

# NEO-HELIXAN

## INCI Denomination:

Water, Snail Secretion Filtrate, Propylene Glycol, Glycerine, Glycosaminoglycans, Allantoin, Hydrolyzed Collagen, Pyridoxine HCL

## References in cosmetic products:

Neo Helixan is a powerful active ingredient, **natural and ecological**, extracted from a defensive liquid secreted by a mollusc (snails), combined with Glycosaminoglycans, Allantoin and Collagen.

It is known that already in the sixteenth century, Ambroise Paré, a surgeon of the French Kings and recognized to be the father of modern surgery, recommended snail secretion to treat the stretch marks after pregnancy.

In the twentieth century, 2 different paths lead to the consideration of the snail secretion as a promising active ingredient for cosmetics:

- In 1961, Doctor Abad Iglesias, a clinical oncologist from Madrid, studying the alterations of the radiotherapy treatments on patients, discovers that after applying X and gamma rays to a snail, it secreted a substance which helped it to heal the damages produced on its skin. Dr. Abad made studies during 10 years before applying the substance at a human. Some years after, the Russian government called him to treat burned victims of the Chernobyl accident, with an important success.
- In 1981 the owner of a farm in Chile, dedicated to grow snails, saw that the hands of his son were getting an unusual smoothness and there was a quick cicatrisation of his small wounds made while manipulating the cages. After 9 years of studies, the first cosmetic cream with snail secretion was launched at the beginning of the 90s.

These discoveries prompted studies to find out how the snail secretion could help skins damaged by acne, injuries, stretch marks, pollution or photo-aging. There are already several cosmetic products using this component in Europe and the United States with high success.

During the last years, a number of articles regarding the benefits of the snail slime have been published in fields like bone healing, lubricants or glues.

## Description:

### Snail characteristics

Helix aspersa (common garden snail) mollusc gastropod lunged helicoid, whose body is protected by a calcareous corneous shell and whose locomotion means is ventral. It has four nervous systems in four retractile tentacles that come out of the end of its head; these extensions serve as sensory functions.



This snail, has survived for over 600 million years to many different kinds of extreme environmental conditions, thanks to a secretion which defends its body and helps at its quick skin healing.

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The sense of touch is very well developed, considering that it relates itself with the world through it: it looks for its food, it detects humid conditions and optimal temperatures, it backs away from dangers and it stays alert around the changes in its environment.

When they are stressed, they produce a substance that is a rich complex which helps the animal to rapidly repair any damage to its skin. It contributes to their thermal regulation and to the constant hydration of the animal. It also reduces the risk against injuries to the snail external aggressions, mainly by bacteria and fungi, helping them to stay away from potentially harmful insects. This secretion also enters in the composition of the cover. When the snail retracts in its shell, for hibernation, this special secretion gets polymerized, in order to cover the entrance of its shell with a structure called opercula.

**This concentrated secretion is the one interesting as active ingredients** for cosmetic products, and the one subjects to the studies mentioned above. It is a complete and balanced solution for skin care products, created by a living creature to protect, restore, renew and hydrate its own skin. The mucus secreted by the snail without the stress action has no biological effects on the skin. It is just to help the snail to reduce the friction when moving.

### Use in Cosmetic products:

The actions of **Neo Helixan** are achieved thanks to its components:

- **Allantoin:** Natural substance with high capacity to stimulate the cellular proliferation and tissue reconstruction. It also can help to decrease dandruff scales thanks to its keratolytic action. It has a good capacity to penetrate in the skin.
- **Proteins:** Snail Secretion has proteins which composition is quite similar to the ones found in the skin. They contribute to the skin nutrition and to its smoothness, good texture and luminosity.
- **Vitamins:** Mainly vitamin A, C and E. It has anti-oxidant and anti-inflammatory properties. It also can help to reduce skin spots. At last, they can stimulate the collagen synthesis by fibroblasts.
- **Alpha-Hydroxy-Acids:** They are well known for its exfoliating action, helping at the renewal of the old and dead cells of the upper layers of the skin. Thanks to this the skin has better luminosity and is renovated.
- **Glycosaminoglycans:** They provide an excellent hydration and protect the skin against external aggressions
- **Proteolytic Enzymes:** They help at the protease/anti-protease balance in the skin, which are in charge of promoting the production and degrading collagen and elastin. These fibres are the responsible of the firmness and elasticity of the skin.
- **Collagen & Elastin:** Main fibres of the epidermis.

The **skin care activities** of Neo Helixan are:

- Removes dead and denaturated skin cells. Exfoliating action that encourages the formation of new skin.
- Antiseptic: Helps to prevent from skin infections protecting from certain strains from bacteria
- Promotes the synthesis of collagen and elastin
- Antioxidant: protection against free radical damages
- Increase skin elasticity
- Anti-inflammatory: Help to reduce inflammatory skin effects

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- **Moisturizer:** Provides moisture to the skin from the inside, as promotes the proliferation of Glycosaminoglycans

Thanks to the rich composition of the secretion, **Neo Helixan** can be used in cosmetic formulations with the following benefits:

- Delay premature aging of the skin
- Helps cicatrisation. It also assists in diminish queloids and stretch marks
- Fights against flaccidity and decreases cellulite problems
- Anti free radical
- Regenerates damaged tissues
- Decreases skin spots
- Improves significantly acne situations, helping to avoid bacteria growth
- Reduces inflammations in skin
- Improves the relieve of burns. Indicated for after sun exposures
- Skin moisturizer

### Cosmetic applications:

**Neo Helixan** can be used at cosmetic preparations for face treatment, as well as neck and hands products. It is highly recommended for sensible areas after suffering a damage produced by sun irradiation. It is also excellent for anti-acne formulations.

It is recommended for the following product lines:

1. **Anti-aging:** Creams and gels. It supplies nutrients and regenerates the skin's elasticity. It helps the supply of new cells exfoliating the old ones. The skin is more luminous, smoother and with less wrinkles
2. **After-sun, aftershave, and after depilation:** Skin that has suffered a strong aggression is regenerated faster. It helps the restoring actions of the skin cells
3. **Baby products:** Indicated for formulations to treat irritated areas of the babies. It helps avoiding new irritations and repairs the already produced.
4. **Anti-acne treatments:** It works destroying the bacteria which causes acne. It contains glycolic acid and regenerating elements which will help at the cicatrisation.
5. **Anti skin spots:** Its concentration in alpha-hydroxy-acids will accelerate the exfoliating process, decreasing the dark spots created at aged skins. Its content in Vitamin C will also help in the reduction of excess melanin
6. **Pregnancy and post pregnancy formulations:** The skin at pregnant women suffers intense hormone changes and a quick and intense stretch to hold the new creature. These effects can be decreased with a good moisturization and daily nutrition. The Snail Secretion will help to maintain the skin's elasticity, preventing from stretch-marks formation. It will also relieve the already existing ones

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## Dosage – Solubility – Processing

### A- DOSAGE:

The recommended dosage is from 1 – 5%

### B- SOLUBILITY:

Hydro soluble. Soluble with tensio-actives and alcohol mixtures

### C- PROCESSING:

Neo Helixan can be incorporated at the end of the cosmetic formulation.

## Analytical Data

- Aspect: Transparent pale liquid, with characteristic odor
- pH: 5 – 7
- Density (at 20 °C): 1,008 – 1,018
- Refraction index (at 20°C): 1,340 – 1,350
- Total proteins: 0,2 to 0,3%
- TOLERANCE: Very good. Tested under dermatological control
- STORAGE: Store at original package **at room temperature (15 to 20 °C)**, away from light and dry
- Shelf-life: 24 months

## Bibliography and studies

- Antibacterial activity of snail mucus mucin – Iguchi SM, Aikawa T, Matsumoto JJ, Dept. of Chemistry, Faculty of Science and Technology, Sophia University, Tokyo, Japan, 1981
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- The effect of Cryptomphalus Aspersa secretion on the assembly of the fibronectin extracellular matrix, J.L. Alonso-Lebrero, J.P. Pivel et al – Poster presented at the International Investigative Dermatology Congress, Miami 2003