.

In addition to the benefits of yogurt, **NOP Organic Yogurt Plus** delivers an extra layer of moisturization from its carbohydrate-rich Rice Solution base, which has been shown to increase moisturization of the skin by almost 10% compared to controls. The use of **NOP Organic Yogurt Plus** allows formulators to capitalize on the functional and probiotic benefits of yogurt while also meeting consumer demands for certified organic ingredients.

Increase in ATP Synthesis

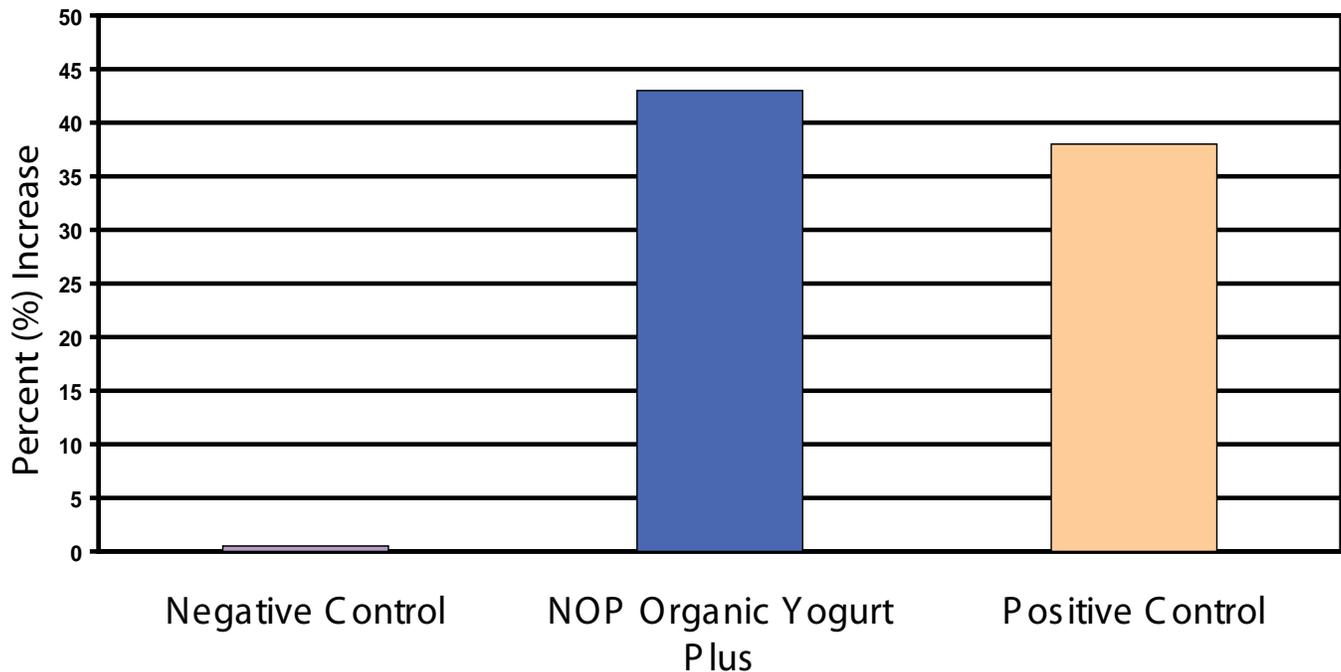


Figure 1. Comparison for changes in ATP synthesis.

References:

1. "US Consumers Get to Grips with Probiotics". www.dairyreporter.com. May 19, 2005.
2. Fedorak, Richard N. "Understanding why probiotic therapies can be effective in treating IBD." *Journal of Clinical Gastroenterology*. 42 (8): S111-S115. September 2008.
3. Di Felice, Gabriella, et al. "Use of probiotic bacteria for prevention and therapy of allergic diseases-Studies in mouse model of allergic sensitization". *Journal of Clinical Gastroenterology*. 42 (8): S130-S132. September 2008.
4. Madsen, Karen. "Probiotics in critically ill patients". *Journal of Clinical Gastroenterology*. 42 (8): S116-S118. September 2008.
5. Shinohara, M., et al. "Taking Probiotic Yogurt by Pregnant Mothers and their Offspring for the First 6 Months of Life was Associated with Reduced Skin Hypersensitivity to Histamine in the Offspring." *Journal of Allergy and Clinical Immunology*. 121 (2) Supplement 1: S186. February 2008.
6. "Yogurt and Probiotics Nourish Healthy Skin with New Product Developments". *Cosmetics & Toiletries*. www.cosmeticsand-toiletries.com. March 28, 2007. Retrieved October 9, 2008.
7. Chaityn Lebovits, Susan. "Cosmetics firms heed calls for organics." Article: *The Boston Globe* May 26, 2008.
8. "Yogurt Production". Cornell University. www.milkfacts.info. Retrieved October 16, 2008.