



Photos: GELITA

## Collagen Peptides improve skin elasticity and reduces wrinkles

*Studies show convincing results how orally applied VERISOL® Bioactive Collagen Peptides® improve skin physiology. This makes it a perfect fit for the growing market of cosmetics.*

As human skin mirrors health and vitality like no other organ, care is of paramount importance. While topical cosmetics only reach the outer layers of the skin, the epidermis, nutricosmetics support the subjacent dermis and work from the inside out. Since beauty

and ageing are important issues for women aged 30 plus, such beauty-from-within concepts are creating new opportunities in the fast-growing nutricosmetics market. According to Global Industry Analysts, the worldwide nutricosmetics market will reach \$ 4.24 billion by 2017<sup>1</sup>. Thus, GELITA's innovative VERISOL® ingredient for beauty-from-within applications holds huge potential – especially for targeting female consumers who place great emphasis on their appearance. The product comprises pure, natural colla-

gen peptides which have been specifically developed to provide the highest possible efficacy in human skin.

**A long-lasting way to combat the signs of ageing >** In the human body, collagen accounts for 30 per cent of total protein and represents 80 per cent of the dry mass of the skin. Primarily located in connective tissue, it is responsible for giving the dermis its firm structure. During the ageing process, however, the skin suffers a loss of moisture and becomes increasingly dry. From the age of 30, the performance of skin cells called fibroblasts and thus collagen synthesis is reduced, and this intensifies after the menopause. Because of this, the dermis becomes thinner every day; the connective tissue loses its firmness and elasticity, and wrinkles and sagging occur. VERISOL® can slow down this loss and remarkably improve the skin's moisture content. The special amino acid composition of its collagen peptides enables VERISOL® to stimulate the fibroblasts in the dermis. This substantially increases synthesis of collagen, elastin and proteoglycans, all of which are essential for providing elasticity and resistance. As a result, the epidermis is supported from beneath and skin sagging is prevented.

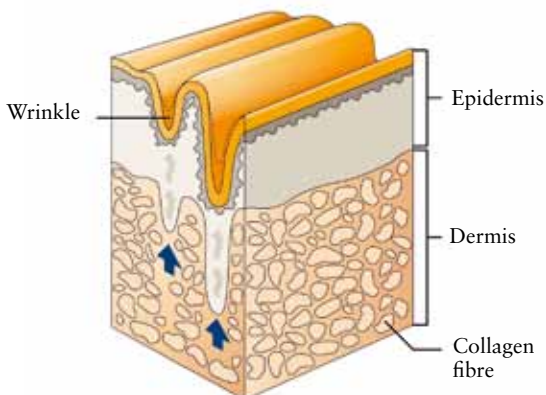


Fig. 1: With natural collagen peptides, VERISOL® reduces wrinkles and improves elasticity for a long-lasting, rejuvenated appearance

While topical beauty products reduce wrinkles only temporarily and conceal the signs of ageing merely for a while, daily intake of VERISOL® contributes to lasting rejuvenated skin. Collagen peptides of VERISOL® are absorbed, distributed and accumulated in skin where they stimulate fibroblasts to produce dermal extracellular matrix components, consequently improving skin elasticity and decelerating wrinkle formation. Taking the ingredient regularly makes the skin more elastic and means fewer wrinkles.

**Backed by science >** For the first time, the clinical efficacy of a specific low dosage (2.5 g/day) of collagen peptides on the improvement of skin physiology has been published.

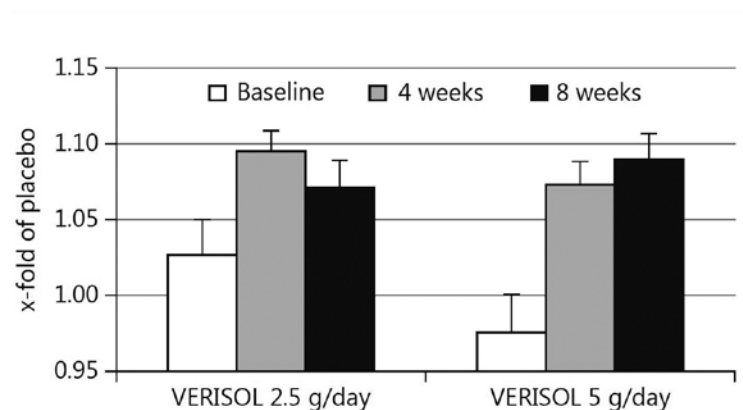


Fig. 2: Change in skin elasticity

VERISOL® Bioactive Collagen Peptides® are significantly improving skin conditions such as elasticity and wrinkles. Two new clinical studies proving the effect of VERISOL® on skin elasticity and wrinkles improvement has now been published. This is another important milestone for the development and marketing of natural products such as nutraceuticals which help to improve quality of life and it perfectly fits to the GELITA philosophy to substantiate product claims on solid science.

The first clinical study was designed to study the effectiveness of these specific VERISOL® collagen peptides on skin biophysical parameters related to cutaneous ageing. In a double-blind, placebo-controlled trial, 69 women aged 35–55 years were randomised to receive 2.5 g or 5.0 g of VERISOL® or placebo once daily for 8 weeks, with 23 subjects included in each treatment group.

Skin elasticity, skin moisture, transepidermal water loss and skin roughness were objectively measured before ingesting the product (baseline) and after 4 and 8 weeks of regular intake. Skin elasticity, which was of primary interest, was also assessed at follow-up 4 weeks after the last intake of VERISOL® (regression phase).

Skin elasticity in both VERISOL® dosage groups showed a statistically significant improvement in comparison to the placebo group after only 4 weeks of treatment. In some women a maximum increase of skin elasticity up to 30 per cent could be observed after an 8-week treatment.



Fig. 3: Visible reduction of eye wrinkle volume after 8 weeks of BCP intake. Exemplary pictures of 2 participants of the active agent group before (left) and after (right) treatment.

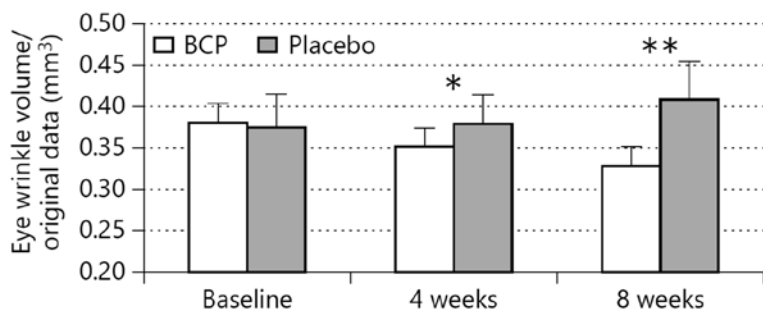


Fig. 4: Change in eye wrinkle volume VERISOL® (BCP) compared to placebo

In more detailed subgroup analysis it could be demonstrated that the positive impact of VERISOL® treatment on skin elasticity was more pronounced in women aged over 50 years. With regard to skin moisture and skin evaporation, a positive influence of the collagen peptide treatment could be also observed in elderly women.

The VERISOL® positive effect on skin elasticity was still detectable at the end of the 4-week washout phase, suggesting a long-lasting dermal physiological effect.

The second study demonstrated the effectiveness of VERISOL® on wrinkle reduction and synthesis of important dermal matrix components, including type I collagen, elastin and fibrillin. In a double-blind, placebo-controlled trial, 114 women aged 45–65 years were randomised to receive 2.5 g of VERISOL® or placebo once daily for 8 weeks, with 57 subjects included in each group.

Skin wrinkles were objectively measured in all subjects, before starting the treatment, after 4 and 8 weeks as well as 4 weeks after the last intake (4-week regression phase). A subgroup was established for suction blister biopsies analysing pro-collagen I, elastin and fibrillin at the beginning of the treatment and after 8 weeks of intake.

After 4 weeks of treatment the VERISOL® group showed a statistically significantly reduced eye wrinkle volume of more than 7.0 per cent on average. This positive effect was more pronounced after 8 weeks of intake (20.1 per cent,  $\Delta$  verum vs. placebo = 32.2 per cent). In particular a maximum reduction in eye wrinkle volume of 50% was achieved.

Four weeks after the last product intake (4-week regression phase), the VERISOL® treatment group still showed a statistically significant decrease in eye wrinkle volume of 11.5 per cent.

Pro-collagen type I content was increased by 65 per cent, elastin by 18 per cent and fibrillin by 6 per cent after 8 weeks of VERISOL® treatment. These findings clearly demonstra-

ted that VERISOL® treatment has a positive impact on important dermal macromolecules which have a direct influence on skin elasticity and wrinkle formation.

In summary it can be concluded that a daily intake of 2.5 g of VERISOL® has a beneficial impact on skin health, as indicated by a pronounced, statistically significant reduction in wrinkle volume and significantly improved skin elasticity. Moreover, data suggest that this positive effect is caused by the detected increase of dermal collagen, fibrillin and elastin synthesis.

**Women trust collagen >** Besides its scientifically proven efficacy, VERISOL® is also completely safe. It is exceedingly well tolerated and no adverse reactions have been noted. This fact is also reflected in a consumer research<sup>2</sup>: A total of 1,500 women aged 20 to 65 years were interviewed in Germany, Spain and the USA about their perceptions and acceptance of the natural ingredient VERISOL® and products containing it. VERISOL® and its effects were presented in the form of neutral verbal statements. The survey found that more than 80 per cent of the participants associated collagen with beauty, specifically in relation to connective tissue and elasticity. In general, most of the interviewees considered a beauty-from-within concept based on VERISOL® to be trustworthy and more effective than topical applications. The majority of the women were familiar with the term “collagen”, positively associating it with anti-ageing and perceiving it to be natural.

Furthermore, the women interviewed had clear ideas about the ideal application forms of such nutricosmetics: The ingredients should be easy to consume, readily absorbed by the body and neutral in taste and odour. VERISOL® Bioactive Collagen Peptides® fulfil all of these requirements, having been specifically developed for beauty-from-within applications.

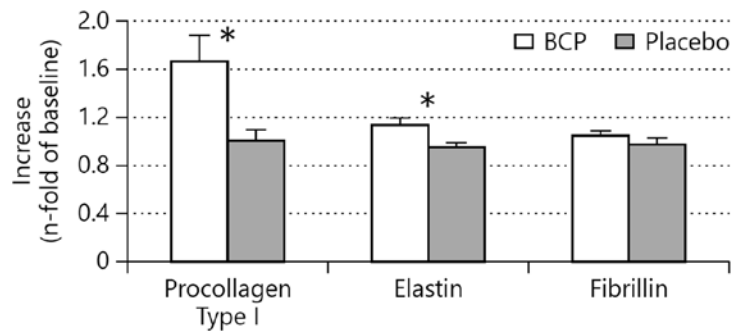


Fig. 5: Change in dermal macromolecules VERISOL® compared to placebo

### Regulatory situation after EFSA feedback >

As a result of the EFSA Health Claim discussions around VERISOL®, EFSA clarified the parameters necessary for a skin health claim for the first time. According to EFSA, an improvement in skin function needs to be shown which could e.g. be a skin barrier function. EFSA as well clarified, that elasticity and wrinkle Reduction are not classified as skin functions.

Wrinkle reduction and elasticity increase can be addressed without health claim, as a significant positive effect with 2.5 g VERISOL® is documented in peer-reviewed publications<sup>3</sup>.

Therefore no EFSA Health Claim for beauty-from-within claims with VERISOL® is necessary.

### Almost unlimited application forms >

The manufacturing process ensures that VERISOL® is highly soluble and almost neutral in taste. Hence, it can easily be incorporated into various types of liquid and solid functional food applications or nutricosmetics without compromising the sensory





profile – from collagen water and concentrated ready-to-consume liquid shots to tablets, capsules and flavoured powder mixes. Even luxury foodstuffs such as coffee drinks and chocolate can be enriched with natural collagen peptides, allowing for beauty care with a touch of great-tasting indulgence.

As VERISOL® peptides are hydrolysed to a specific short peptide length, they are easily digestible as well as highly bioavailable. Moreover, they are free from fat, cholesterol, carbohydrates as well as gluten and perfectly suited for use in non-allergenic foods. The nutricosmetics concept is also free from E-numbers, making it ideal for the development of clean label products, too.

Together the results of the two studies provide a sound scientific foundation for the development of innovative nutricosmetics, which are used by a growing consumer group to complement topical applications and follow a more holistic approach to skin care.

The two clinical studies were conducted by the Department of Dermatology, Univer-

sity of Kiel, and published in the journal *Skin Pharmacology and Physiology*.

(publication: <http://www.karger.ch/Article/Abstract/355523>

<http://www.karger.ch/Article/Abstract/351376>).

#### References >

<sup>1</sup>Global Industry Analysts (GIA) „Nutricosmetics: A Global Strategic Business Report” (September 2011)

<sup>2</sup>Institut für Zielgruppenforschung (IfZ) „Beauty from within – Qualitative & Quantitative Market Research“ (2011)

<sup>3</sup>Claims that do not qualify as a health claim or a nutritional claim within the scope of Regulation No. 1924/2006 will be measured along the general rules. Those are laid down in Article 2 of the Directive 2000/13/EC relating to the labeling, presentation and advertising of food stuffs and the respective national rules. The rules say that the labeling and marketing of a food must not be misleading particularly by attributing to the food stuff effects or properties which it does not possess and which are not scientifically substantiated.

This assessment may vary due to different view-point of national authorities and perception of said claim in respective EU languages and should be confirmed according to national legislation.

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