

Keratin Hair Complex

DuoLife KERATIN HAIR COMPLEX is a 100% natural dietary supplement, developed to maintain the best condition of hair, skin and nails. A composition of patented, standardized and clinically tested raw materials, rich in antioxidants, vitamins and amino acids, contributes to the stimulation of hair and nail growth and supports natural skin functions.



When?

Hair falls out every day and this is a natural physiological process. However, if the number of hairs lost exceeds 100 a day and the excessive hair loss persists for more than a few weeks, it means that their condition has deteriorated. There are many causes of hair loss: improper diet, stress, smoking, past and present illnesses, hormonal disorders, anaemia, medication - these are the most common causes of alopecia. Also nails and skin suffer from the above mentioned causes; nail plates become thin and brittle and the skin loses its firmness and resilience - wrinkles appear, acne changes intensify and wounds heal worse¹.

In each of these cases, a proper, balanced diet and proper supplementation can support a better condition of hair, skin and nails.

DuoLife KERATIN HAIR COMPLEX dietary supplement is the optimal choice for use as a supportive preparation for people:

- ▶ wishing to maintain their hair, skin and nails in a good condition;
- ▶ prone to losing hair, both men and women;
- ▶ with thin, weak hair, with split ends;
- ▶ with fragile and brittle nails;
- ▶ with skin problems, such as acne vulgaris, difficult to heal wounds.

How?

DuoLife KERATIN HAIR COMPLEX contains plant extracts and juices rich in antioxidants and solubilized keratin, providing the body with valuable amino acids. The preparation helps protect and repair damaged hair, nails and skin.



DuoLife KERATIN HAIR COMPLEX - usage:

25 to 50 ml once a day, before meal.



Ingredients: guava purée, raspberry fruit juice, black rice and *Opuntia ficus-indica* flower extract formula standardised to provide anthocyanins (250mg/50ml), amla fruit extract standardised to provide Vitamin C, organic pea sprout extract (100mg/50ml), solubilized keratin (100mg/50ml), nettle leaf extract (70mg/50ml), grape seed extract standardised to provide polyphenols (50mg/50ml), field horsetail extract (50mg/50ml).

The vitamin C content in 50 ml of the product is 100 mg, which is 125% of the reference intake for an average adult (8400kJ/2000kcal).

Do not exceed the recommended daily intake. The product should not be used as a substitute for a varied diet. Balanced diet and a healthy lifestyle are the basis for proper functioning of human body.

Do you know how hair grows?

Hair are a product of epidermis. They owe their ability to grow to a hair bulb deep in the skin, which is the only living part of the hair. The bulb is located at the bottom of the hair follicle and consists of matrix cells surrounding the papilla; the papilla is innervated and vascularised. Normally functioning matrix cells produce keratinocytes forming a hair. The hair growth is cyclical; each hair follicle functions for 3 to over a dozen years, then it rests; the life cycle of hair follicle consists of three stages¹; these are:

ANAGEN - the active hair growth phase. During this stage, matrix cells in the hair follicle divide intensely to produce a new hair.

CATAGEN - the transient growth phase. The bulb dies, the hair proliferation processes are stopped, and its matrix disappears. The hair is pushed towards the skin surface.

TELOGEN - the resting phase. The hair follicle rests, and a hair slowly emerges from the skin. Usually, the bulb leaves the hair follicle spontaneously; however, in some cases it is pushed out by a new hair at the anagen phase.

In people with healthy hair, about 80% of hair is at the anagen phase, 1% at the catagen phase, and 19% at the telogen phase. Excessive hair loss is associated with an imbalance between the different phases of hair growth¹.

An extract of organic pea sprouts used in the DuoLife KERATIN HAIR COMPLEX formulation has a beneficial and clinically proven effect on hair and nails:

- ▶ reduces hair loss by 34% after a month, and by 37% after two months of its use at a daily dose of 100 mg*. A daily dose of the material used in the study is the same as in 50 ml of the product!
- ▶ contributes to the stimulation of hair growth by activating papilla cells, thus helping to restore the natural balance between the anagen and telogen phase of the hair follicle life cycle - as a result, the density of anagenic hair increases;
- ▶ supports the good condition of hair - to make it less brittle and shinier;
- ▶ contributes to faster growth and improved condition of the nail plate.

Why is the keratin contained in the preparation solubilized?

Keratin is a protein that is the main building block of hair and nails. Physiologically, however, it is insoluble in water and is not absorbed from the digestive tract. Therefore, water-soluble degradation products, called solubilized or hydrolysed keratin, are used in oral form. Such keratin retains the amino acid profile of the starting protein, including a large amount of valuable sulphuric amino acids. All amino acids are absorbed after oral administration and are a natural building block for hair and nail keratin^{2,3}.

The solubilized keratin used in the formula of DuoLife Keratin Hair Complex comes from sheep wool and has a clinically proven beneficial effect on hair, skin and nails:

- ▶ strengthens the hair, helps reduce hair loss;
- ▶ supports growth of healthy hair and nails;
- ▶ helps restore the natural balance between the anagenic and telogenic phases in the hair's life cycle;

- ▶ increases the content of amino acids (cystine, serine, methionine and glutamic acid) in the hair, having a positive effect on its structure and strength;
- ▶ increases hair lustre;
- ▶ supports optimum moisturising and elasticity of the skin, helps reduce wrinkles;
- ▶ contributes to reduction in nail brittleness.

How does the patented formula of black rice and prickly pear flower extract work?

Anthocyanins found in both of the materials have a strong antioxidative effect, protecting skin cells against free radicals (created, among others, under UV exposure) and the associated oxidative stress⁴⁻⁶.

- ▶ Prickly pear supports the skin's resistance, helps stimulate its renewal, supports wound healing and has an anti-wrinkle effect. The opuntia is also an inhibitor of 5 alpha-reductase of testosterone⁴. This enzyme may contribute to shortening the anagenic phase of the hair's life cycle and subsequent alopecia. Vegetable 5-alpha-reductase inhibitors, such as prickly pear and black rice, can support the treatment of alopecia, acne and excessive seborrhoea⁴⁻⁷. The combination of both extracts has a synergistic effect and the blocking of the enzyme is much stronger than for each of the extracts separately. This formula is patent-protected⁷.
- ▶ Black rice is the variety of rice with the highest antioxidant activity^{5,6}; it supports the antioxidant and protective effect of prickly pear on skin cells and hair follicles.

Fruits such as amla, guava and raspberry, as well as grape seeds support the condition of hair, skin and nails through their antioxidant properties.

- ▶ Amla (or gooseberry) is a valuable source of vitamin C⁸; this vitamin is essential for the synthesis of collagen in the skin and, as a powerful antioxidant, provides natural protection for the skin against the harmful effects of UV rays^{9,10}; amla also supports the condition of hair, helping to prevent graying and hair loss⁸; it also supports calcium absorption, affecting the well-being of nails, bones and teeth¹¹.
- ▶ Grape seeds contain a plenty of antioxidant polyphenols, which, among other things, can protect hair and skin from too early aging caused by sunlight^{12,13}; they also support anagen hair growth¹⁴ and have a protective effect for vitamin C¹².
- ▶ Guava and raspberries support the antioxidant effects of other plants, thanks to their content of valuable polyphenols and vitamin C; they contribute to hair and skin well-being, helping to fight infections and inflammation¹⁵⁻¹⁸.

What is the role of silicon contained in extracts from nettle leaves and horsetail herb?

- ▶ Silicon participates in the collagen biosynthesis, so it protects nails against cracking, contributes to skin well-being, by increasing its elasticity and elimination of fine wrinkles¹⁹.
- ▶ Furthermore, it strengthens walls of blood vessels increasing their flexibility, reduces permeability of capillary vessels and accelerates wound healing processes¹⁹.
- ▶ The level of silicon in the body decreases with age, resulting in graying of hair, brittleness of nails and hair and reduced resistance to infection¹⁹.

What makes DuoLife KERATIN HAIR COMPLEX different?

- ▶ **The liquid form of the preparation with the preserved biological background of the components**, facilitating the release of active compounds and their absorption into the bloodstream, as well as increased absorption, translate into more efficient distribution to the place of action (beneficial effect on LADME processes**).
- ▶ **The product is preserved using IHHP™ by DuoLife** – (Innovation High Hydrostatic Process™ by DuoLife), a method based on the concept of „minimal processing“. The advantage of the method is high health quality and durability and preservation of the natural nutritional and sensory qualities, compared to products preserved by classical methods. The technological process employed is conducted at a low temperature (to protect active ingredients) and is based on the principle of synergy of multiple fixatives, allowing to maintain the highest quality of the product without using preservatives.
- ▶ **100% natural ingredients**, including standardized raw materials with clinical trials.
- ▶ **Formulation prepared in consideration of the principles of synergy and antagonism.**
- ▶ **The product DOES NOT CONTAIN preservatives and is GMO FREE** - the raw materials used to develop the supplement ARE NOT DERIVED from genetically modified organisms.
- ▶ **The product is GLUTEN-FREE** - can be used by people with gluten intolerance.
- ▶ **Special bottle from pharmaceutical-grade glass** - the dark glass protects against light and temperature fluctuations, and is resistant to release of mineral substances from its inner surface.
- ▶ **Concentrated form** – making the supplement convenient to use once a day.
- ▶ **Umbrella brand** - the effect of liquid form is complemented by cosmetics with a high naturalness index from the DuoLife Advanced Formula line - SHAMPOO and HAIR CONDITIONER, intended for falling out, dry, damaged hair, with split ends and lack of shine.

 *The references for DuoLife Liquid Form Keratin Hair Complex can be found on a separate binder sheet.*

*The study was performed on a group of 21 volunteers with mild to moderate hair loss, taking a daily dose of 100 mg of raw material in oral form

**LADME – is an English abbreviation describing processes to which an active substance is subjected in the body: release from the preparation form -> absorption into a bloodstream -> distribution in the body -> metabolism -> excretion