

Product Information

Decorin from bovine articular cartilage

Product Number **D 8428**

Storage Temperature -0°C

Product Description

Decorin is a small proteoglycan, which has been found associated with collagen fibrils in all connective tissues. In the skeletal system it is found primarily in the extracellular matrix of articular cartilage, which covers the surface of adult bones in movable joints. It has one glycosaminoglycan (GAG) chain of chondroitin/dermatan sulfate with a molecular weight of approximately 50 kDa attached to the core protein of approximately 40 kDa. The core protein contains approximately 12 tandem repeats. Each 24 amino acid repeat is leucine rich, similar to two other small proteoglycans, biglycan and fibromodulin.^{1,2,3} The core protein has an isoelectric point of 9.8 and is further glycosylated with several small oligosaccharides.² The GAG chain attachment site on the core protein is the fourth amino acid, which is serine. The GAG chains are heterogeneous and differ with tissue location and with different organisms. The GAG chains differ by their size and by the extent of glucuronic acid epimerization to iduronic acid, with cartilage decorin containing approximately 40% iduronic acid.⁴ There is approximately 70% homology between the human and rat sequences for the core protein.

Decorin interacts with type I and type II collagens. The interaction is between collagen and the core protein, not the GAG chain. This binding delays collagen fibrillogenesis and may play a role in interfibril interactions.^{5,6} Fibronectin and thrombospondin also interact with decorin.

Decorin also interacts with TGF- β isoforms. The core protein binds to TGF- β 1 with high affinity. The addition of decorin to TGF- β 1 enhances the inhibitory effect of the growth factor on osteoclast proliferation. This enhancement in bioactivity may be due to decorin increasing the TGF- β 1 binding to its receptors.⁷

This product is supplied as an essentially salt free, lyophilized powder prepared from a sterile filtered solution. The lot specific content of protein (Lowry), glycosaminoglycan, and uronic acid are reported on the Certificate of Analysis.

Precautions and Disclaimer

This product is for laboratory research use only. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

The product is soluble in phosphate buffered saline (0.5 mg/0.25 ml).

Storage/Stability

It is recommended to store the product at -0°C .

References

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5. Pogany, G. et al., *Arch. Biochem. Biophys.*, **313**, 102-111 (1994).
6. Roughley, P.J., and Lee, E.R., *Microsc. Res. Tech.*, **28**, 385-397 (1994).
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