Sérum T.E.W.L.

Marketing File

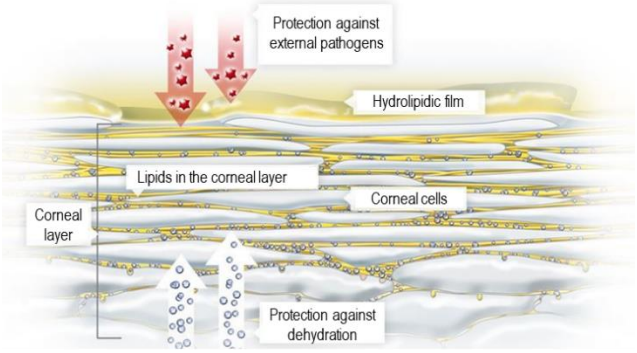
BIOLOGIQUE
RECHERCHE
PARIS

PRODUCT SUMMARY

Sérum T.E.W.L.

Lipid shield for face

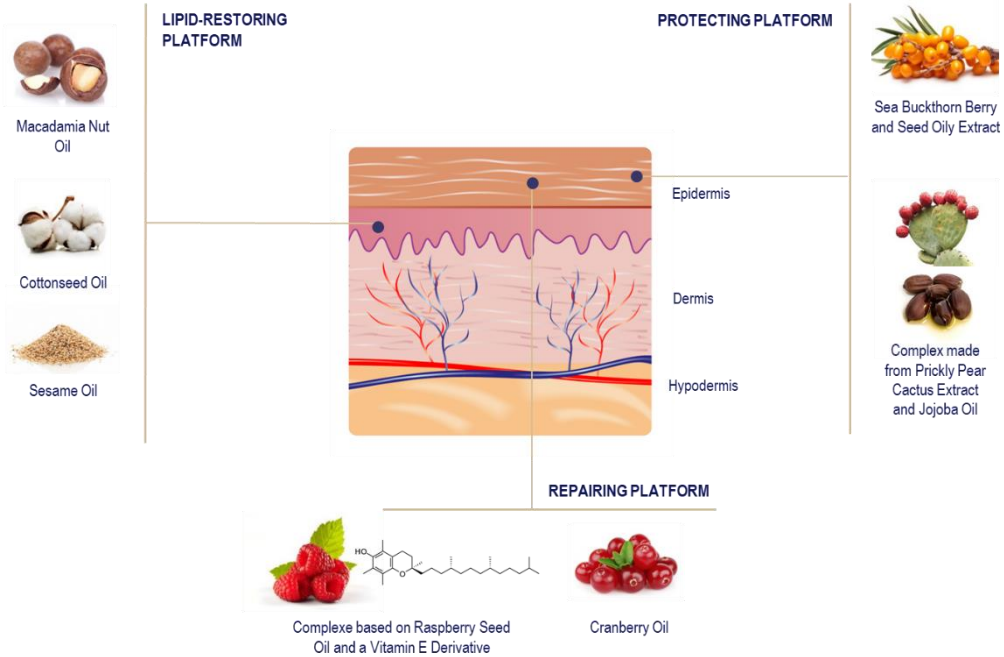
Phase	Treatment	
Category	Targeted Serums	
Skin Instants©	Undernourished and lipid deficient	
Available formats	*Retail* 8 ml - 30 ml	*Professional* 125 ml



FINDINGS

The epidermis is hydrated by maintaining static (fixed) and dynamic (circulating) water. An optimal hydric gradient is also maintained by the intercorneocyte lipids, components of the Natural Moisturizing Factor (NMF) and the hydrolipidic film.

ACTION & ACTIVE INGREDIENTS: **Sérum T.E.W.L.** is a genuine lipid shield that traps hydration in tissues, overcoming long-term dehydration and restoring a high-quality skin barrier. The skin is nourished, its lipids are replenished and comfort is restored.



EFFICACY TEST: Participants applied a single application of **Sérum T.E.W.L.**, which showed a **significant reduction** in **transepidermal water loss** up to 6 hours after application. This improved the condition of the skin barrier and hydration of the upper layers of the epidermis.

Time (hours)	2	4	6
Variation of the TEWL vs control area	**-8.4%**	**-13.5%**	**-10.9%**

PRODUCT DESCRIPTION

Sérum T.E.W.L.: Relipidizing facial shield

Skin Instants©: Recommended for undernourished and lipid deficient Skin Instants©

AVAILABLE FORMATS AND PACKAGING DESCRIPTION

Retail format: 8 ml and 30 ml bottles

Professional format: 100 ml bottle

I. Biologique Recherche Findings

To fully understand what follows, it is important to have knowledge of the skin's structure and how it functions; please refer to the dermatological dossier: "The Skin."

A- Epidermis: A protective barrier

The epidermis is directly exposed to the external environment and thus comprises a protective barrier, but its ability to protect us depends on its water and lipid content. It is the hydrolipidic film and epidermal lipids that determine the permeability and appearance of the epidermal barrier. These elements are also important for maintaining the skin's water balance.

Facial skin that has deficiencies in the hydrolipidic film and/or epidermal lipids may show early signs of fine lines, wrinkles and pigmentation marks. In fact, the skin becomes dehydrated, rough and scaly, because its barrier function is impaired and transepidermal water loss increases.

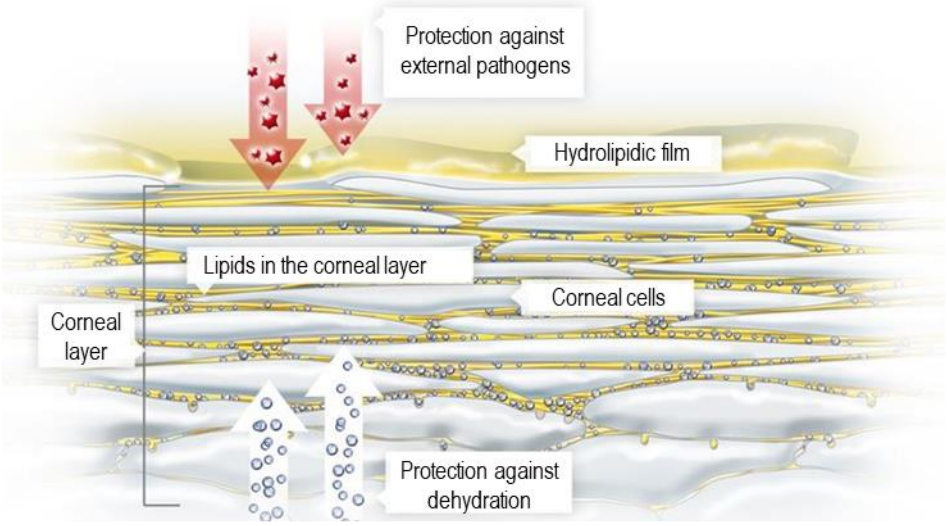


Figure 1: The skin barrier

a) The hydrolipidic film

The hydrolipidic film consists of**:** a water (hydro) and fat (lipo) emulsion. Analysis of the skin structure indicates the presence of the following substances on the surface of the epidermis:

- Perspiration and sebaceous lipids
- Substances generated by the hornification process (degradation products of the desmosomes which ensured the cohesion of the horny cells before desquamation)
- Horny cells becoming detached
- Water from the deepest layers which has risen to the surface (transepidermal water, insensible perspiration)

The primary function of the hydrolipidic film is to act as an external barrier. It also maintains skin suppleness using slightly acidic components, such as lactic acid, pyrrolidone carboxylic acid and amino acids (Natural Moisturizing Factor).

b) Epidermal lipids

Epidermal lipids play an essential role in skin barrier function. They form the cement that holds the horny cells together. The function of lipids is to restrict the flow of transepidermal water using their hydrophobic qualities and thus maintain an optimal epidermis hydration level.

The epidermal lipids are made up of:

- Ceramides, which represent most of the lipids in the horny layer
- Phospholipids
- Free fatty acids
- Cholesterol
- Cholesteryl sulfate

The main functions of ceramides are to form a barrier and to set the aqueous components in this complex lipidic mixture.

B- Undernourished and lipid deficient Skin Instants©

a) Causes

Undernourished and lipid deficient epidermis are caused by:

- **Three alterations in epidermal physiology**

- Hydrolipidic film failure: Sebum has an occlusive effect which reduces water evaporation on the skin surface. The skin's surface may be dehydrated because sebaceous secretion is insufficient. Hydrolipidic film failure leads to excessive water evaporation. Lipid deficiency can cause frequent tightness and the skin can become uncomfortable.
- Lack of Natural Moisturizing Factor (NMF): the water is retained in the cells of the epidermis thanks to a number of compounds known as NMF (Natural Moisturizing Factors). The term NMF

involves a mixture of hygroscopic substances (amino acids, lactic acids, etc.) capable of capturing water and acting like sponges. It helps the skin maintain the level of hydration it needs to function effectively. In addition, the NMF absorbs ambient air humidity, thereby contributing to the effective operation of various enzymes involved in the progressive degradation of the intercellular junctions, including desquamation. This desquamation results in the degradation of filaggrin and the keratinocyte metabolic products, which in turn produces NMF and therefore helps keep the horny layer hydrated. As a result of the NMF shortage, the skin lacks water in the horny layer.

- Hyaluronic acid deficiency: Under the effect of hyaluronic acid deficiency, the skin becomes drier and more fragile while the tissue progressively slackens, the face becomes sunken, and these imbalances are exacerbated by aging and exposure to ultraviolet rays. From the age of 20, our production of hyaluronic acid begins to slow down, and this trend accelerates from the age of 40.

- **Age**

The sebum level at the surface of the skin undergoes physiological changes during a person's lifetime as the sebaceous glands are hormone-dependent. Sebum production starts to decline when you reach your fifties, especially in women, due to the drop in androgen secretion. The skin therefore has more difficulty in retaining water in the horny layer; it becomes dehydrated, is deficient in lipids and takes on a parchment-like appearance.

- **Cold weather**

When the weather is cold, the sebaceous glands operate in slow motion. As sebaceous secretion is reduced, the hydrolipidic film which constitutes a protective coating on the surface of our skin becomes thinner. As it is deprived of this natural protection, the skin becomes more vulnerable and its sensitivity is exacerbated.

When cold, the blood vessels contract at the surface of the dermis. The diameter of vessels is reduced and the blood flow declines, leading to difficulty in regulating intradermal water (the dermis plays the essential role of the body's water reserve). Thus, the quantity of water transmitted by the blood is reduced. The skin cannot replenish the water that has evaporated naturally. It is not as well irrigated, and thus becomes dehydrated and damaged.

- **Air**

Furthermore, air in contact with the skin causes a "loss" of water content. Drier air means increased water evaporation. Because of this, the skin becomes coarse.

b) Telltale signs

It is important to distinguish the difference between undernourished skin (lipid deficient) and dehydrated skin.

In fact, dehydrated skin results from a water stress phenomenon linked to external attack (cold, UV rays, pollution, etc.); the skin therefore lacks water in the epidermis and dermis, where the water reservoir is located. This condition is temporary. Its structure is healthy but simply needs to be more (or better) hydrated. As a result, the most important thing to give it is water, by using a moisturizer.

In contrast, dry skin is linked to a lipid stress phenomenon caused by insufficient sebum production. This is a more deep-seated problem: the skin no longer secretes enough lipids to protect itself and maintain its hydration naturally. Giving it water is not enough; it needs lipids, that is to say, fat, to repair itself. Hence the use of a richer cream, with a formula studied specifically so that lipids penetrate to the heart of the skin.

- **How do you recognize dehydrated skin?**

Telling signs of dehydrated skin:

- Feelings of discomfort and sometimes tightness
- Fine dehydration wrinkles in fragile areas (such as the eye contour)
- Skin that has lost its softness, elasticity and flexibility

Albeit exacerbated with age, the telling signs of dehydrated skin can also be observed in young skin. Lack of hydration prevents the cells from filling with water, which prevents young skin from preserving its naturally plump, full and smooth appearance.

- **How do you recognize lipid-deficient skin?**

Lipid-deficient skin is recognized by more marked criteria. The skin stretches every day, without exception, and has a dull appearance and a lack of radiance. The skin can also appear “rough” or even “scaly”. Lipid-deficient skin is associated with premature aging and worsens when the treatment is not suitable. It is therefore important to take care of it regularly.

II. The Biologique Recherche Solution

The skin's natural balance changes when faced with harsh external factors. That is why it is essential to restore it. Applying an excessively occlusive lipidic film to the surface of the epidermis would cause a reduction in the synthesis of epidermal lipids, which would weaken the epidermis. That's why it is necessary to provide a certain occlusion but without affecting the epidermal constitution, a balance that is very difficult to achieve.

It is with this aim that Biologique Recherche has developed the **Sérum T.E.W.L.**, a genuine lipid shield, which plays the role of "opposing water evaporation".
The core of its formula is composed of lipid-restoring active ingredients that capture hydration in the tissues, which in the long term alleviates dehydration and discomfort, while its protective and repairing active ingredients restore a good-quality skin barrier, enabling the skin to better defend itself against harsh external factors. This serum is particularly suitable for extreme cold and low-moisture conditions by enveloping the skin to nourish it intensely and ensure optimal comfort.
Recommended for undernourished and lipid deficient Skin Instants©.

Figure 2: Diagram of the Biologique Recherche facial treatment matrix

A- Action Platforms

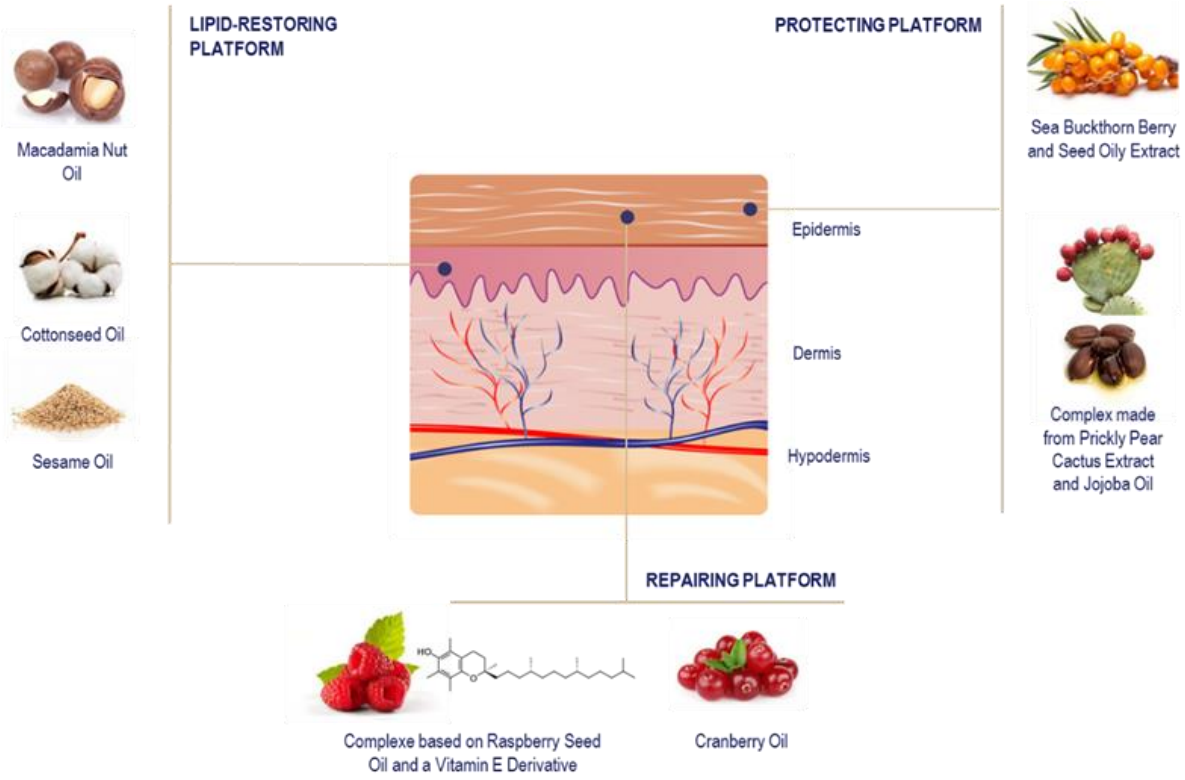


Figure 3: Sérum T.E.W.L. Action Platforms

B- Active Ingredients

▪ Lipid restoring platform

Macadamia Nut Oil

This oil is obtained by cold pressing macadamia nuts. Very rich in fatty acids, notably palmitoleic acid, it has moisturizing, nourishing and softening properties. Replenishing and healing, it also helps reduce the appearance of stretch marks, chapping, redness and scars. Very fluid, it immediately penetrates the skin without leaving a greasy film.

Cottonseed Oil

Cotton oil is obtained from cotton seeds. Naturally rich in omega-6 and -9 fatty acids, it has emollient properties and limits cutaneous Transepidermal Water Loss (TEWL). It thus contributes to maintaining the skin's integrity. Its Vitamin E content also allows it to have antioxidant activity to protect the skin from premature cutaneous aging.

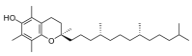
Sesame Oil

Sesame is a plant native to Africa, known for its oil-rich seeds. As it is rich in unsaturated fatty acids (linoleic and oleic acid) as well as vitamin E, Sesame Oil is a protective and antioxidant active ingredient which helps regenerate the skin and prevent cellular aging and skin dryness.

▪ Repairing platform

Complex based on Raspberry Seed Oil and a Vitamin E Derivative

This complex is rich in omega 6 and omega 3 and is obtained from raspberry seed oil; it also contains a vitamin E derivative. It has a powerful regenerative and revitalizing effect on the dermis and epidermis. Its comprehensive action promotes tissue regeneration from the dermis right through to the outer layers of the epidermis. It stimulates the skin repair process, helping to rebuild the support tissue and accelerating skin repair. The skin's barrier function is therefore improved, allowing optimum hydration levels to be maintained. It is therefore perfect for intensive repair of fragile, very dry or mature skin.



Cranberry Oil

Cranberries contain many small seeds, from which a vegetable oil is extracted. This oil is rich in vitamin C, vitamin E and essential fatty acids, which restructure the skin barrier and contribute to enriching the Natural Moisturizing Factor by helping the skin to retain water. It is not oily and leaves the skin looking matte and soft.

- **Protective platform**

Sea Buckthorn Berry and Seed Oily Extract

Sea buckthorn is a shrub native to the temperate zones of Europe and Asia. The large quantities of essential fatty acids it contains help regenerate the hydrolipidic film and thus reduce Transepidermal Water Loss (TEWL). In addition to improving microcirculation and restoring the skin's natural radiance, it also helps rejuvenate the skin. Furthermore, the levels of Vitamin E and carotenoids it contains give it antioxidant properties that protect the skin from photoaging, pollution and free radicals. Lastly, being rich in omega 3 and sterols, it soothes stressed, irritated skin and reduces inflammation.

Complex made from Prickly Pear Cactus Extract and Jojoba Oil

This complex is composed of Prickly Pear extract, a cactus adapted to desert conditions, and Jojoba Oil extract, a shrub adapted to arid climates. It prepares skin cells to react more quickly to the different stresses the body experiences. This stress can be caused by harsh external factors: sun, extreme temperatures, dry or polluted environments, chemical or mechanical irritations, lack of sleep, jet lag, strong emotions, hair removal, etc. By helping the body's cells adapt to unfavorable conditions, it helps prevent premature skin aging. In addition, it helps repair damaged skin tissues.

C- Benefits

- Contributes to rebuilding a good-quality skin barrier to stimulate the skin's defenses
- Creates a protective film to maintain the lipids on the surface of the skin and throughout the extracellular medium
- Protects the epidermis against extreme cold and low-moisture conditions
- Compensates for the fat deficiencies of the epidermis

EFFICACY TEST:

Testing by measuring the transepidermal water loss (TEWL) was carried out after a single application of Sérum T.E.W.L. on the stripped skin of 10 volunteers aged 23 to 67 years old.

Time (hours)	2	4	6
Variation of the TEWL vs control area	**-8.4%**	**-13.5%**	**-10.9%**

⇨ The test shows that the **Sérum T.E.W.L.** leads to a **significant reduction in TEWL** up to 6 hours after application. This also improves the condition of the skin barrier and hydration of the upper layers of the epidermis.

D- Usage Recommendations

In beauty salons:

After using the Lait, the Lotion P50, the Masque and the recommended Sérums, apply a small amount of Crème Dermo-RL to the entire face, neck and décolleté. Then apply 4 drops of Sérum T.E.W.L. instead of the usual Finishing Serum to the face, neck and décolleté. Massage gently with fingertips until it has been completely absorbed.

As part of a curative treatment:

2 to 3 times per week, morning and/or evening, for 28 days.

At home:

In place of the Finishing Serum, apply several drops of Sérum T.E.W.L. to the entire face, neck and décolleté. Massage with fingertips until it has been completely absorbed.

For better soothing and nutrition, mix several drops of Sérum T.E.W.L. with your usual cream if you want additional protection and, more particularly, in extremely cold and low-moisture conditions.

E- Major Selling Points

Sérum T.E.W.L. is a serum with a high concentration of **lipid-restoring, reparative and protective precious oils**. The joint action of the active ingredients builds a high-quality skin barrier and strengthens the hydrolipidic film so that the skin can better defend itself against harsh external factors. A genuine **epidermal shield,** its formula envelops the skin to nourish it intensely and ensure excellent comfort. Repaired and protected, the epidermis retains optimal hydration.

INCI LIST

COCO-CAPRYLATE/CAPRATE, COCO-CAPRYLATE, SESAMUM INDICUM (SESAME) SEED OIL, APRICOT KERNEL OIL PEG-6 ESTERS, MACADAMIA TERNIFOLIA SEED OIL, VACCINIUM MACROCARPON (CRANBERRY) SEED OIL, HIPPOPHÄE RHAMNOIDES FRUIT OIL, HIPPOPHAE RHAMNOIDES OIL, GOSSYPIUM HERBACEUM (COTTON) SEED OIL, ISOSORBIDE DICAPRYLATE, SIMMONDSIA CHINENSIS (JOJOBA) SEED OIL, RASPBERRY SEED OIL / TOCOPHERYL SUCCINATE AMINOPROPANEDIOL ESTERS, HELIANTHUS ANNUUS (SUNFLOWER) SEED OIL, OPUNTIA FICUS-INDICA FRUIT EXTRACT, ROSMARINUS OFFICINALIS (ROSEMARY) LEAF EXTRACT, CANANGA ODORATA FLOWER OIL, CITRUS AURANTIUM AMARA (BITTER ORANGE) FLOWER OIL, TOCOPHEROL, CHOLESTEROL, POTASSIUM SULFATE, BENZYL BENZOATE, BENZYL SALICYLATE, FARNESOL, GERANIOL, LIMONENE, LINALOOL.