



Biotechnological substitute for amniotic fluid and placental extract

Skin and hair care

Definition / Composition

- In order to obtain a physiological nutritive fluid, we have studied some microorganisms able to cause a wide range of biochemical reactions, producing a biomass or cells, and able to transform or to produce biochemical substances or substrates.
- TECHNOBION® BL LS 8407 comes from the idea of isolating and stabilizing this biological potential for the skin.
- TECHNOBION® BL LS 8407 has been designed for reproducing, thanks to its biochemical composition and its biological properties, an equivalent to a very stimulating and nutritive medium; the latter making an **optimal environment** to meet the **nutritional needs** and to **help the maintenance** of physico-chemical constants (pH, osmolarity...) and functions of skin cells.
- TECHNOBION® BL LS 8407 is a **biolysate** obtained from lactic microorganisms, isolated from milk, *Lactococcus lactis* (Fig. 1A). The **cytosol** active fractions of these cells are extracted, purified and stabilized.

Main components:

1. L. amino-acids
2. Oses
3. Lactic acid
4. Mineral salts
Ca, Mg, Si, K
5. Oligo-elements (Cu, Zn, Fe)

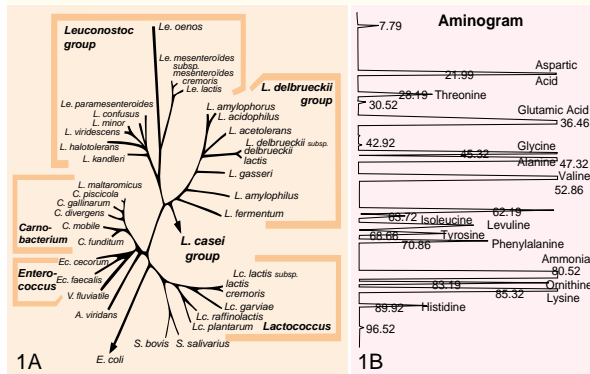


Fig. 1 – TECHNOBION® BL LS 8407 is obtained from *Lactococcus lactis*.
1A - Typical phylogenetic tree of lactic bacteria showing the special position of *Lactococcus lactis*.
1B - HPLC chromatographic analysis of free L. amino-acids within TECHNOBION® BL LS 8407.

Skin benefits

1. **Moisturization** of the superficial epidermal layers.
2. **Nutrition** of skin cells, its constitutive bio-elements are nutritive, energizing and regenerating of the vitality of skin cells.

3. **Cytophilic, eutrophic** skin.

4. **Bio-protecting**, helping the integrity and the restoration of skin property.

5. **Antitoxic**,

6. As it is **slightly hypotonic**, it has good osmodynamic properties.

Cosmetic use

- TECHNOBION® BL LS 8407 is suitable for:
 - **moisturizing, nutritious** care,
 - repairing, **protecting** skin care,
 - **stimulating** care (day/night),
 - **sun** care, **men** care,
 - face, **body, hand** care.

Advantages

Original, stable complex to be used in multiple applications as a main or complementary active. Clear similarities with organic nutritive fluids like amniotic fluid or placental extracts.

Dosage / Solubility / Mode of incorporation

1. **Dose of use:** 3% to 10%

2. **Solubility:** TECHNOBION® BL LS 8407 is soluble in water and insoluble in oils.

3. **Mode of incorporation:** TECHNOBION® BL LS 8407 is incorporated into the finishing process at 40°C, or at room temperature for cold processing.

Analytical characteristics

1. **Aspect:** limpid yellow liquid, with a weak odor.
2. **Specifications:** upon request.

Tolerance

Good.

Efficacy

Test summaries overleaf.

Storage

In its original packaging, at 15-25°C.

INCI Name

Lactococcus Ferment (and) Propylene Glycol.

Manufacturer

Laboratoires Sérobiologiques S.A.

EFFICACY TESTS

Metabolic stimulation of human keratinocytes in survival.

Cells are cultivated in a reference medium; 72 hours after the initial seeding, the medium was replaced with a Hanks solution containing the active ingredients:
 - TECHNOBION® BL LS 8407 at 3%,
 - Amniotic fluid at 3%.

The ATP level and the number of cells were evaluated after 3 days.

Results (Fig. 2)

• TECHNOBION® BL LS 8407 at 3% extends the survival and improves the metabolic activity (+89%), as Amniotic fluid at 3% has no effect.

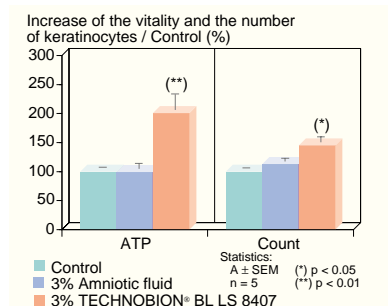


Fig. 2 – Effect of TECHNOBION® BL LS 8407 on keratinocytes vitality.

• TECHNOBION® BL LS 8407 has a wider spectrum of activity than Amniotic fluid one towards human keratinocytes in culture.

Repairing effect of the cutaneous microrelief (clinical study).

• **Observation by Microphotography** (fig. 5)

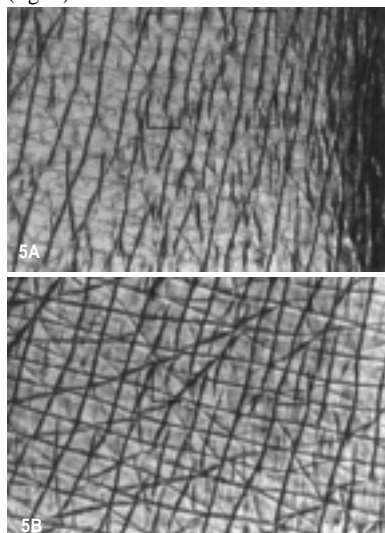


Fig. 5 – Repairing effect of TECHNOBION® BL LS 8407 (Mx10).

5A: **Before** treat.: very dry skin, destructured microrelief. Unidirectional primary and secondary lines.

5B: **After** 3 week treat.: restructuration of the microrelief, multidirectional reorganization of the microlines network.

Stimulation of cell vitality (in vitro).

TECHNOBION® BL LS 8407 was tested at 3% and 10% on a culture of human fibroblasts in survival. Cell vitality was evaluated through the measurement of intracellular ATP.

Results (Fig. 3)

TECHNOBION® BL LS 8407 has clearly stimulated cell vitality by:

+33% at 3% (v/v)

+71% at 10% (v/v) at D+4.

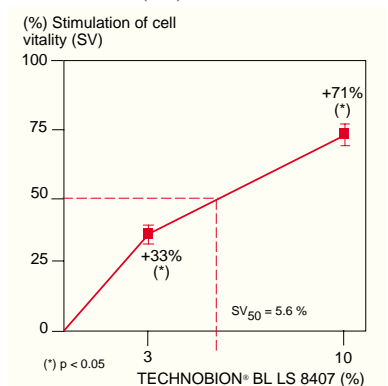


Fig. 3 – Dose-dependent stimulation.

Moisturization on human horny layers (dielectric conductivity).

Three experimental conditions: untreated control, lotion with 10% TECHNOBION® BL LS 8407, lotion with 10% Amniotic fluid. The moisturizing effect has been evaluated by measuring the dielectric conductivity according to Tagami.

Results (Fig. 4)

• Dielectric conductivity increased with both TECHNOBION® BL LS 8407 and Amniotic fluid, for the different concentrations tested. Results are significant in comparison with the control up to 4 hours after application. TECHNOBION® BL LS 8407 and Amniotic fluid have a comparable activity.

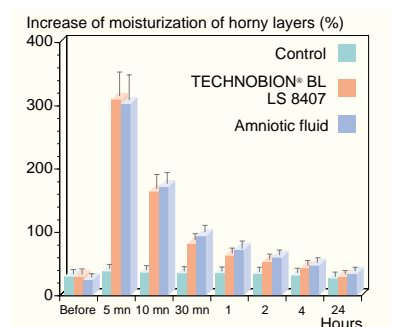


Fig. 4 – Comparison between the moisturizing effect of TECHNOBION® BL LS 8407 and Amniotic fluid.

Aim / Protocol

To demonstrate the repairing activity on the superficial cutaneous microrelief of a cream containing 10% TECHNOBION® BL LS 8407.

Inclusion of 10 female volunteers from 22 to 73 years old having a very dry skin. Twice daily treatment during 3 weeks.

• **Observation by Scanning Electron Microscopy** (fig. 6)

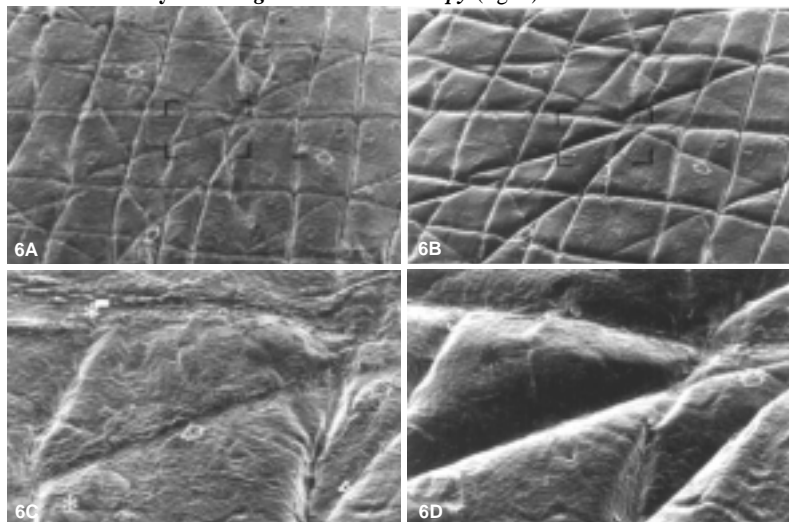


Fig. 6 – Repairing effect of TECHNOBION® BL LS 8407 (Mx20 and x100) SEM observation.

6A - 6C = **Before** treat.: very dry skin with a destructured microrelief.

6B - 6D = **after** 3 week treat.: reparation of the microlines network. Clear turgescence of the interline plates.

