



Cardiovascular Health



Belinal® Silver Fir Branch Extract is a premium ingredient rich in bioactive compounds, including flavonoids, phenolic acids, lignans, and non-starch polysaccharides. Discover how Belinal® merges the power of science and nature to support Cardiovascular health in your product formulation.

Cardiovascular Health Mechanisms of Action

Belinal® is renowned for its high concentration of polyphenols – including procyanidins, phenolic acids, and lignans – along with beneficial polysaccharides. These compounds act synergistically to support Cardiovascular health through multiple mechanisms:

- **Inhibition of the formation of AGEs** (Advanced glycation end products) AGEs are harmful compounds that are formed when protein or fat combine with sugar in the bloodstream. This process is called glycation.
- **Vasorelaxation** of smooth muscle cells through prostacyclin release mechanisms (PGI₂) and/or through endothelium derived hyperpolarizing factor EDHF.
- **Anti-inflammatory activity** (inhibition of COX-2 activity, suppression of expression of proinflammatory cytokines: tumour necrosis factor α (TNF- α), interleukin IL-6, IL-1 β , suppression of COX-1 activity, inhibition of histamine release.
- **Superior Anti-oxidant activity:** Hydroxyl Radical Scavenging is significantly higher than well known standards. ORAC shows that Belinal® is outperforming many top antioxidant foods.
- **Inhibition effects on LDL oxidation**

Suggested dose of Belinal® in your formula

80–120 mg

Daily



Proprietary Scientific Evidence

Our research demonstrated that Belinal® inhibits atherosclerotic plaque formation in animals by 80%, compared to placebo in 8 weeks.

Furthermore, the addition of Belinal® to atherogenic food, significantly increased aortic relaxation by 37% in 8 weeks.

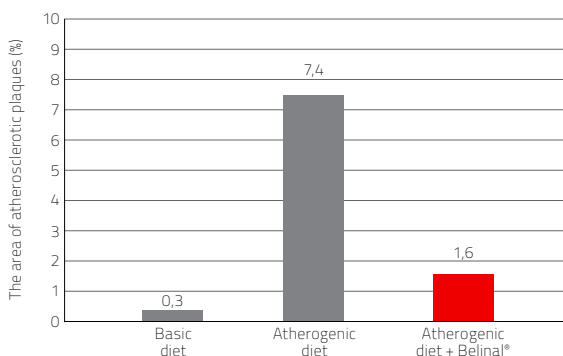


Diagram: The area of atherosclerotic plaques. $p < 0.001$.

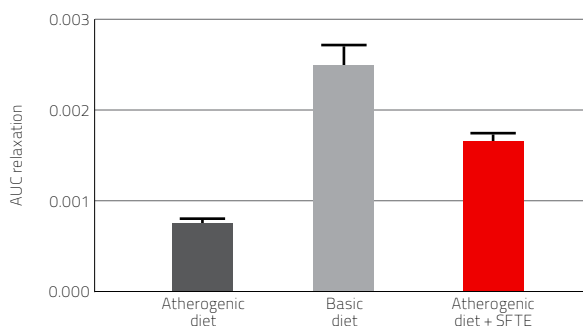


Diagram: Areas under the curves of relaxation. * $p < 0.05$, ** $p < 0.01$; (SFTE - Silver Fir Trunk Extract - Belinal®)

USP Unique Selling Proposition – Advantages and Features:

- The innovative broad-spectrum botanical extract enables multiple mechanisms of action and offers a synergistic concept, in contrast to ingredients with a single mode of action
- 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.

References:

- Kreft S., Štrukelj B. **Vasodilatation of human brain arteries and anti-inflammatory activity of the silver fir branch extract.** Study report to be published soon.
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- Drevenšek G, Lunder M, Tavčar Benkovič E, Štrukelj B, Kreft S. **Cardioprotective effects of silver fir (*Abies alba*) extract in ischemic-reperfused isolated rat hearts.** *Food Nutr Res.* 2016; 60(1).
- Strukelj B., Molek P. **Expert opinion and mechanisms of Belinal® on vascular plaques and LDL cholesterol inhibition.** Scientific expert opinion 2023.
- Fukumitsu S., Aida K., Shimizu H., Toyoda K. **Flaxseed lignan lowers blood cholesterol and decreases liver disease risk factors in moderately hypercholesterolemic men.** *Nutrition Research* 2010; Jul 30 (7):441–446.