

CSbioactive

Chondroitin sulfate

Use: **joint health** Dose: **800-1200mg/day (US)**
Application: **dietary supplements**

CSbioactive is a **science-backed, high-quality source of chondroitin sulfate** for joint health. Supported by 32 scientific studies, including **7 clinical trials** and **2,700 patients**, CSbioactive is among the most researched chondroitin sulfates on the market and used as a reference ingredient worldwide.

Chondroitin sulfate and joint health

Chondroitin sulfate is produced naturally in the body. An important structural component in the extracellular matrix (ECM) of cartilage, it acts as a building block and provides elasticity, resistance and compression capabilities.

As individuals age, the cartilage begins to wear down resulting in a loss of mobility and in some cases, osteoarthritis. CSbioactive is shown to help maintain healthy joints.

47% of people globally say they experience joint discomfort¹

The CSbioactive difference

Different manufacturing processes and sources of biological starting material can lead to chondroitin sulfate products with varying chemical and structural properties. This can compromise the biological effects and safety of the final product.

Bioiberica's **high-quality raw material** and **rigorous manufacturing process** guarantees a highly purified, consistent chondroitin sulfate molecule that exceeds standard quality requirements.

Your key to success in the joint health market



Unique molecular properties



Proven efficacy and safety



Superior biological effect



Backed by Bioiberica's 20+ years' experience in joint health and mobility



Research-backed chondroitin sulfate



Scientific and marketing support

1. Higher biological effect

Bioiberica's chondroitin sulfate induced a powerful anti-inflammatory and anabolic response compared to other chondroitin sulfate molecules, which were less effective or induced the activation of inflammation and catabolic pathways.

Martel-Pelletier, J et al. *Molecules*, 2015;20:4277-4289.

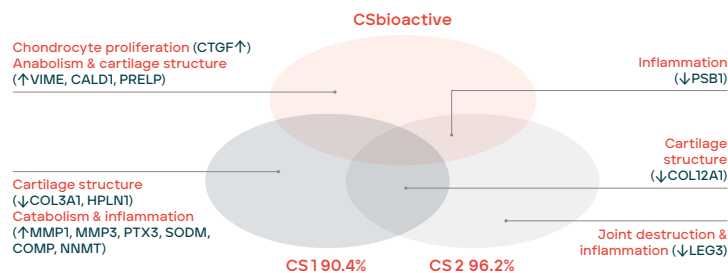


Fig 1. Effects of different chondroitin molecules (CS) on chondrocyte protein profile.²

2. Pain relief effect

Four months of Bioiberica's chondroitin sulfate supplementation attenuated brain response to knee pain in patients with knee osteoarthritis.

Monfort, J et al. *Med Clin (Barc)*, 2017;148:539-547.

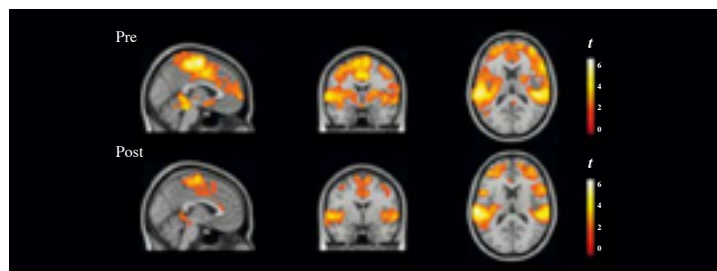


Fig 2. Brain fMRI images at baseline (pre) and after four-month CSbioactive supplementation (post) show diminished response in the pain-processing brain system.

3. Effect on knee pain

Six months of Bioiberica's chondroitin sulfate supplementation in combination with glucosamine reduced 50% knee pain in patients with knee osteoarthritis, equalling the effect of anti-inflammatory drug, Celecoxib®.

Hochberg, MC et al. *Ann Rheum Dis*, 2016;75:37-44.

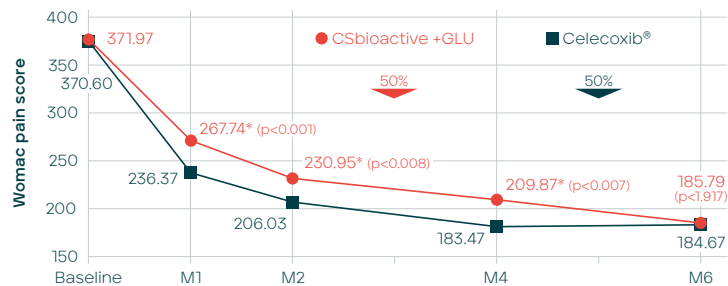


Fig 3. Bioiberica's chondroitin sulfate and glucosamine supplementation exhibits equal efficacy to Celecoxib®.

4. Effect on cartilage volume

Bioiberica's chondroitin sulfate significantly reduced the loss of cartilage volume in the first year of supplementation.

Pelletier, JP et al. *Arthritis Res Ther*, 2016;18:256.

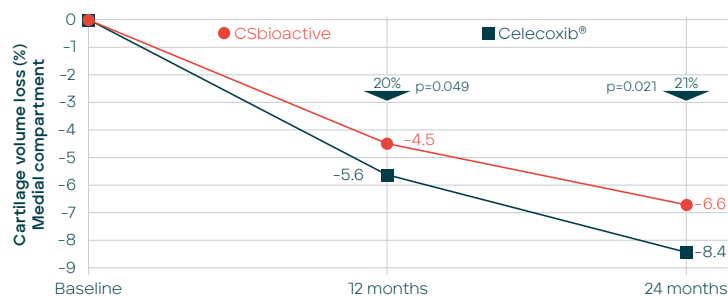


Fig 4. Percentage cartilage volume loss in patients supplemented with CSbioactive compared to patients prescribed Celecoxib®.

These statements have not been evaluated by the Food and Drug Administration or other competent food authorities. The product is not intended to diagnose, treat, cure, or prevent any disease. This information is only for business-to-business use and not meant to be addressed to final consumers.

References 1) FMCG Gurus, 2018/2019. 2) Adapted from: Calamia et al. *Mol Cell Proteomics*, 2012;11:M1111.

About Bioiberica

Bioiberica is a global Life Science company with more than 45 years' experience in the identification, extraction and development of biomolecules of high biological and therapeutic value for the pharmaceutical and nutraceutical industries. With a portfolio of scientifically-backed ingredients inspired by the latest consumer trends. Bioiberica Healthcare serves the mobility, digestive health and skin & beauty markets.

To innovate in the joint health market using Bioiberica's CSbioactive, contact us today.

Visit: www.bioiberica.com

Email: healthcare@bioiberica.com

Call: +34 93 490 49 08