

GEL ADN SILKGEN

TREATMENT STAGE

Product description:

Gel ADN Silkgen: Revitalizing Face Gel

Skin types: For all Skin Instants requiring a light texture
Ideal for dehydrated and/or stressed Skin Instant

Available sizes and package descriptions:

Public size: 50ml Airless

Cabin size: 100ml Airless

1/ Biologique Recherche's report

a- Skin structure

The skin is the largest organ in the body, with a surface area of nearly 2m². This envelope contains three layers, from the deepest to the most superficial: the hypodermis, the dermis and the epidermis. The epidermis is between 2 and 3 mm thick and is avascular; it gets its nutrients by diffusion from the dermis. The epidermis has a protective function, serving as a defensive shield against external aggressions and microorganisms. The epidermis is primarily composed of keratinocytes (85%) but also contains melanocytes (5%), Langerhans cells (2-5%) and Merkel cells (6-10%).

Keratinocytes are formed at the deepest level of the epidermis, in the basal lamina. They then begin a complex migration process, flatten, lose their nucleus and rise to the cornified layer, the topmost layer, loaded with keratin.

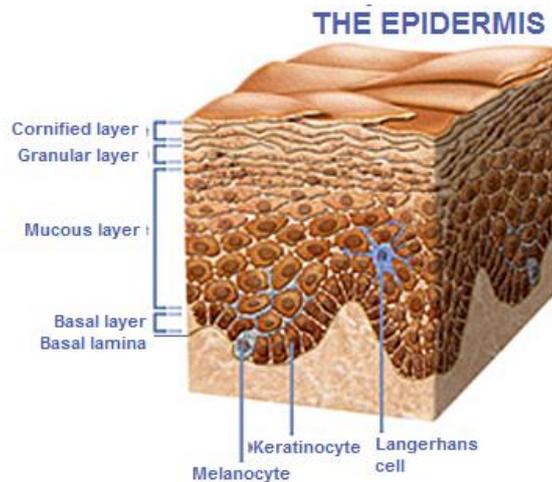
The epidermis itself is made up of four different layers:

- the basal lamina (the deepest layer, at the dermal/epidermal junction)
- the granular layer
- the mucous layer
- the cornified layer, also called the stratum corneum (the layer nearest the surface).

The cornified layer (Stratum corneum) is in direct contact with the exterior:

- It is made of between five and fifteen layers of cells.
- It holds water and extracellular constituents
- It plays an essentially protective role.

Even partial damage to the cornified layer can be life-threatening, as is the case for major burn victims for example.



b- Water loss

The cornified layer retains water, but is not completely impermeable. Two different mechanisms can cause skin to lose water.

- Sweating: this active mechanism serves to regulate body temperature. It allows the temperature to be kept stable despite variations in the outside environment. This emission of water is linked to the action of the sweat glands, which are located at the border, between the dermis and the epidermis, and to the vasodilation of skin pores.

- TEWL (trans-epidermal water loss) is a passive mechanism. It refers to the transmission of water from the dermis towards the cornified layer. This mechanism ensures the hydration of all of the layers of the epidermis. Once it has passed through the cornified layer, this water evaporates. The speed of this evaporation depends on the relative humidity of the environment.

c- Water retention

In cosmetics, we are concerned with the hydration or dehydration of epidermis. The dermis can also become dehydrated, but the diseases related to this issue fall under the medical domain.

In the epidermis

Various components help to retain water and ensure that the epidermis remains sufficiently hydrated:

The hydrolipidic film: (occlusive film)

This film acts as an external barrier which helps skin to retain water so its flexibility can also be maintained. It also fights against pathogenic microorganisms.

Hydrolipidic film is a water (hydro) and oil (lipos) emulsion.

It is made up of:

- Sebum, secreted by the sebaceous glands
- Sweat
- Water resulting from normal water loss
- Desquamating cornified cells

Lipids: (intercellular cement)

Lipids connect together the cells of the cornified layer (corneocytes): they play the role of a cement between the corneocytes.

These lipids ensure the integrity and the barrier function of the cornified layer by limiting water evaporation. They restrict the speed of transepidermal water loss due to their hydrophobic properties.

They are made up of:

- ceramides (40%)
- phospholipids
- free fatty acids (25%)
- cholesterol

Focus: Ceramides are a special type of lipids. These hydrophobic lipids have the ability to retain water because ceramides' molecular structure contains hydrophilic zones (OH grouping). These zones form hydrogenic bonds with water molecules. This special affinity allows ceramides to hold water molecules inside the body and capture others from the external environment.

NMFs (sponges)

In the stratum corneum, NMFs (Natural Moisturizing Factors) also capture water. They are able to absorb moisture from ambient air, even in very dry environments.

These compounds act as sponges and, through their hygroscopic abilities or through chemical bonds (between keratin and water molecules), are able to retain water in the stratum corneum.

NMFs are contained in corneocytes and are formed during epidermal differentiation.

They primarily come from degradation products from the keratinocyte metabolism and the degradation of filaggrin (a protein produced by keratinocytes in the granular layer of the epidermis).

The degradation of filaggrin is catalysed by a specific enzyme and produces a pool of free amino acids (primarily serine and citrulline). These amino acids form NMFs by combining with other compounds, such as urea, pyrrolidone carboxylic acid, lactic acid and various ions.

In the dermis (hydrated gel)

The dermis holds most of the skin's water. Its main cells, called fibroblasts, synthesize various molecules which constitute the basic substance of the extracellular matrix. This extracellular matrix is a kind of gel that structures the dermis. The basic substance is primarily composed of GAGs (glycosaminoglycans). These GAGs are sugars (polysaccharides) which are able to retain water. Hyaluronic acid is the most common GAG in the matrix. A gram of hyaluronic acid can hold between 300 and 500 ml of water.

d- Changes in skin hydration

Age, soap, tobacco, repeated sun exposure, pollution and weather have a daily effect on this natural hydrating mechanism.

Age: The metabolism changes with age. In women, these changes are usually linked with the decrease in sex hormones that takes place during menopause. These steroid hormones, estrogen and progesterone, are known

to stimulate fibroblasts (which are responsible, among other things, for hyaluronic acid synthesis) and sebum secretions. Their decrease thus leads to skin dehydration. On the other hand, the proliferative capacity of keratinocytes decreases with age, as does their speed of migration towards the surface. NMF and lipid synthesis decreases as a result. For example, it has been observed that lipid synthesis in the cornified layer is reduced by one third between 25 and 70 years of age.

Soap: Its recurring use alters the lipids in the cornified layer and dries out skin. Extended contact with water (with the exception of seawater) washes away NMFs and also dries out skin.

Tobacco: Tobacco increases the production of free radicals which accelerate skin aging. Tobacco smoke contains harmful substances that contribute to the degradation of hyaluronic acid and skin dehydration.

Pollution and sun exposure: Pollution, the use of pesticides and insecticides in our environment, increase oxidative stress. This disrupts the functioning of our cells and causes skin aging. Sun exposure and pollution can change the structural properties of skin and dry it out.

Weather: In the winter, the air dries out and leads to a mechanical increase in transepidermal water loss. The total quantity of lipids, especially ceramides, decreases during this period, letting skin dry out.

e- How to identify dehydrated skin:

Visual examination:

- Primary affected areas:
 - the sides of the face
 - the backs of the hands
 - the external surfaces of the forearms
 - the legs
- Visual analysis: skin is either dull and lacking in radiance, or transparent and reddens from the slightest irritation

Tactile examination:

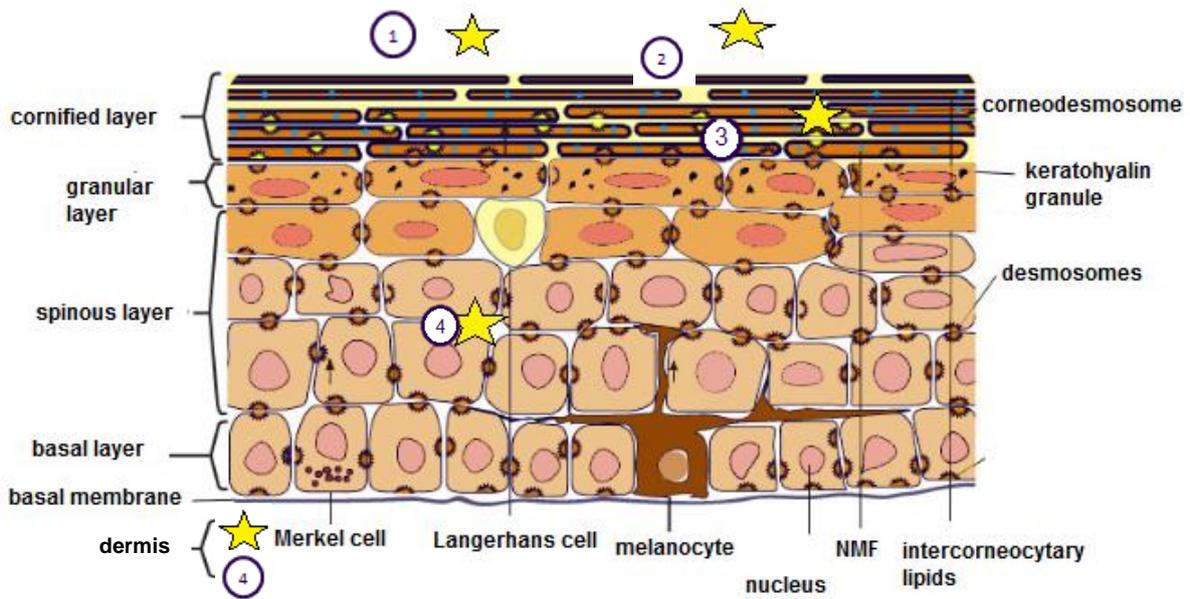
A loss of softness observed through light touches is a distinctive sign of dehydrated skin.

Pinching reveals fine skin on which slight flaking can be observed. The skin on the legs can occasionally appear "scaly".

These imbalances must be corrected by strengthening biological mechanisms of hydration. Daily hydration of the skin can also make a difference.

2/ Biologique Recherche's solution

Gel ADN Silkgen is a cool, hydrating gel that tones and softens skin. A subtle treatment composed of Salmon DNA, which preserves the moisture level of the epidermis, and Silk Proteins, a source of restructuring amino acids. From the first application it leaves your skin silky, rehydrated and radiantly fresh. Recommended for all Skin Instants requiring a light texture. Ideal for dehydrated and/or stressed Skin Instants and Ideal for travelers, people exposed to arid climates or following a plastic or cosmetic surgery procedure.

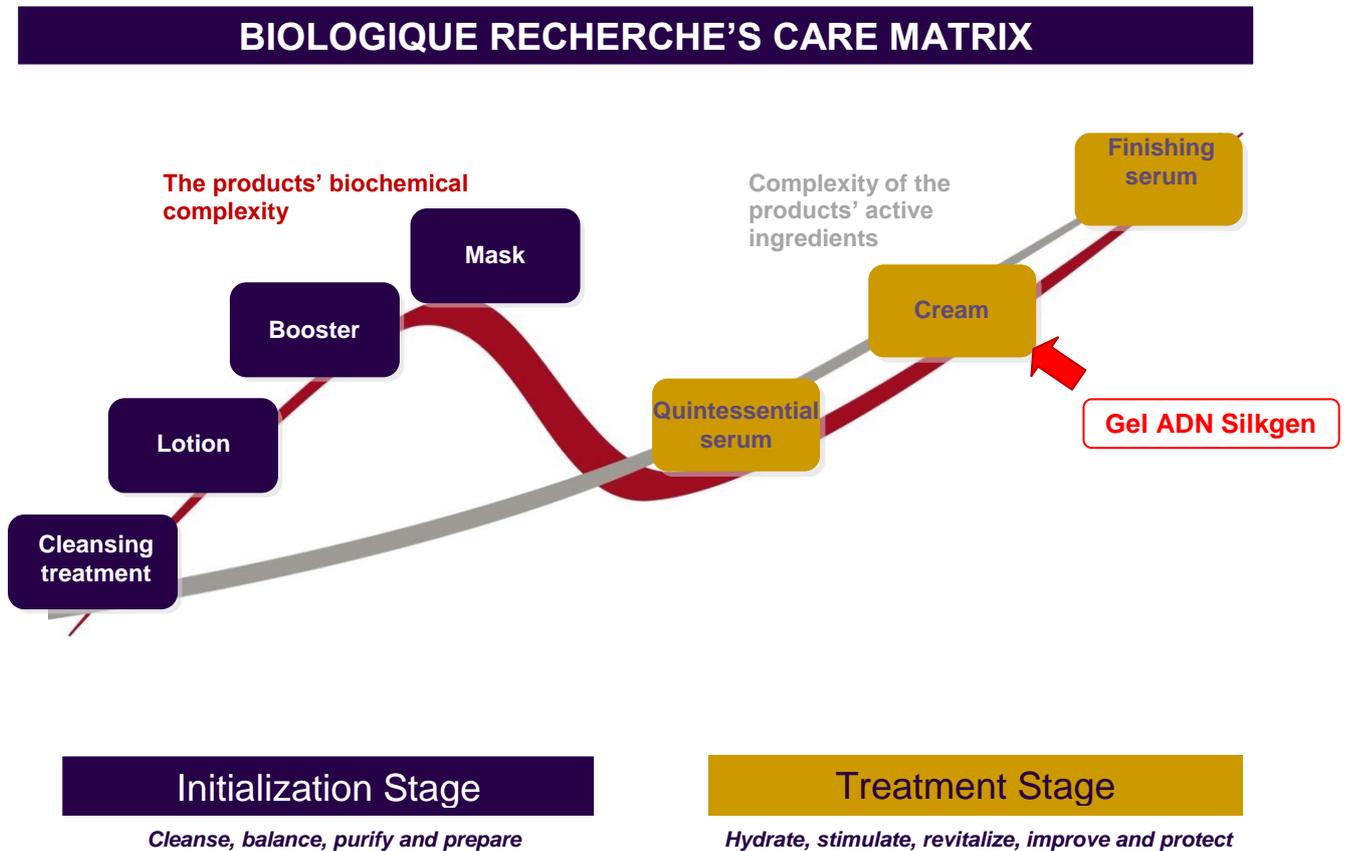


① and ② The Salmon DNA and Silk Extract form a protective film on the surface of the skin and trap water in the epidermis, ensuring proper hydration.

③ Prickly Pear Extract keeps water in the epidermis thanks to its water-retaining compounds.

④ The Tripeptide Antioxidant targets the keratinocytes' and fibroblasts' nuclei and repairs DNA which has been damaged by UV radiation.

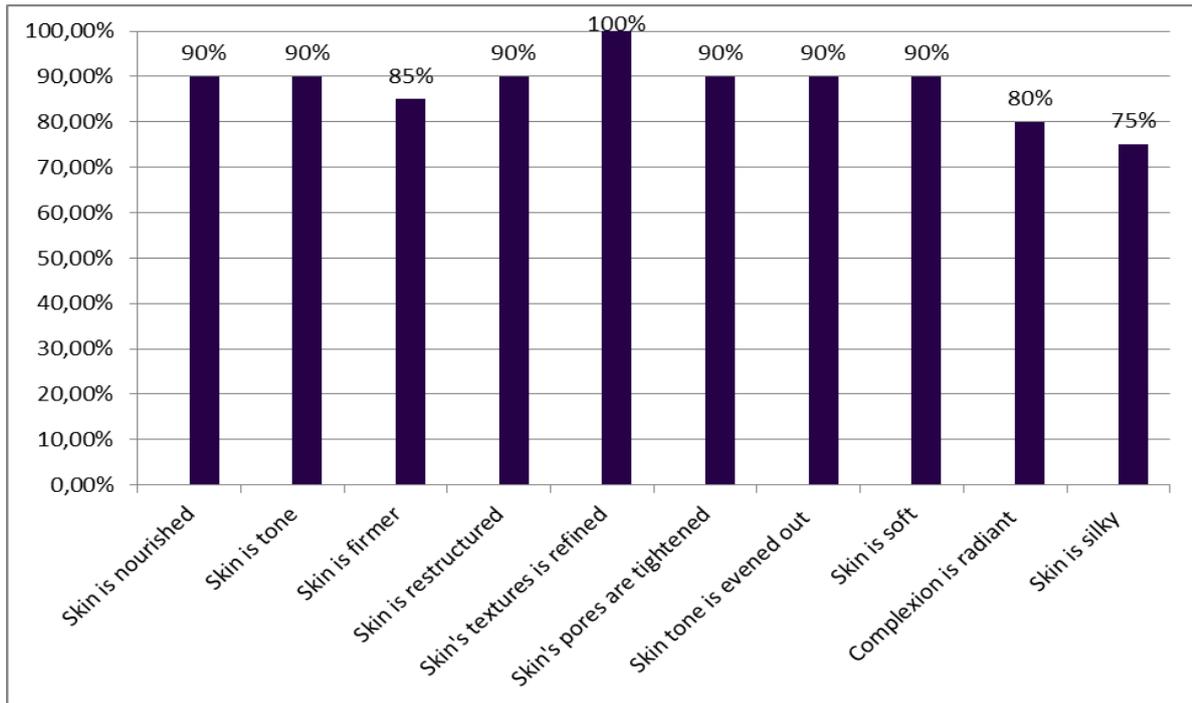
3/ Diagram of Biologique Recherche's facial care matrix:



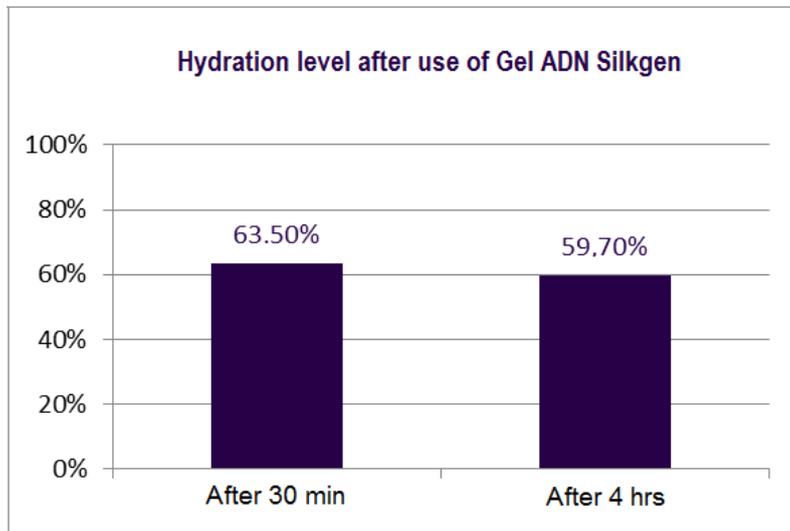
Actions:

- Intensely hydrates the upper layers of the epidermis.
- Soothes and softens skin.
- Reveals skin's radiance and refines its texture.
- Firms skin.
- Helps protect the skin against external agressions and cutaneous dryness.
- Helps minimise the intrinsic and extrinsic effects of aging.

Use test * :



Effectiveness test: The results obtained reveal a very good hydrating effect for the new Gel ADN Silkgen 30 minutes following application and up to 4 hours following application.



*Use test performed on a 20-person panel

4/ Axes of formulation and active ingredients

Active ingredients: Salmon DNA, Silk Extract, Prickly Pear Extract, Tripeptide antioxidant

A multipolar formulation combining an antioxidant action and a hydrating action.

1. Hydrating action

New

DNA

DNA (Deoxyribonucleic Acid), derived from salmon, has the form of a double helix. It is found in all cellular nuclei. The bearer of the genetic code, composed of chromosomes, DNA determines protein synthesis. Used in cosmetics for its high molecular weight, which gives it the ability to form a tight, protective film on the skin and prevent water loss from tissue.



Silk (Extract)

Silk is a protein made up of a polymer of amino acids. Because of their filmogenic action, silk proteins form a film on the skin's surface upon application, which produces an immediate smoothing effect. Silk also has a hydrating, firming and softening effect on skin.



New

Prickly Pear (Extract)

Rich in polysaccharides, vitamins, minerals and flavonoids as well as in pascidic acid, prickly pear extract combats epidermal drying while also preventing premature skin aging. This ingredient is widely used for its hydrating, antioxidant and firming properties. It is the weapon of choice for Berber women against the hot desert wind.



2. Antioxidant action

New

Tripeptide antioxidant

This is a synthetic peptide with a dual objective: to protect and repair damaged DNA. By inhibiting the formation of carbonylated proteins, it works as a photoprotector on the keratinocytes and dermal fibroblasts. It protects skin cells against damage caused to DNA by UV radiation and increases the capacity of the DNA repair system. This Tripeptide antioxidant is therefore an active ingredient that provides complete protection in order to minimize the intrinsic and extrinsic effects of aging.



5/ Recommendations for use

Apply Gel ADN Silkgen to the whole face, neck and décolleté after the application of the recommended Lotion P50 and the selected Quintessential Serums.

In the Summer, stored in the fridge, its fresh and fluid texture will perfectly hydrate the epidermis.

In the Winter, mix Gel ADN Silkgen with the adapted Cream to your Skin Instant to boost hydration and obtain a creamier texture.

A treatment to be used alternately with the Emulsion Gel Biosensible when following a plastic surgery or a cosmetic procedure (peeling, dermabrasion, laser, resurfacing).

6/ Main selling points

- A fresh, toning active gel that rehydrates the epidermis and smoothens wrinkles caused by dehydration
- A light, transparent, non-oily texture that is rapidly absorbed and that can be stored in the refrigerator to increase the effectiveness of the treatment
- Immediately after application, your skin is softer and more radiant
- Thanks to its antioxidant-rich formula, your skin is better protected from external aggressions.

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INCI List

Water (Aqua), Glycerin, Propylene Glycol, DNA, Opuntia Ficus-Indica Stem Extract, Hydrolyzed silk, Diaminopropionoyl Tripeptide-33, Butylene Glycol, Carbomer, Triethanolamine, Sodium Cocoyl Apple Amino Acids, Phenoxyethanol, Ethylhexylglycerin, Caprylyl Glycol, Disodium EDTA.