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## PLUS EXTRA HYDRAMASK WITH ALGAE:

**Stimulating. Depurative.  
Cell re-vitalizing. Calming.  
Anti-inflammatory. Protective**



GLAMOOR PLUS EXTRA  
HYDRAMASK WITH ALGAE  
provides the **nutritious  
properties of seaweed,  
calming properties of  
Calendula extract** and  
also incorporates the latest  
advancement in cosmetics  
based on **epigenetics**. In  
addition to protecting  
against electromagnetic  
radiation and blue light

emitted by our smartphones and electronic devices.

**Laminaria extract** contains **vitamins A, B, C, D, E, K, amino acids, phytohormones** (plant hormones) and **minerals** (iodine, manganese and iron among others) that help improve the skin's natural beauty.

Due to its high content of **iodine and mucilage**, improves **skin healing and regeneration, reduces wrinkles and softens its complexion. It is also stimulating, re-vitalizing and anti-bacterial.**

**Phytoplankton extract** protects and repairs protein oxidation and helps the skin to purify itself and reduces the damage caused by aging.

To this complete and nutritious formula are added **two different types of clays: Kaolin and Bentonite Sodium, with exfoliating, cleansing and invigorating properties.**

GLAMOOR PLUS EXTRA HYDRAMASK WITH ALGAE is a **nourishing, protective, moisturizing, anti-inflammatory and re-vitalizing mask** that purifies the skin and restores it in depth. It combines the efficacy of **natural ingredients, of botanical origin and marine origin with Epigenetic Science.**

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**Epigenetics is the new scientific discipline** that allows influencing the behavior of genes to achieve optimal performance.

Today we know that the environment, our lifestyle, emotions ... in definitive, the history of the skin, generates epigenetic factors that influence decisively in our way of aging, more than the genetic inheritance itself.

The key? **COBIOGENOL**, an active ingredient from marine origin that acts like a chemical switch activating the genes "off" by certain epigenetic factors. Normalizing the generation of proteins necessary for the rejuvenation and regeneration of the skin, neutralizing oxidative stress generated by exposure to light and blue light, and re-structuring the stratum corneum, the outermost layer of skin, key in maintaining its Barrier and protective function.

## BIOACTIVE INGREDIENTS:

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### COBIOGENOL: Electromagnetic protection, protection against Blue-Light. Epigenetic Science

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**First active ingredient** focused on reducing the biological disorders produced by exposure to **Electromagnetic Radiation**.

Electromagnetic waves are a form of energy consisting in vibrations of electric and magnetic fields. We live in a sea of invisible electronic pollution, which is becoming toxic to our health.

We do not see or perceive them but are increasingly present in our domestic environment. Wherever we might be, non-ionizing radiation is all around us. We are constantly exposed to magnetic fields generated by appliances and domestic electrical installations: mobile phones, WIFIs, microwaves, television, radio, computers, etc.

As technology advances and the use of these devices increase, both at the workplace or private areas, our exposure to non-ionizing radiation is likely to intensify further.

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## ▪ Oxidative Stress

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The “**digitization**” of our world means that our **cells are exposed to a continuously increased level of non-ionizing radiation**, for which they have not adapted. In the last decade, **EMR (Electromagnetic Radiation)** levels have increased dramatically, and we are starting to realize its negative consequences. EMR is an environmental stress factor for human health, and skin as a

physiological barrier is the first objective of this radiation.

This exogenous stress leads to oxidative cellular stress, the formation of excessive reactive oxygen and nitrogen species and reaction products. It leads to a mitochondrial metabolic dysfunction: ROS causes a disruption of Mitochondrial function and cellular ATP Levels.

The **massive oxidative cell stress** leads to **chronic inflammation**. Several studies [1][1][3] have shown that skin exposure to cell radiation suffers several biological parameter alterations:

- ✓ Massive increase in free radical production (ROS)
- ✓ Massive Increase of pro-inflammatory cytokines
- ✓ Decrease in cell regeneration
- ✓ Reduction in structural proteins: key molecules involved in the stratification of the epidermis
- ✓ Lost in cohesion between keratinocytes
- ✓ TEWL increase: dehydration, the skin becomes more vulnerable and sensitive
- ✓ Stratum corneum weakening
- ✓ Disturbed skin refraction: lost in brightness, becoming dry and uncomfortable

**COBIOGENOL**, is a functional ingredient proved to reduce the skin biological alterations, resulted from the exposure to EMR.



It helps at the restoration process of the skin, being a specific anti-stress agent. It is a concentrated solution of purified marine glycogen, ready to use at cosmetic skin care preparations.

Glucose is the most important sugar at the cellular level. It plays a very important role in the energetic metabolism of the cells. Its energy is used at the restoration process of the skin.

## CLINICAL EFFICACY TESTS:

- **Effects of COBIOGENOL Preventing and protecting from Electromagnetic radiation-induced oxidative stress:**

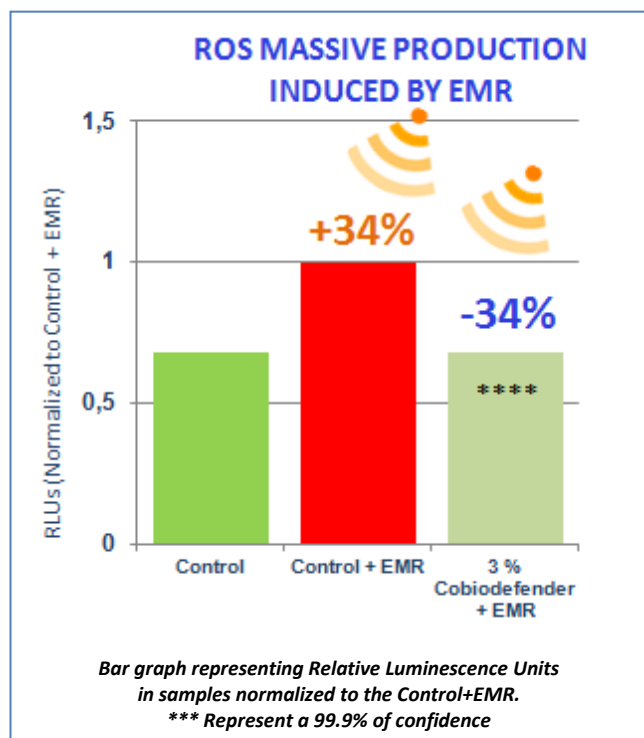


Several exogenous stimuli such as ionizing radiation, EMR, UV light, smoke, inflammatory processes and some human diseases trigger off free radicals production, causing severe damage in the mitochondrial membranes provoking the massive release of free radicals (ROS).

The goal of this study was to evaluate the capacity of COBIOGENOL in protecting cells from the damage caused by induced electromagnetic radiation (EMR), by reducing oxidative stress (ROS).

To this end, Human keratinocyte cells were exposed to 6 hours of EMR generated by a mobile phone to assess the response of skin cells to the induced oxidative stress and test the potential of COBIOGENOL to prevent EMR-induced ROS.

After 6 hours exposition, EMR induced ROS accumulation  $34,26 \pm 3,13\%$  and treatment with COBIOGENOL **reduced EMR-induced ROS production  $34,82 \pm 3,12\%$**  indicating a protective effect.



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## ▪ Cellular epigenetic rejuvenation

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### **Epigenetics is a new paradigm in the Science of Anti-Aging.**

It is the study of the mechanisms involved in the regulation of gene activity: the biological mechanisms that will switch genes on and off without altering their sequence.

Epigenetic change happens regular and naturally but can also be influenced by several factors including age, the environment (UV radiation, pollution...), lifestyle, emotions and diseases and much more that are yet to be discovered.

These factors discussed above, have the ability to "turn" or "turn off" certain genes, whose effects will be observed physically or physiologically.

The "on" or "off" effect of genes can be accomplished by three mechanisms:

- 1) **MicroRNAs**
- 2) Histone modification
- 3) DNA mutilation

### **What are miRNAs?**

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MicroRNAs (or "miRNAs) are chemical "switches". They are small fragments of RNA responsible for protein synthesis. These control mechanisms are key elements of epigenetic regulation. Its production is constantly modified by the environment and living conditions, including our emotions. MicroRNAs turn on and off numerous biological processes such as cell survival, skin repair, processes, hair growth...

### **Epigenetics and the future of skin care**

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We can regulate microRNA expression to rejuvenate. miRNAs are involved in regulation processes such as cell cycles, DNA repair systems, reactions to oxidative stress, apoptosis, etc.

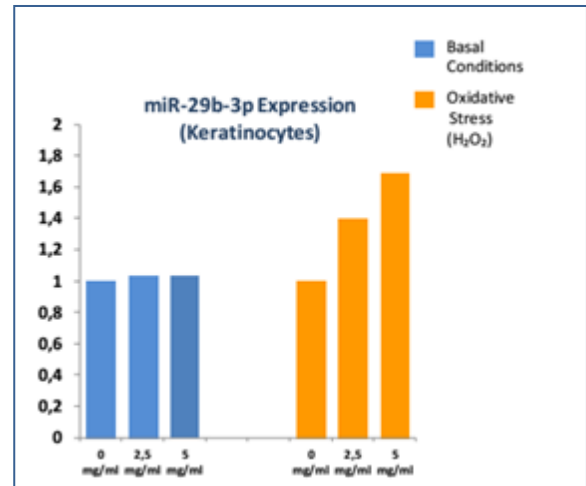
During aging and other external aggressions,

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chromatin ( the genetic material in the nucleus of our cells) becomes senescent and disorganized contributing to premature aging.

**COBIOGENOL is a natural epigenetic active ingredient** that can regulate microRNA expression. This means that it has the ability to act on the expression of miRNAs and **"switch on" or " switch off" certain genes.**

- By **in vitro assays in human keratinocytes** (skin cells), COBIOGENOL has been shown to have the ability to **rejuvenate cellular chromatin, making aging cells acquire characteristics of young cells.**



COBIOGENOL increases the expression of miR-29b-3p, a miRNA that **"switch on "**, or "activates" the synthesis of protein P53: **Protein guardian of genetic material**, which has a **potent antioxidant, anti-stress and anti-aging activity.**

- Under conditions of cellular stress induced by photo-oxidation (photo-aging) and oxidative stress, (by hydrogen peroxide), COBIOGENOL reduced the levels of **H3K79me3**, a miRNA considered as an **aging clock, inducing a cellular rejuvenation.**

### Summary of COBIOGENOL activity:

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- ✓ Protection of oxidative stress caused by electromagnetic radiation
- ✓ DNA protection and rejuvenation
- ✓ Anti-aging activity
- ✓ Aged cells acquire characteristics of young cells

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## LAMINARIA EXTRACT: Stimulating, re-vitalizing, Energy Booster, Antibacterial

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"Laminaria digitata L." Scientifically these plants belong to the family of brown algae.

Its content in **mineral salts and especially iodine stimulate** the **general metabolism** and cause an **increase in the osmotic exchanges** thus bringing about elimination of the excess fluids.

Cells require a **constant supply of energy** to generate and maintain the biological order that keeps them alive. ATP appears as a critically important macromolecule in the transfer of energy to cells.

A screening test was performed in order to evaluate the activity of Laminaria digitata, as **cell energy booster** through the **specific stimulation of the enzymes responsible for the ATP synthesis**. Its positive efficacy results in cosmetic application as an active to target dull and tired skins (Martin, 2006).

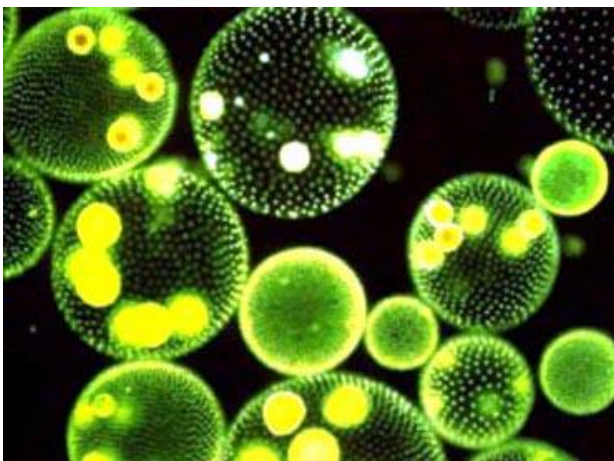
It also **provides minerals** like **calcium and magnesium** needed for good skin balance. By stimulating **optimal cellular performance**, prevents and treats the symptoms of aging, improving the firmness and elasticity of the skin, **minimizing the appearance of wrinkles**. Likewise, it has been attributed **antibacterial properties**.

Thus, Laminaria extract is of great use to formulate cosmetic products with skin tonifying, revitalizing and stimulating activities.

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## FHYTOPLANKTON EXTRACT: Stimulant, anti-oxidant, moisturizing, anti-inflammatory

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Plankton can be defined as a community of organisms that live suspended in the water.

**Phytoplankton** is a group of **microscopic plants** that live in the ocean, in freshwater and in other terrestrial aqueous systems.

**Phytoplankton is used in cosmetics for**

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**different purposes** and in a wide range of cosmetic preparations:

- **Antioxidant activity**

In the aging process, oxidative damage on proteins increases, leading to cellular dysfunction and senescence. In addition, UV radiation generates reactive oxygen species (ROS) on the skin, a process that correlates protein oxidation with photooxidative damage.

Each cell contains a proteolytic system known as proteasome, which is responsible for the degradation of oxidized proteins and for their restoration through proteolysis, an important process in many body processes.

The proteasome and its activity are affected due to aging and UV radiation, and cells accumulate oxidized proteins that cause ongoing damage on the skin. Therefore, there is an attempt to establish a new line of defense against oxidative damage by modulating the activity of the proteasome.

It has been demonstrated that phytoplankton, due to oligoelements and free amino acids, restores the activities of the proteasome and prevents the increase of oxidized proteins caused by UV radiation and aging (André, 2004).

Phytoplankton protects and repairs the oxidation of proteins and helps the skin to purify and reduce the damage caused by aging.

- **Moisturizing activity**



The loss of homeostatic capacity of the aged body depends on the quality of the communication among its cells, which is achieved through the GAP junctions. These junctions are protein channels in the cell membrane that connect the cells together. They allow ions and small molecules to move among the cells to balance the levels.

In the epidermis, the growth, differentiation, apoptosis and cell homeostasis are determined by the GAP junctions between keratinocytes.



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Several authors have demonstrated that UV radiation breaks GAP communication in keratinocytes and contributes to skin photoaging.

Thanks to phytoplankton, it is shown that the number of GAP junctions increases. In this way, it helps to restore and maintain skin homeostasis (André, 2004).

In addition, its protein and polysaccharide composition provides moisturizing properties through the formation of a non-occlusive film, and allowing the skin to synthesize the lipids required for barrier recovery, thus preventing water loss and maintaining skin homeostasis. Lastly, the presence of carbohydrates and free amino acids (serine) enables its incorporation in moisturizing products such as body creams, hand creams and bath gels.

The phytoplankton extract is a humectant agent which maintains homeostasis and enables skin re-epithelialization.

- **Anti-inflammatory activity**

**Polysaccharides and peptides from the Phytoplankton extract**, when applied topically, limit **erythema and skin irritation**, in addition to improving acneic skin. In in vitro studies on keratinocytes, it has been seen that this extract inhibits the adhesion of leukocytes and other inflammatory mechanisms, which may affect acne (André, 2004).

During an aggression such as **UV radiation**, skin defends itself by recruiting immune cells. Keratinocytes release cytokines and chemokines (**such as IL-8**). They express adhesion molecules (selectins, ICAM 1s) that enable leukocyte adhesion in endothelial cells and their release into the inflamed tissue to induce erythema.

The inhibition of leukocyte adhesion prevents the action of endothelial cells as inflammation amplifiers.

- It has been demonstrated that **phytoplankton inhibits IL-8**, ICAM 1s and leukocyte adhesion, ie that it reduces inflammation through a novel mechanism to soothe irritated skin.

Another important factor is the **inflammation** on acneic skin. It has been observed that Propionibacterium acnes induces IL-8, an inflammation promoter. In addition, acne inflammation is mediated by CD4+T cells with a high level of expression of ICAM 1s and leukocyte infiltration. Thanks to the peptide extract that limits this phenomenon, comfort in acneic skin can improve.

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Phytoplankton extract may reduce inflammation, in response to an aggression such as UV radiation, and it helps soothe irritated and reddened skin.

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### SODIC BENTONITE: Exfoliating, Vigorating

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**Bentonite clay** is a type of clay with numerous **medicinal properties**, originating of Fort Benton, in the heart of Montana, in the United States. Hence its name.

**Bentonite has been used topically for centuries.**

This clay helps to **exfoliate, clean and invigorate** the skin equally. It is very beneficial to moisturize the skin in depth due to the **high amount of minerals** that will act differently when the clay is applied to the skin.

The skin is more vital and young thanks to the elements contained in this clay, because they help to improve the skin's circulation. It is used to **combat acne, as an anti-aging treatment, as exfoliating and stimulating cell renewal, among others.**

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### KAOLIN: Astringent, detox, purifying

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Kaolin is a **very pure white clay composed of kaolinite** used in cosmetics as an absorbent of **oil secretions, moisture and impurities** that clog the pores and cause the formation of **imperfections**.

It has **softening properties** of the skin, has a **slight astringent effect and activates the blood circulation**.

By its gentle **exfoliating action**, it renews the cellular surface of the skin, eliminating impurities and dead cells.

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## ZINC OXIDE: Astringent, Anti-inflammatory

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**Zinc Oxide** is a **white mineral** in the form of a powder.

**The benefits of zinc oxide to the skin are countless**, including its **anti-inflammatory, astringent and drying properties**.

It has the ability to **adhere to the skin surface** and form a **protective film** that isolates the external factors that could damage it.

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## CALENDULA EXTRACT: Moisturizing, Re-epitalizing

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Calendula is one of the best-considered plants for treating sensitive skin.

It is one of the most recognized plants in medicinal treatments. It is composed of flavonoids and triterpenes whose properties are beneficial to treat the different conditions of the skin.

It is ideal for the dry and scaly skin as it moisturizes, rejuvenates the skin, improving its elasticity.

Los extractos de las flores de *C.officinalis* muestran un amplio espectro de acciones farmacológicas, de ahí la gran importancia de los extractos de caléndula en la cosmetología moderna [1].

- **Re-epithelizing and wound healing activity**

This is one of the most extensively used actions of calendula. It is due to the presence of polysaccharides (mucilage), flavonoids (especially quercetrin-3-O-glycoside), triterpenes and carotenes. These substances act on the metabolism of glycoproteins and on the collagen fibers. Creams containing calendula floral extract 5% in combination with allantoin, promoted remarkable epithelization with especial intensity on the metabolism of glycoproteins and collagen fibers during tissue regeneration.

More recent research suggested that the water extracts of calendula flowers, applied on skin wounds, play a role as micro-vascularization inducing agents, thus contributing to speed up healing [4].

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According to ESCOP, calendula (flower) is recommended for the local treatment of skin inflammation, and as a co-adjuvant in wound-healing [5].

The calendula extract polysaccharides have concentration-dependant adhesive effects (absorption effects) on the epithelial tissue of the oropharyngeal mucosa. This action contributes to its therapeutic effects to treat oropharyngeal mucosae inflammation ([www.fitoterapia.net](http://www.fitoterapia.net)).

For these reasons, the Calendula extract is highly recommendable to formulate cosmetic products with tissue regeneration action.

- **Moisturizing activity**



This activity of calendula is due to its saponin and mucilage content. These active principles have moisturizing properties (water retention and water release to the medium).

Due to its moisturizing activity, Calendula is ideal for formulating cosmetic products for the dry, irritated or delicate skin.

- **Anti-inflammatory activity**

The topical use of calendula preparations is rather extensive in cosmetics as well as in dermatology because of its **anti-inflammatory activity**. The clinical efficacy of this plant has been long demonstrated. In vivo studies using rats evidenced the anti-inflammatory activity (on inflammation induced by carrageenan and prostaglandin E1) and the inhibitory action on leukocyte infiltration.

Thus, Calendula is highly recommended to formulate cosmetic products for sensitive and/or irritated skin [6].

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- [1] Exposure to Electromagnetic Radiation Induces Characteristic Stress Response in Human Epidermis *Journal of Investigative Dermatology* (2008) 128, 743–746.
- [2] Non-thermal activation of the hsp27/p38MAPK stress pathway by mobile phone radiation in human endothelial cells: molecular mechanism for cancer- and blood-brain barrier-related effects. Leszczynski D1, Joenväärä S, Reivinen J, Kuokka R.
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