PlanoxR Plus

Effective Support for Healthy Joints

Hydrolized collagen: The unique supplement for joint nutrition and cartilage build-up

Planox L: Lemon verbena extract with antioxidant and anti-inflammatory activity

PlanoxR Plus: is a dietary supplement that combines the unique efficacy of collagen with the anti-inflammatory activity of Lemon Verbena extract to yield a new, fast acting and highly efficacious joint health product (international patent pending on the combination of hydrolyzed collagen and Lemon verbena extract).

PlanoxR Plus is a ready-to-use product available for licensing in the EU including Switzerland, Asia and the US.

Applications and Advantages:

- Fast acting and highly efficacious
- Sustained excellent solubility in cold and warm liquids
- Overall Wellness for Joints and Bones

- For active people (younger generation)
- For people experiencing problems with their joints (young and old generation)
- For dietary supplements or for powder blends
- For functional foods such as for dairy products, beverages, bars, etc.
There are an increasing number of people experiencing problems with their joints. Wear and tear of joint cartilage is the likely result of increased body weight, sedentary lifestyle with lack of physical activities, but also excessive sports. Without doing anything against it, joint problems start limiting flexibility and mobility and may lead to arthritis later on. With approx. 10% of the EU- and US-population suffering from arthritis, it is the leading cause of disability in the Western countries. The most common form of arthritis (40% of all incidence) is termed Osteoarthritis (OA).

What are the requirements for an optimal joint health product?

§ improve joint mobility and flexibility
§ rebuild and nourish joints, i.e. promote joint cartilage repair and regeneration
§ improve overall well-being (including sense of pain)
§ balance the body’s inflammation response

Hydrolized collagen is a highly efficacious supplement, well known to support the repair and regeneration of joint cartilage as proven in several human studies. It was shown that it may help to ameliorate some of the effects associated with wear and tear such as abrasion and deterioration of the joint matrix.

Hydrolized collagen is produced from the protein collagen by a controlled and mild enzymatic hydrolyzation process. This gentle process yields an unique and characteristic mixture of short-chain peptides of low mean molecular weight (approx. 3 kDalton corresponding to a mean chain length of 25-30 amino acids). Hydrolized collagen is spray-dried into a convenient agglomerated form, which offers excellent solubility and taste. Due to its specific protein source, the amino acid composition of hydrolyzed collagen closely resembles that of collagen in joint cartilage thus serving as an excellent source of building blocks.

To synergistically advance the joint health effects of hydrolyzed collagen, Anoxymer and Cargill developed a product which combines both, rebuilding and anti-inflammatory properties. While inflammation is a natural and important physiological process, it sometimes might hamper regeneration. Combining hydrolyzed collagen with the anti-inflammatory extract of Lemon Verbena, Planox\textsuperscript{R} Plus aims at shortening the period of time until its health benefits can be experienced. Rebuilding of joint matrix normally takes some time and thus improvements need a certain time period to become fully apparent (several weeks to months). Balancing inflammation with the help of Lemon Verbena extract in addition to the nutritional rebuilding of cartilage helps people to feel health improvements earlier.

To test for its properties, Planox\textsuperscript{R} Plus was compared to hydrolyzed collagen and to Lemon Verbena extract. Improvements in joint health had been evaluated by the golden standard assessment tools Lequesne Index and WOMAC Index.

One of the most impressive results was that Planox\textsuperscript{R} Plus continuously exhibited the highest improvements within the functional index (Lequesne Index), as can be seen throughout the whole period of study time (see fig. 1 below).
Moreover, it could be demonstrated by the WOMAC questionnaire that with Planox® Plus onset of significant improvements (time to feel the benefits) was 50% faster than compared to collagen or lemon verbena extract alone (see fig. 2 below).

Fig. 1: Lequesne functional index score differences. Collagen plus lemon verbena extract (Planox® Plus) continuously showed the highest improvements.

Fig. 2: Time to onset of significant improvements (p < 0.05) as measured by WOMAC-Index. Collagen plus lemon verbena extract (Planox® Plus) is 50% faster than compared to collagen (Arthred™) or the lemon verbena extract (Planox® L) alone.
Joint problems are typically associated with an emerging sensation of pain which impairs overall well-being, in particular during nights (finding no sleep). Reduction of pain and discomfort during the night is of special importance, as it should ultimately lead to better sleep and thus further improves overall well-being.

Planox® Plus not only showed the highest improvements within the pain index during the study but also most effectively reduced feelings of pain and discomfort during the nights (see figure below).

Thus, the human study clearly showed that Planox® Plus fulfills the criteria important for an optimal joint health product. While it maintains its superior physical properties such excellent solubility in cold and warm liquids, Planox® Plus offers:

- faster improvement of overall well-being (including sense of pain)
- improvement of mobility
- rebuilding of cartilage: promoting joint cartilage repair and regeneration
- watersoluble dietary supplement which is dissolved in water or fruit juices
- one sachet contains 1g Planox L and 5 g hydrolyzed collagen
- 1x sachet per day

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