

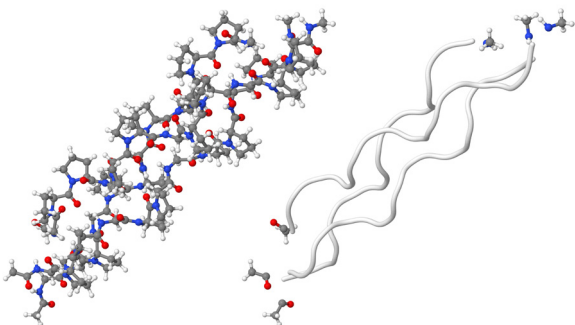


Naticol®
Fish Collagen Peptides

Naticol® fish collagen peptides to promote health, beauty and well-being

Interest in proteins across functional food and drinks continues to grow, with a rising demand for natural and healthy ingredients, particularly in sports, weight management and sarcopenia prevention. WEISHARDT, a world leader in health protein production, innovates by offering pure fish collagen peptides, Naticol®. The range of Naticol® products is designed for use in all functional food and beverages and also in nutritional supplements.

Naticol®'s efficacy is proven by scientific studies conducted in different areas: skin beauty (2 clinical studies), musculoskeletal condition,, weight management and much more. It is the health ingredient of choice for your finished product formulation anywhere in the world. Naticol® is pure protein (> 99% protein). As a protein, it will contribute to maintain the bone /muscular mass and to develop the muscular mass (EFSA claims). **The power of protein is undeniable and particularly, the efficacy of Naticol®, which shows high bioavailability and bioactivity in many domains: health, beauty and overall well-being.**



Naticol® key points

- Natural and UNIQUE fish collagen peptides
- Very high purity degree of collagen protein: 99,8% dry matter
- E-free (clean label), GMO free, Fat free, carbohydrates free, purine free
- Highly bio-available and bioactive
- Clinically and scientifically proven
- Water-soluble and excellent organoleptical profile (neutral taste and flavor)
- Produced in Europe under ISO 9001 / ISO 22000 standards



Weishardt



Collagen and Naticol®

Collagen is a fibrous macromolecule which is widely distributed in the organism and which represents 25- 30% of the total protein in the human body. Collagen is present in tendons and ligaments, cartilages, various membranes as those which are at the base of superficial tissues or epithelium, or those which ensure the filtration of blood in the kidneys. Collagen can also be found in special tissues which must be resistant and present particular properties like the cornea. Thus, collagen is one of the most abundant proteins in our organism. It takes part in the vital functions of almost all tissue systems and organs. Consequently, particular attention has to be paid to collagen.

“The uniqueness and specificity of the peptides contribute to the biological functionalities which are validated by in vitro / in vivo models and by human clinical studies.”

Naticol®, a natural ingredient produced by WEISHARDT, a world leader in health protein production, is composed of a UNIQUE collagen peptide profile (including di and tripeptides), resulting from the hydrolysis of $\alpha 1$ and $\alpha 2$ chains of type 1 collagen. Indeed, Naticol® is obtained from a rigorous selection of fish skins and specific white biotechnology process (enzymatic proteolysis), resulting from WEISHARDT's know-how. This biotechnology allows a UNIQUE collagen peptide distribution and amino-acid sequences. The uniqueness and specificity of the peptides contribute to the biological functionalities which are validated by in vitro / in vivo models and by human clinical studies.

Scientific studies conducted by French universities showed that Naticol® is highly assimilated. Naticol® presents excellent organoleptical properties, its neutral taste does not alter the formulation of functional food products such as beverages. Naticol® dissolves easily in aqueous phases and emulsions water-oil. It is a stable health ingredient which can be included into all formulations and which is available in two forms: fine powder and microgranulated.



Naticol® in functional foods

From gummies to capsules and tablets, Naticol®, natural and water-soluble, will bring a high added value to your products. WEISHARDT, a world leader in health protein production, offers an opportunity for functional foods and beverage producers to taste various Naticol® drinks, and to discover tasty sugar free collagen gummies. WEISHARDT, a world leader in health protein production, successfully met the challenge to incorporate in one product the pleasure without calories, and the health benefits from Naticol®.





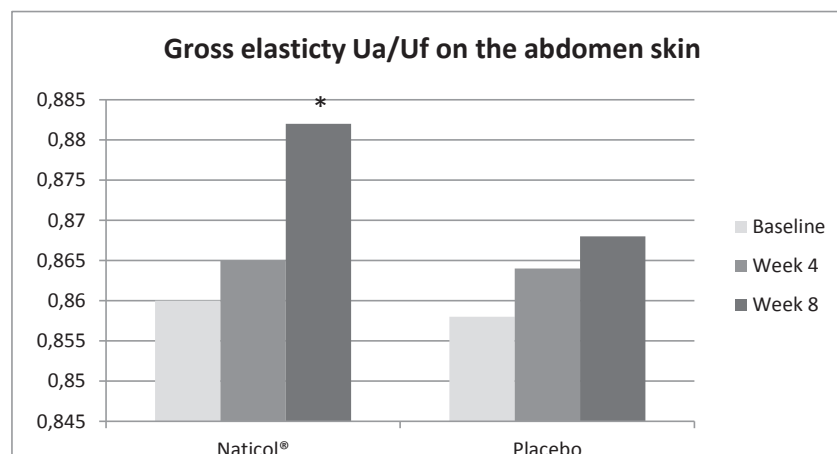
Beauty from within

Collagen is a substance organized into fibrils which can be found into dermal connective tissues (skin 70%). It contributes to skin firmness and smoothness. Collagen plays the role of a frame for the skin.

“ A significant 20% decrease of the face skin fatigue (residual skin deformation) and also a 22% decrease of the abdomen last amplitude ($p < 0,05$) ”

However, due to intrinsic (hormones, genetics) and extrinsic factors (nutrition, stress, smoking, UV pollution...), collagen structure can be disorganized and destroyed. Indeed, all of these factors generate oxidative stress through the production of reactive oxygen species (ROS). This oxidative stress leads to a cascade of events including inflammation, and to qualitative and quantitative loss of collagen (collagen fibers are fewer and depleted).

In a clinical study conducted by Hospital of Nice/ CPCAD, oral administration of Naticol® (5g/d) for 8 weeks showed a significant 20% decrease of the face skin fatigue (residual skin deformation) and also a 22% decrease of the abdomen last amplitude ($p < 0,05$). This last result may support product development dedicated to women after child birth (no breast-feeding) and men/women after weight loss.



Evolution of the gross elasticity (Ua/Uf) on the abdomen as a function of treatments. Naticol® induced a significant increase of the gross elasticity (mean \pm SEM, *: $p < 0.05$).



Musculoskeletal condition

With advancing age the musculoskeletal system loses both bone through osteoporosis, and muscle through sarcopenia. Osteoporosis is characterized by reduced bone mass and microarchitectural deterioration of bone tissue, with a consequent increase in the risk of fracture. Worldwide, the total number of hip fractures is expected to surpass 6 million by the year 2050 fracture, (Kannus P, Parkkari J, Sievänen H, et al. epidemiology of hip fractures. Bones 1996; 18:57). Sarcopenia is considered to be one of the major factors responsible for functional limitation and motor dependency in elderly people. Both processes play crucial roles in frailty syndrome and the outset of disabilities in elderly subjects.

“ The results of this study demonstrated the positive effects of ingestion of Naticol® on the muscular mass.”

With its scientific Research partner, INSERM Toulouse (National institute for Health and medical Research), WEISHARDT, a world leader in health protein production, has evaluated the effects of its fish collagen peptides Naticol®, on muscle and bone condition. In this study, ovariectomized female mice having developed a model of osteoporosis were used. The mice received a normal daily diet containing 2.5% Naticol® for 14 weeks. The results of this study demonstrated the positive effects of ingestion of Naticol® on the muscular mass. Moreover, muscular force was increased by 17 %! The results of this in vivo study also showed that the mineral bone density tended to increase.

Weight management

Today, any debate on health must consider the problems associated with being overweight or obese, a problem afflicting western nations. Overweight and obesity represent an important public health issue. Being overweight or obese can lead to both chronic and severe medical conditions. More recently, in-vivo studies conducted by INSERM- Toulouse regarding weight management showed that **in a high fat diet, Naticol®, the fish collagen peptides produced by WEISHARDT, may decrease by 33% the fat mass gain and maintain the lean and total water mass compared to control mice group, after 9 weeks.**

“ May decrease by 33% the fat mass gain ”



Weishardt



Naticol®
Fish Collagen Peptides

Innovation : Gelatine Flakes and Instant gel

WEISHARDT, the world's health protein provider, invites you to discover its 2 innovative texturing solutions : Gelatin Flakes and Instant Gel. These new clean label products can replace leaf gelatin. Gelatin Flakes and Instant Gel offer guaranties in term of availability, are easier to use and allow for costs saving in formulations.

> Gelatin Flakes and Instant Gel are available immediately.

WEISHARDT today

WEISHARDT is a French company with more than 170 years of experience in the field of the collagen. It is a world leader in the production and sale of collagen products.

Weishardt's innovative fish collagen peptide products are registered under the trademark Naticol® and are mainly directed to functional food & beverage applications, cosmetofoods, nutraceutical and well-being products.

WEISHARDT is supported by Europe and Region Midi- Pyrenees to invest more than US\$ 2 million grant for research in fish collagen peptides. Innovation is the key force of the company that continuously looks for innovative and new health solutions to provide to its customers.



For more information, please contact :

WEISHARDT INTERNATIONAL

Rond-Point Georges Jolimaître - BP 259

81305 Graulhet Cedex - FRANCE (FR)

Tel : + 33 (0)5 63 42 14 41

welcome@weishardt.com



Weishardt

