TRICOMBO

BIOPORT

Complete single injection product for symptomatic treatment of OA, restoration of articular cartilage and maintenance of healthy joints

UNIQUE COMBINATION
OF NATURALLY CROSS-LINKED
HYLAURONIC ACID + CHONDROITIN
SULFATE + N-ACETYLGLUCOSAMINE

BIOPORT TRICOMBO | NEW

It is a biological matrix in the form of a sterile, viscoelastic solution containing Sodium hyaluronate and Chondroitin sodium sulfate – two physically cross-linked agents, highly purified polymers and N-acetylglucosamine (NAG), a natural amino acid.

36 mg hyaluronic acid per syringe (16 mg / ml)
67.5 mg chondroitin sodium sulfate (30 mg / ml)
67.5 mg N-acetylglucosamine (30 mg / ml)
pre-filled single use syringe of 2.25 ml

Composition	Sodium hyaluronate, Chondroitin sulfate, N-acetylglucosamine
Concentration	36 mg/67.5 mg/2.25 ml 1.6%/3%/3%
Administration total	1 syringe at 6 months
Average molecular weight	3MDa
Elasticity mode G' in rest 0,5 Hz / running 2.5 Hz.	250 Pa / 490 Pa
Viscosity mode G“ at rest/running	190 Pa/275 Pa

BIOPORT TRICOMBO | PROPERTIES

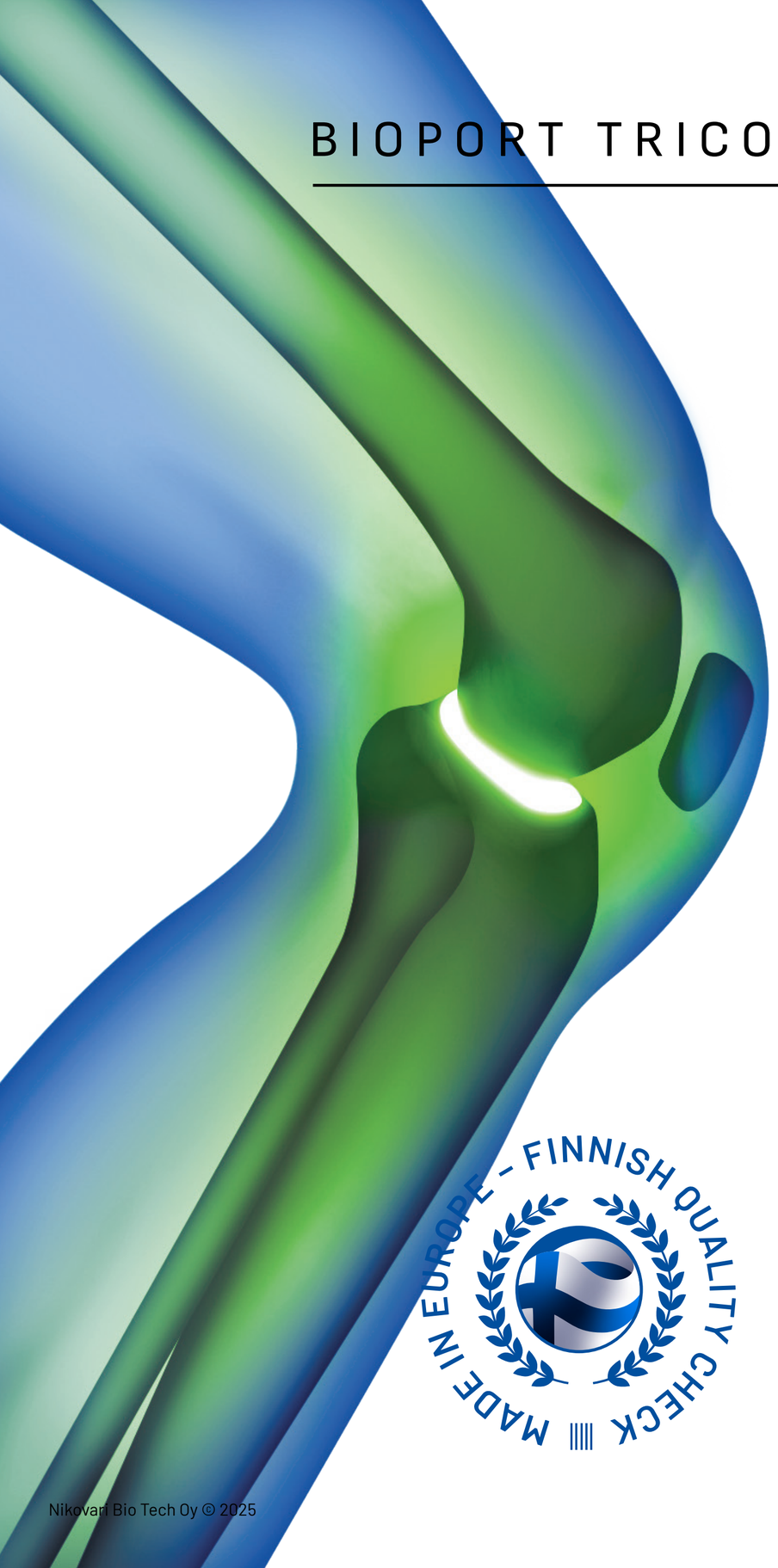
Only one injection per treatment

Highly purified 36 mg hyaluronic acid per syringe

Highest degree of compatibility with properties of synovial fluid

BD

Delivered in pre-filled glass syringe Becton Dickinson



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CHONDROITIN SODIUM SULFATE

Protects the cartilage and decreases inflammatory activity in the region affected by osteoarthritis (OA).Contributes to physical cross-linking of the hyaluronate chains being binded thereto in a 1:1 ration, increasing in this way the properties of sodium hyaluronate.

N-ACETYLGLUCOSAMINE

Reduces cartilage degeneration and activates its regeneration processes. Glucosamine is an important precursor of glycoprotein and GAG synthesis
As for the cartilage, it is essential for the formation of hyaluronic acid, chondroitin sulfate, and keratin sulfate, which are – apart from collagen fibers – the most important components of the extracellular matrix of articular cartilage and synovial fluid.
Limited production of glucosamine reduces GAG synthesis so glucosamine supplementation can overcome this problem.
In this way it is attempted to improve the viscous solution in order to supplement the synovial fluid with an essential component in the restoration of articular cartilage.

INDICATION

- As a viscoelastic supplement or as a replacement for the synovial fluid in the knee joint
- For the symptomatic treatment of mild to severe knee osteoarthritis

EFFECT

- Pain relief
- Lubrication and mechanical support
- Protection and regeneration of the cartilage

APPLICATION

Administered in a single injection, restores good hydration and shock absorption in the joint and provides significant improvement in OA symptoms. Recommended to administer two treatments cycles per year, every 6 months.

BIOPORT TRICOMBO

it is a complex combination containing bio-components of the synovial matrix such as glycosaminoglycan derivatives (GAGs) indicated for the treatment of joint pain, protection the hinge joint, anti-inflammatory activity. It provides protection against cartilage degeneration, activating the regeneration of the area suffering from osteoarthritis (OA), degenerative arthritis knee first, second and third grade meniscus degenerative disease and degenerative diseases of the joint.

All active principles of BIOPORT TRICOMBO medical device so-called Kombihylan, which are hyaluronic acid, chondroitin and N-acetylglucosamine, are part of synovial biomatrix.

- Hyaluronic acid is a naturally occurring biopolymer of articular cartilage. It provides lubrication to the hinge joint and protects the cartilage structure. The basic effect of hyaluronic acid injections in the area means supplementation of synovial fluid, lubrication of the joint and increasing the resistance of the cartilage;
- Chondroitin sulfate and N-acetylglucosamine are basic structural components of cartilage;

UNIQUE COMBINATION OF NATURALLY CROSS-LINKED HYLAURONIC ACID + CHONDROITIN SULFATE + N-ACETYLGLUCOSAMINE

NATURALLY CROSS-LINKED HYALURONATE

- The hyaluronic acid in medical device BIOPORT TRICOMBO is not chemically or irradiation cross-linked.
  In the case of BIOPORT TRICOMBO, there is a physical self-association through hydrogen bonds between the two components, sodium hyaluronate (NaHA) and chondroitin sulfate sodium (CS), so the network of hydrogel is stabilized by hydrogen bonds and hydrophobic interactions type forming a stable complex in aqueous solution.

- Using Chondroitin sulfate as a natural cross-linking agent increases bio-compatibility and bio-degradability of the native polymer, creates the premises for delaying cartilage degeneration and supports regeneration.

- Cross-linked hyaluronic acid contributes to the product greater stability and resistance to degradation by hyaluronidases, prolonging the duration of the treatment compared to those based on linear hyaluronic acid.

- The absence of chemical/irradiation cross-linking decreases chances of post-administration adverse reactions including pain at the site of injection, local skin reactions, pseudoseptic reactions, septic arthritis, and local joint pain and swelling.

UNIQUE COMBINATION OF NATURALLY CROSS-LINKED HYLAURONIC ACID + CHONDROITIN SULFATE + N-ACETYLGLUCOSAMINE

ADDITIONAL ACTIVE INGREDIENTS CHONDROITIN SULFATE AND N-ACETYLGLUCOSAMINE

- Chondroitin sulfate is a molecule that occurs naturally in the body, it is also important component in the cartilage – the touch connective tissue that cushions the joint.

- Chondroitin sulfate protects cartilage and anti-inflammatory activity in the region suffering from osteo-arthritis (OA);

- Chondroitin sulfate stimulates the growth of new joint cartilage, it also inhibits pro-inflammatory fac-tors secretion.

- The adjunction of Chondroitin sulfate provides not only pain relief, mobility improvement and cartilage protection but also cartilage regeneration, which is particularly useful in severe OA (grade III and IV)

- N-acetylglucosamine (GlcNAc) exerts an anti-inflammatory and chondroprotective effects on cartilage disorders by retaining proteoglycans and type II collagen in the articular cartilage

- Together with chondroprotective effects of hyaluronic acid, N-acetylglucosamine, which has a stimula-tory effect on hyaluronic acid synthesis in human articular chondrocytes and synovial fibroblast inhibits nitric oxide, this in turn reduces opoptosis in cultured human chondrocytes.

- N-acetylglucosamine has been shown to contribute to enhancement of type II collagen synthesis, and alleviation of the symptoms in patients with knee osteoarthritis

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