CREME MASQUE VERNIX

TREATMENT STAGE

Product description:
Crème Masque Vernix: A revitalizing, repair and protective facial cream mask.
Skin Instants: Deficient or stressed skin.

Formats available and description of packs:
Retail Product: 50 ml pot
Professional Product: 100 ml and 250 ml pots

1 / Biologique Recherche Findings

In line with Biologique Recherche principles and to regain epidermal function, Dr Allouche and his team have been focusing on our epidermis’s very first protection. Even before we are born, from the 28th week of pregnancy, nature protects the surface of our skin with a sebaceous waxy substance called vernix caseosa (vernix meaning “varnish” in Latin).

24th week: Vernix forms, coinciding with the beginning of epidermal differentiation and the formation of the skin barrier.
Vernix acts as a beneficial barrier for immature skin, especially in premature babies. The skin of a newborn is not yet completely developed in the way that an adult’s is. The outer layer, the epidermis, is much thinner than in adults and consequently much more sensitive. The adipose layer under the skin is also not completely developed. A baby’s skin does not yet have sufficiently active sebaceous glands and therefore dries out easily. Added to that is the fact that the skin is not yet able to maintain its pH balance, so it is less protected against bacteria. All the layers of a newborn’s skin have been formed at birth, but they continue to develop during the first days, weeks and months of independent life, which is why more and more midwives only wipe off any excess vernix on a newborn’s skin, as it helps the epidermis mature.

**a- Properties of Vernix**

Vernix has many biological functions. The functions can be categorized into three periods:

- **The prenatal period**: During this period, vernix keep the fetus waterproof (vernix being hydrophobic), helps the skin form *in utero*, helps epidermal growth and provides antimicrobial protection.

- **During delivery**: Vernix acts as a lubricant, and provides antimicrobial protection.

- **The postnatal period**: Vernix helps in temperature regulation, facilitates the acidification of the skin surface in newborns, and has antibacterial, moisturizing, antioxidant, and cleansing properties. Vernix also plays a role in the healing of wounds.

**Focus on postnatal biological functions**

**Facilitates the production of an acid mantle in newborns**: At birth, the surface of the newborn’s skin must adapt to new environmental conditions (for example: reduced hydration). Vernix plays a modulating role in this process, permitting the acidification of the skin surface, facilitating the production of lipids, inhibiting the growth of pathogenic bacteria and facilitating the colonization of the skin by non-pathogenic bacteria (skin flora).

**Anti-infectious and protective functions**: Thanks to its fatty acid and antimicrobial peptide compounds, vernix possesses mechanical barrier properties against the passage of bacteria as well as anti-infection properties that inhibit the proliferation of certain organisms.

**Regulates transepidermal water loss**: Vernix is a hydrophobic material whose occlusivity is controlled, that is to say, is neither too high nor too low. Vernix releases its water slowly in a way similar to a water emulsion in oil. It ensures sufficient water for the enzymes of the stratum corneum to function properly, and for an effective skin barrier to form.

**Moisturization**: Vernix facilitates the production of NMF (Natural Moisturizing Factor). The high water content of the corneocytes that compound it also give it moisturizing properties.
Antioxidant properties: Vernix is composed of antioxidant molecules, especially Vitamin E, which help the newborn’s skin to withstand the oxidative stress of birth.

Wound healing, skin maturation: Vernix boosts the skin’s metabolism. When the skin is injured, the damaged cells release epidermal growth factors. Under the action of chemical messengers, the viable cells divide and migrate towards each other to mend the wound.

The vernix, a natural substance that protects our skin from birth and with advanced cosmetic properties therefore merits our full attention.

**b- Origin, Composition and Structure of Vernix**

Vernix caseosa is made up of **water, lipids and proteins**.

Structure: Vernix is composed of a dense arrangement of corneocytes composed of water surrounded by lipids forming a fine amorphous lipid matrix. The corneocyte structure is relatively permeable and facilitates the transmission of water and small molecules. Corneocytes play the role of cellular sponges. Between the corneocytes is a network of keratinous filaments, water molecules and lipids, as well as antimicrobial polypeptides surrounded by corneocytes.

**Water:**
Water is the main constituent of vernix. Vernix has an exceptional capacity to hold water for a long period. (It takes about 200 hours for the water content of vernix to go from 80% to 20%.) This is due to the fact that the water is located mainly inside the corneocytes. This special configuration allows the vernix to retain its water content for a long period of time.
Water loss occurs at two points: first, a phase of fast water loss (the water held in the lipid matrix). Then a second phase of slower loss begins (the water inside the corneocytes). And once totally dry, it is possible to rehydrate the vernix.

**Lipids:**
The lipids are located outside the cells forming a lipid matrix that surrounds the corneocytes. Some lipids come from the fetus’s sebaceous glands: triglycerides, phospholipids and sterol esters, cholesterol esters, wax esters, squalene and diols. Other lipids come from the fetus’s desquamated stratum corneum: long chain ceramides, cholesterol, free fatty acids.

**Proteins:**
An in-depth analysis has shown the existence of 41 proteins in the vernix caseosa: 39% are involved in the immune system and 29% have an antimicrobial action.

It has been shown that vernix contains:
- **antimicrobial peptides and proteins**: HNP 1-3 (Human Neutrophil Peptides), psoriasin (protein), SPLI (Secretory Leukocyte Protease Inhibitors) (proteins), calprotectin (calgranulins A and B) and the enzymes ribonuclease 7 and ribonuclease A.
- **immune system defense proteins**: members of the cathelicidin family LL-37 (protein) and the protein PLUNC (Palate Lung Nasal epithelial Clone) which originates in the fetus’s upper respiratory tract.
- **bacteriostatic proteins**: neutrophil lipocalin which originates in the mother’s uterus and in the fetus’s respiratory tract or skin.
- **proteins that play a role in the inflammatory response**: of the family of annexins. These proteins come from exchanges with amniotic fluid and are from the pulmonary system or from the dermis (desquamated keratinocytes).

**2 / The Biologique Recherche Solution**

As a result of this study, our Research and Development teams were inspired by the original composition of vernix.

Vernix is a cream mask that helps recondition the epidermis by offering it a “second birth”. Inspired by the first epidermal protection at birth, the formulation of this cream mask virtually reproduces the original composition of the vernix, thanks to a selection of active ingredients rich in lipids, proteins and antioxidant peptides. A revitalizing, repairing and protective treatment. Ideal for deficient and/or stressed Skin Instants©.
Diagram of the Biologique Recherche Face Care matrix:

**BIOLOGIQUE RECHERCHE CARE MATRIX**

**Preparation stage**

- Clean, balance, purify, prepare

**Treatment stage**

- Hydrate, stimulate, revitalize, refine, protect

**Actions:**

- Preserves and optimizes skin hydration, reduces transepidermal water loss. (According to the clinical trial performed by a dermatologist, skin is visibly hydrated after four weeks of treatment. The product raises the skin’s minimum hydration threshold by 15%).

- Smoothes dehydration wrinkles (Clinical evaluation: after four weeks of treatment, the product raises the skin’s minimum hydration threshold by 15% and skin smoothness by 17%).

- Minimizes the intrinsic and extrinsic effects of aging (objective factors).

- Restores and strengthens the protective barrier function of the epidermis, accelerates epidermal reconstruction and restructuring by boosting the repair capacity of damaged skin. (Clinical evaluation after four weeks of product use: the dermatologist found that the skin appeared visibly repaired.)

- Reestablishes homeostasis of the essential regeneration functions of the epidermis (objective factors).

- Protects and repairs the DNA of skin cells damaged by UV rays (objective factors).

- Skin feels softer (Clinical evaluation: after four weeks of use, the dermatologist found that skin was 14% softer.)
Effectiveness test: A formulation considered to be very satisfying, approved by a panel of 23 people testing it over a period of 4 weeks carried out by an independent test center.

4/ Formulation vectors and active ingredients

Active ingredients: Cell oligopeptides, Soya Lecithin, Complex of Ceramides and Omega 6 and 3 from Raspberry Oil, Luffa Oil, Complex of Ceramides, Plant-based Squalane, Lanolin Cholesterol (Sulfate), Placenta Extract, Carob Seed Extract, Yeast Extract, Antioxidant Tripeptide, Anti-ROS and anti-RNS Antioxidant.

1. Moisturizing (short- and long-term) and restructuring of the barrier function of the epidermis platform

Cell oligopeptides
Organic cell oligopeptides valued in cosmetics for their regenerating, nutritive and moisturizing properties. They also help in cell renewal and restructuring of the epidermis.

Soya Lecithin
A natural phospholipid that forms a protective film on the surface of the skin and helps to preserve hydration while reducing transepidermal water loss. This active ingredient helps restructure and repair epidermal cell membranes to allow skin to keep its original beauty.
Complex of Ceramides and Omega 6 and 3 from Raspberry Oil

Similar to ceramides, obtained from raspberry seed soil, rich in Omega 3 and 6. Thanks to its biomimetic structure (similar to intercorneocytory cement) this active ingredient vectorizes the unsaturated fatty acids in the epidermis (Omega 3 and 6) and optimizes their biological properties. Raspberry seed oil is 60% linoleic acid and 30% alpha-linoleic acid. Linoleic acid has soothing properties to ease skin inflammation from environmental aggression and that accelerates skin aging. Alpha-linoleic acid has a specific action on the limitation and release of neuromediators and the minimization of itching, indicated particularly for the treatment of sensitive, easily stressed skin.

This ceramide complex also restores and maintains the barrier function of the epidermis. It strengthens cohesion between the corneal skin layers, naturally stimulates ceramide synthesis (essential elements in intercorneocytory cement) and thus optimizes skin hydration, a consequence of the long-term strengthening of the barrier function.

Luffa Oil

Luffa (Luffa Cylindrica) belongs to the cucurbit family. This trailing and climbing vine produces a squash with black seeds. The oil is extracted from the luffa seeds by cold pressing. It is characterized by its composition of 72% short-chain polyunsaturated fatty acids, among which 62% are essential fatty acids: 60% linoleic and 2% gamma linoleic.

Its fatty acid content is close to that of the stratum corneum. This acid restores the normal lipidic state of lipid-deficient Skin Instants and rebuilds the fatty acid profile essential for the lipid barrier.

Ceramide Complex

This concentrate made up of various types of ceramides, cholesterol, free fatty acids and phytosphingosine is similar to the lipids in the multilayer stratum corneum. It boosts bioavailability and lipid transfer in the skin. Ceramides help restore the skin’s barrier function and increases hydration and protection of mature, dry or sensitive skin.

Plant-based squalane

The plant-based squalane is produced from olive oil. A clear liquid oil, it has strong affinity to the skin. Squalane is a lipid naturally produced by a mechanical process and one of the main components of sebum and the hydrolipidic film. Plant-based squalane prevents dehydration, restores skin suppleness and flexibility and limits transepidermal water loss. Soft and silky to the touch and non-greasy, it is an ingredient of choice in cosmetics.

Lanolin

Lanoline, which is wool oil, is a combination of fatty acids, sterols and cholesterols very close to those found in the epidermis. Lanolin supplements the lipid bilayers in the epidermis and thus naturally strengthens the skin’s barrier function. It is an active ingredient that increases the skin’s elasticity and hydration. Lanolin is used to repair lipid-deficient skin and also has antimicrobial properties.
Cholesterol (Sulfate)
Cholesterol Sulfate forms part of the lipids naturally present in the stratum corneum. It plays an important role in maintaining the structure of the lipid bilayer necessary for the skin’s barrier function and thus helps maintain the cohesion of the corneocytes (the cells of the stratum corneum). Its presence in the epidermis also helps stimulate desquamation.

2. Balancing and repair platform

Placenta Extract
Placenta protein is valued in cosmetics for its revitalizing, repairing and toning properties. This active ingredient also attenuates skin imperfections and helps regain glowing skin.

Carob Seed Extract
This carob seed extract (ceratonia siliqua) is rich in purified oligo-galactomannans. This active ingredient reestablishes homeostasis in the natural regeneration systems of tissues suffering from aging. It triggers the natural recovery and reorganization processes of damaged and tired tissues and accelerates epidermal and dermal reconstruction. It thus promotes the reestablishment of essential epidermal functions.
This ingredient activates the synthesis of the growth factors involved in the skin repair system and activates the synthesis of the characteristic marker of myofibroblasts then restores the migratory potential of cells, promoting the recolonization of damaged dermis and epidermis. It thus promotes recovery of effective barrier function following an aggression. It thereby boosts the repair ability of damaged skin and accelerates recovery of assaulted skin tissue. It is recommended for repair treatments.

Yeast Extract
Yeast is made up of mineral salts, carbohydrates, lipids and vitamins (rich in B vitamins). Its Vitamin B content gives yeast its skin-integrity qualities: it rebalances the skin and promotes healing of certain skin ailments (acne, seborrhea). Yeast also has antibacterial and restorative properties: it firms and smoothes the skin. It is an active ingredient used in treatments for seborrheic or dry skin and/or mature skin.

3. Protective and antioxidant platform

Antioxidant Tripeptide
This is a synthetic peptide with a dual purpose: it protects and repairs damaged DNA. By inhibiting the formation of carbonyl proteins, it acts as a photoprotector for dermal keratinocytes and fibroblasts. It protects skin cells against DNA degradation caused by UV rays and enhances the capacity of the DNA repair system. This antioxidant tripeptide is an active ingredient offering complete protection to minimize the effects of intrinsic and extrinsic aging.
Anti-ROS and anti-RNS Antioxidant
This is a molecule that plays a dual anti-radical role: It acts against oxygen-based free radicals (antioxidant properties – *in vitro*) and against nitrogen-based free radicals (antinitrosant properties). It thus detoxifies the skin (in terms of these two types of free radicals) and prevents lipidic peroxidation (*in vitro*), to obtain healthier skin with radiant color. Its long-term use slows cell aging.

5 / Directions

- **In a salon:**

  Crème Masque Vernix should be used in treatments for dehydrated and lipid-deficient Skin Instants.

  After using the cleansing milk, the Lotion P50, the Soin Lissant, apply Crème Masque Vernix as a thick layer like a mask. Work the recommended serums, with the Face Remodeling, on the mask in static. Do not rinse. Apply a small quantity of Sérum Yall O₂ on the entire face, neck and decolleté. Massage gently with fingertips, from bottom to top and inside to outside, until completely absorbed.

- **At home:**

  After using the recommended cleansing milk and Lotion P50, apply a small amount of Crème Masque Vernix as a thin layer in the morning and/or evening on the entire face, neck and decolleté. Massage gently with fingertips, from bottom to top and inside to outside, until completely absorbed.

  For a mask effect, apply Crème Masque Vernix as a thick layer. Leave for ten minutes then gently remove the excess using a damp cotton.

**Course:**

Apply as a 3-month course, after a few drops of Serum 3R, a dab of Crème Masque Vernix evenings for intense regeneration.

**Tip:**

After prolonged exposure to a harsh, cold or hot climate, or when the epidermis is very dehydrated, apply Crème Masque Vernix as a thicker layer like a mask.

6 / Key selling points

- A formulation that mimics the original composition of the newborn's vernix
- Respects the skin and helps the epidermis regain its original structure
- Visibly moisturizes the skin and protects from external aggressions
- Amazing soothing properties
- Visibly reduces dehydration wrinkles
- Rich in lipids and proteins
- Tolerance tested under dermatological controls
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