

**Belinal®**

Silver fir branch extract

# Joint Health



Osteoarthritis is the most widespread, chronic, progressive and debilitating joint disease of the elderly population. Initial inflammation has been shown to have a major role in cartilage breakdown in osteoarthritis.

With Belinal® Silver Fir Branch extract, we provide science-backed expertise and innovation to help you develop formula to boost cartilage growth and inhibit inflammation. Formula that stands out and boosts your sales.

## Belinal® – Mechanisms of Action

- 1. Boost of the cartilage growth.** Belinal® can boost the chondrogenic potential of mesenchymal stem cells from patients with osteoarthritis, and could play an important role in the future treatment and prevention of joint disease.
- 2. Anti-inflammatory activity of Belinal®:** inhibition of COX-2 activity, suppression of expression of proinflammatory cytokines: tumor necrosis factor  $\alpha$  (TNF- $\alpha$ ), interleukin IL-6, IL-1 $\beta$ , suppression of COX-1 activity, inhibition of histamine release. Inflammation has been shown to have a pivotal role in cartilage degradation.

## Suggested dose of Belinal® in your formula

140 mg

Daily

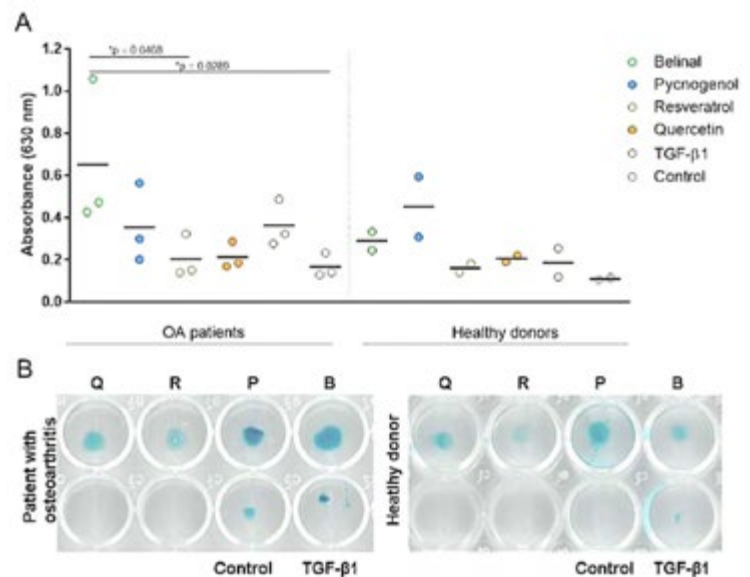


## Scientific Evidence: Growth of Chondrocytes

Patients with hip osteoarthritis under routine hip replacement and healthy donors with no evidence of musculoskeletal disorder were included in the study. Primary chondrocyte cells were isolated from bone in patients with osteoarthritis. Initially, Belinal®, Pycnogenol®, resveratrol and quercetin were tested for their effects on chondrogenesis under non-inflammatory and inflammatory conditions.

Belinal® showed higher chondrogenesis in comparison with Pycnogenol® and significantly increased chondrogenesis in comparison with the control and the polyphenols Resveratrol and Quercetin.

These data show significant benefits of Belinal® on chondrogenesis of mesenchymal stem cells derived from patients with osteoarthritis, under both non-inflammatory and inflammatory conditions.



### USP Unique Selling Proposition – Advantages and Features:

#### *Innovative Polyphenolic Solution for Enhanced Formulations*

- A 140 mg daily dose delivers a broad spectrum of polyphenolic bioactive compounds, ensuring optimal efficacy and health benefits.
- Utilizing a clean, water-based extraction process, our polyphenols are sourced from pristine EU mountain forests, guaranteeing purity, sustainability, and full traceability.
- Offering a unique polyphenolic profile, this formulation provides a first-to-market advantage, distinguishing it from competitors while enhancing product value and consumer trust.
- The strategic composition of polyphenols and polysaccharides improves formulation stability, ensuring product integrity and effectiveness throughout its 5-year shelf life.

## Discussion:

Silver fir branch extract Belinal® can play an important role in the treatment and prevention of joint disorders. Belinal® has been scientifically validated for its exceptional ability to restore cartilage and reduce a broad spectrum of inflammatory cytokines – two primary factors contributing to the development of osteoarthritis.

By targeting both structural damage and inflammatory responses, Belinal sets a new standard in joint care innovation.

### References:

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