

Xtra-Cell™ Comitris™

Frozen Liquid Marine Cartilage Extract

DESCRIPTION

Xtra-Cell™ Comitris™ provided by Douglas Laboratories®, is an innovative frozen marine liquid cartilage extract (LCE) containing water-soluble proteins and peptides designed to help maintain healthy angiogenic balance as well as healthy hematocrit and red blood cell levels.*

FUNCTIONS

Xtra-Cell Comitris is manufactured and purified via a patented[†] low temperature extraction and molecular ultrafiltration of shark cartilage that does not involve the use of excipients, chemicals, enzymes or preservatives. This extraction process allows for the selection of molecules based on their size and weight, and results in a finished extract that is composed of proteins, peptides and other compounds having approximate molecular weights of less than 500 kilodaltons (kDa). After extraction, the liquid is aseptically bottled and immediately flash-frozen to preserve the structure and function of its components. Each batch is tested for potency and purity according to validated methods. Bioavailability of the extract has been assessed by a human clinical trial. Xtra-Cell Comitris does not have any unpleasant odor or taste.

Angiogenesis is a natural process by which new blood vessels are formed and grow to supply oxygen and nutrients to cells. Angiogenesis is a complex process that is regulated at the cellular level with a balance between factors that are proangiogenic and factors that are anti-angiogenic. Disturbances in this balance can affect the health of a tissue. Maintaining the integrity of the extracellular matrix (a meshwork of protein fibers such as collagen and elastin, plus polysaccharides including chondroitin sulfate and hyaluronic acid) is critical for allowing the transportation of nutrients, and for providing structure to cartilage, muscles sheaths, skin, and tendons. The normal breakdown and regeneration of the extracellular matrix is required for proper tissue health. However, excessive breakdown can lead to deterioration of the matrix. Liquid cartilage extract may help to maintain the structure and function of the extracellular matrix as well as blood vessels and tissues by supporting the proper activity of a family of zinc-dependent enzymes known as matrix metalloproteinases (MMPs).* Specifically, MMP-2, MMP-9, and MMP-12 (also know

as gelatinase A, gelatinase B, and metalloelastase, respectively) have been shown to be involved in both the breakdown of the extracellular matrix as well as the breakdown of vascular basement membranes. An imbalance in MMP activity can alter angiogenic balance. The effect of LCE on MMP activity has been investigated. Figures 1 and 2 show that LCE can support healthy MMP activity.

Figure 1

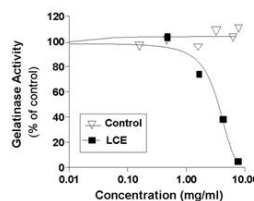
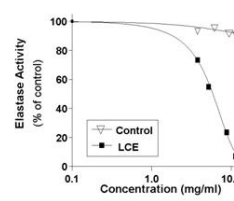


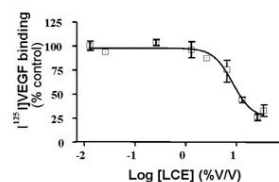
Figure 2



Cytokines including IL-1 and TNF- α also promote the expression of MMPs. Liquid cartilage extract has been shown to maintain healthy levels of IL-1 and TNF- α which can further support healthy angiogenic balance and promote normal inflammatory mechanisms.*

Another molecule that plays a central role in maintaining angiogenic balance is a compound called vascular endothelial growth factor (VEGF). When bound to one of its two receptors, VEGF can stimulate endothelial cell proliferation, affect cell permeability, and contribute to the formation of new blood vessels. In a competitive binding assay, LCE has been shown to decrease the binding of VEGF to its receptor (Figure 3).

Figure 3



LCE has also been shown to maintain a healthy level of VEGF-dependent endothelial cell proliferation.* Together, the actions of LCE on MMP activity and VEGF binding can work in concert to maintain healthy angiogenic processes.

A more recently observed characteristic of LCE is its ability to support healthy blood parameters. In a randomized,

(continued on reverse)

double-blind, placebo controlled trial, healthy subjects who consumed liquid cartilage extract displayed increased mean erythrocyte count, hematocrit, and hemoglobin levels after 11 days of supplementation. This increase in blood

Figure 4

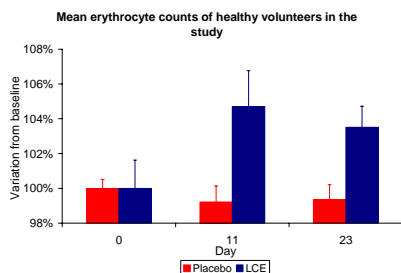


Figure 5

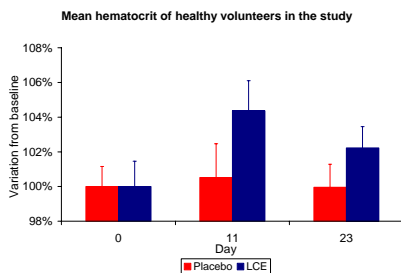
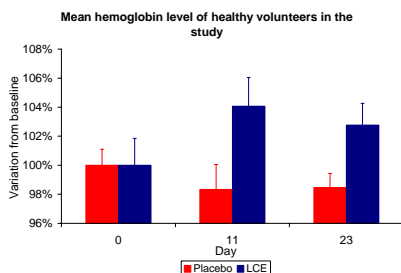


Figure 6



parameters lasted through the 23 day duration of the study (figures 4, 5 and 6). Increases in erythrocyte count, hematocrit and hemoglobin levels have also been observed in a study in which cancer patients were supplemented with LCE.

INDICATIONS

Xtra-Cell Comitris may be a useful dietary supplement for those who wish to support healthy angiogenic balance. Comitris may also be useful to help support healthy hematocrit and red blood cell count.

FORMULA

Available in 2 sizes

Serving Size: 1 Bottle of 30 mL or 60 mL

Servings Per Package: 30

Each Bottle Contains:

Marine Liquid Cartilage Extract

(from fish) 30 mL or 60mL

30 mL size – Product # 99466

60 mL size – Product # 99465

SUGGESTED USE

As a dietary supplement, take one bottle of Xtra-Cell Comitris daily. Take on an empty stomach either a half hour before or two hours after a meal.

DIRECTIONS FOR USE

Thaw contents of bottle by placing bottle in a container of warm water. Do not microwave. Unscrew the cap and drink the entire contents. May be mixed with water or juice to facilitate intake.

SIDE EFFECTS/WARNINGS

For oral use only. Do not take this product if you have recently had a heart attack. May not be suitable for children under 12 years of age, pregnant or nursing women, or persons allergic fish (shark). Consult a healthcare professional before use.

STORAGE

Keep Frozen. Do not thaw and refreeze. Keep out of reach of children.

REFERENCES

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 - Dupont E, et al. Antiangiogenic properties of a novel shark cartilage extract: potential role in the treatment of psoriasis. *J Cutan Med Surg.* 1998 Jan;2(3):146-52.
 - Lee A, Langer R. Shark cartilage contains inhibitors of tumor angiogenesis. *Science.* 1983 Sep 16;221(4616):1185-7.
 - Gonzalez RP, et al. Shark cartilage as source of antiangiogenic compounds: from basic to clinical research. *Biol Pharm Bull.* 2001 Oct;24(10):1097-101. Review.
 - Thibodeau A, Behr S. Liquid cartilage extract decreases symptoms of rheumatoid arthritis. *Townsend Letter for Doctors and Patients* 2002.
- † - Manufacturing process covered under US patent 5,618,925. Other US patents on this liquid marine cartilage include 5,985,839, 6,025,334, 6,383,522. Additional patents pending.

***These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.**

**Distributed by
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