

## TECHNICAL DATA SHEET

**Product Name:** Lactobacillus Ferment Lysate

**INCI name:** Water, Lactobacillus Ferment Lysate, Hydroxyacetophenone, 1,2-Hexanediol

**CAS:** 7732-18-5, n/a, 99-93-4, 6920-22-5

**Chemical classification:** Mixture

**Functional category:** Skin conditioner, antioxidant, humectant, preservative (secondary function – due to the Hydroxyacetophenone and 1,2-Hexanediol system).

**Description:** Lactobacillus Ferment Lysate is a complex biotechnological cosmetic ingredient obtained through fermentation of bacteria of the Lactobacillus genus. During fermentation, various beneficial metabolites are produced, including lactic acid, lactic peptides, vitamins, and polysaccharides. After fermentation, a lysis process is applied, breaking the bacterial cell walls and membranes to release intracellular content – proteins, peptides, nucleic acids, and other bioactive components. The final product therefore contains both fermentation metabolites and molecules released from the bacterial cells, providing synergistic activity.

Lactobacillus Ferment Lysate supports the skin in multiple ways: it restores and maintains the microbiota balance, strengthens the skin barrier, and enhances resistance to external stressors. It provides a soothing effect, reduces irritation and redness, and thanks to its antioxidant properties helps neutralize free radicals and mitigate oxidative stress. At the same time, it hydrates the skin, improves elasticity and tone, and contributes to an even complexion and natural radiance. It is especially suitable for formulations intended for dry, sensitive, and reactive skin, as well as for anti-aging products such as serums and treatments for sensitive regions like the area around the eyes.

**Bioactive compounds:** Lactobacillus Ferment Lysate contains lactic acid and lactates that hydrate the skin, maintain its pH balance, and promote mild exfoliation. Peptides and protein fragments derived from Lactobacillus cellular proteins stimulate collagen and elastin synthesis, resulting in firmer, more elastic skin. Nucleic acids (DNA, RNA) and their derivatives (nucleotides and nucleosides) accelerate cell renewal and tissue regeneration. Polysaccharides and exopolysaccharides form a protective film on the skin surface and help retain moisture. B-group vitamins, particularly B2 (riboflavin), B3 (niacin/niacinamide), B6 (pyridoxine), and B9 (folic acid), produced during fermentation,

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protect against oxidative damage and improve cellular metabolism. Enzymes such as superoxide dismutase (SOD) and catalase further enhance the antioxidant capacity. Lipids, including fatty acids (oleic, linoleic, palmitic) and phospholipid fragments (phosphatidylcholine, phosphatidylethanolamine), restore the skin barrier and reinforce the hydrolipid layer. Acting synergistically with peptides and other bioactives, these components soothe irritation, reduce redness, and strengthen skin resilience.

### Benefits:

- Hydrates the skin and maintains natural pH balance.
- Promotes mild exfoliation and epidermal renewal.
- Stimulates collagen and elastin synthesis for firmer, more elastic skin.
- Accelerates cell regeneration and tissue repair.
- Forms a protective film and helps retain moisture.
- Protects against oxidative damage.
- Improves cellular metabolism and energy balance.
- Enhances antioxidant protection.
- Strengthens the skin barrier and restores the hydrolipid layer.
- Soothes irritation and reduces redness.
- Increases skin resistance to external stressors.

**Use and recommended concentrations:** Lactobacillus Ferment Lysate is used in various types of cosmetic products due to its excellent tolerance and broad efficacy profile. It is usually added in the final stages of formulation, at temperatures below 40 °C, to preserve bioactive stability. In moisturizers and lotions it is used at 1–3 %, supporting hydration and barrier function. In serums, emulgels, and anti-aging formulations, concentrations of 3–5 % enhance regenerative, antioxidant, and soothing effects. For sensitive or reactive skin, and for products for sensitive regions such as the area around the eyes, lower-range concentrations are preferred, whereas intensive anti-aging and dermocosmetic products may use higher levels, though rarely above 5 %. Compatible with most cosmetic raw materials, it easily integrates into aqueous phases, serums, and toners; only strongly alkaline formulations should be avoided, as they may reduce its stability and efficacy.

**Animal testing:** In accordance with current European Regulation (EC) No 1223/2009 on cosmetic products, this substance has not been tested on animals. Safety evaluation is

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based on available toxicological data, scientific literature, and validated alternative testing methods (in vitro and in silico). The term in silico refers to computer-based testing and predictive modeling, not involving living organisms (in vivo) or cell cultures (in vitro). This note confirms compliance with the EU animal-testing ban and serves for informational purposes for further cosmetic formulation use.

**GMO:** Non-GMO

**Vegan:** Contains no animal-derived components



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