

## HIDROPEELING

It contains two main assets: urea and alpha hydroxyl acids.

### **UREA:**

Urea or carbamide,  $\text{CO}(\text{NH}_2)_2$ , is a compound of the family of aliphatic amides acids, that has multiple beneficial properties: it improves the immune barrier function by stimulating the production of antimicrobial peptides so it produces the activating of the skin's immune system, and improves flexibility by induction of collagen synthesis in the dermis.

It's a 100% natural compound present in our own body as a result of proteins metabolism. It's obtained from inorganic chemical compounds without animal intervention.



Physiologically, urea is formed in the liver as a result of termination of protein's metabolism, which is why its level is a very important parameter to measure. It has been discovered, that in addition it is one of the most effective natural moisturizers avoiding a great amount of affections in the skin.

Among its qualities it stands out the humectant effect, keratolytic at high concentrations, desquamative, antipruritic and antimicrobial. It increases stratum corneum's hydration and decreases the transepidermal water loss (TEWL). It can be applied in both healthy and damaged skin, increasing, compared to previous skin, hydration. In turn, it alters the physical and chemical properties of keratin by stimulating the penetration of other substances.

The use of hydropeeling includes:

- Skin's flexibility and elasticity
- Deep hydration of skin.
- Antipruritic and antimicrobial effect.

## **ALPHA-HYDROXY ACIDS:**

Alpha-hydroxy acids (AHA) are carboxylic acids with an alcohol function in alpha. It is found naturally in some eats such as sugar cane, apples, sour milk or grapes, and its anti-aging properties have been known for many years. Its composed of:

- Sodium lactate
- Sodium citrate
- Malic acid
- Tartaric acid
- Glycolic acid
- Sucrose
- Urea

AHAs exfoliate the dead cells by hydrating and improving the skin tone at same time, because it increases the water retention capacity. In turn, the also promote the collagen and hyaluronic acid synthesis, so it has a synergistic effect with water retention. In addition, the ability of natural hydration factors to fix water is partially linked to its AHA content.

Intercelular junction is constituted by glycosaminoglycans. These can capture large amount of water, but as they become superficial, there is less structures that can take place in skin peeling. Water is the universal lubricants and it's responsible of giving it elasticity.

This is the AHA's place, because its reduces the cohesion between corneocytes, that's difference of keratolytic agents, and favor hydration of corneum stratum, due to the presence of hydroxyl groups in their molecule, and improve its flexibility. In low concentration, it reduces the cohesion of corneocytes, but in high it penetrates to deepest part of epidermis, having a less specific effect. That's why it's attributed the property of being skin's protector. That's why its attributed the property of being skin barrier protector, because ir prevents transdermal water loss.

This corneocidal cohesion decrease cause a normalization of keratinization process and an increase in viable epidemis, which translates into a transitory exfoliation.

At dermal level, it induces the glycosaminoglycans and collagen fibers synthesis.

Therefore, daily use of alpha hydroxy acids, provides multiple benefits through its exfoliating, moisturizing, comedolytic effects and the preservation of cutaneous barrier. Therefore, it has the following properties: - Improves the epicutaneous softness and comfort. - Activation of the exfoliation, that renewing the superficial layers of the epidermis. - Reinforcement of the epidermal barrier due to increased acidity of the skin. - Improve the skin tone.

In our alpha-hydroxy acids complex are the following actives:

- **Citric acid**: it's found in citrus fruits such as orange and lemon. when you applied directly, it acts like a AHA, rather than as a pH regulator, exfoliating cells and improving the cells complexion.



- **Glycolic acid**: it's the smallest AHA and its extracted from sugar cane. It has a strong keratolytic action, being able to eliminate skin spots, and its concentration could be 4 to 70%, depending on whether it is for personal care at home or by doctor. It has a high moisturizing power in addition to stimulating the collagen production that provoques a better appearance of wrinkles and the skin stay firm. It's alpha-hydroxy acid most used in photo-aging. It has a problem, and with the passage of time it is necessary to increase the dose of glycolic so that the skin continues to obtain the same result, but in this complex of alpha-hydroxy acids, the union of several causes its activity to increase.

- **Malic acid**: it's another type of alpha hydroxyl acid, that found it in apples. It's found naturally and daily in our body, giving energy to the cell through the krebs cycle. It's used as natural preservative in some occasions and in toothpaste since it stimulates the production of fatigue. It has the ability to remove dead skin cells from the skin, making it finer, with better texture and improving the brightness of skin, in addition, the collagen production improves in cause of penetration, and has a synergistic effect with other acids such as citric and glycolic. It's not as irritating as other acids, so it can e used on sensitive skin.

- **Lactic acid**: It's found in lactic fermented products, produced by bacteria in fermentations and by the human body itself when is an overload of exercise. Like the rest of the hydroxyl acid, it has keratolytic properties, refining wrinkles, despigmenting the stains and giving a firmer and shiny appearance to the skin. It also improves and increases the lipid barrier of the skin since it has a capacity to capture water and keep it the interstitial spaces very high.

- **Tartaric acid**: obtained from grape secondary products. Like other AHAS it has preservative properties, but at higher concentrations, like the others, it has exfoliating properties of the skin.