CollaMex is a 100% natural, multifunctional bone, joint and personal care ingredient

CollaMex™

COLLAGEN CHONDROITIN COMPLEX

WAITAKI BIOSCIENCES

A DIVISION OF PHARMAZEN LIMITED

CollaMex™ is a 100% natural source of chondroitin sulphate and type II collagen.

Multi-functional Ingredient

CollaMex is unique and proprietary natural ingredient for use in a wide range of formulations related to joint health, bone health and personal care products.

CollaMex contains naturally occurring **chondroitin sulphate** along with high concentrations of **type II collagen** peptides, bioactive **growth factors** and a range of **trace minerals**, all within a single ingredient package to deliver unsurpassed functionality.

Low Molecular Weight Chondroitin Sulphate

One of the group of compounds known as Glycosaminoglycan (GAG), chondroitin sulphate is present in the joint cartilage as part of the larger proteoglycan molecule, aggrecan.

Chondroitin sulphate provides the building blocks to support repair of damaged cartilage and interferes with the progression of structural changes in the joint tissue through several mechanisms. These include increased synthesis of joint proteoglycans[1,2,] inhibition of matrix metalloproteases that can significantly degrade joint cartilage[3] and anti-inflammatory properties. The overall result of these bioactivities is a reduction in the progression of joint structural changes and reduced pain[4].

While chondroitin sulphate is better known for its use in joint health, research has also shown it has benefits in assisting with the regeneration of injured bone. Work by Brandt et al[5] has demonstrated that the addition of chondroitin sulphate to bone cements significantly improved bone building properties.

Chondroitin sulphate is also known to be an effective ingredient in skin care formulations due to its ability to attract and retain water[6].

CollaMex™ contains chondroitin sulphate in the range of 16,000 – 17,000 Daltons.

Studies have shown that the form (i.e. bovine versus shark) and molecular weight of chondroitin sulphate directly influences its absorption after oral administration. Lower molecular weight chondroitin sulphate of bovine origin has a higher gastrointestinal absorbability[7].

The molecular weight range of the chondroitin sulphate in CollaMex has been shown to be within the range expected for bovine origin material with a peak at the lower molecular weight range of 16,000 - 17,000 Daltons.[8]

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Type II Collagen

Type II collagen is the major structural component present in the extra cellular matrix (ECM) of connective tissues. Proper functioning of joint cartilage is dependent on the maintenance of the ECM, a process which is controlled by cartilage cells, known as chondrocytes.

Oral supplementation of type II collagen peptides (hydrolysed collagen) has been shown to help the repair of damaged cartilage by stimulating a dose dependent increase in type II collagen secretion by chondrocytes and increasing biosynthesis of proteoglycans[9].

Proprietary, enzymatically controlled collagen hydrolysis

The specialised enzymatic manufacturing process carefully developed for CollaMex results in a finished powder with a high concentration of type II collagen peptides.

Specialised analysis of CollaMex shows a molecular weight range that includes collagen peptides of <8,000 Daltons.

Cartilage Derived Growth Factors

Waitaki has undertaken an ambitious project to identify growth factors present in CollaMex.

A range of growth factors were found to be present, in particular Insulin Like Growth Factor I (IGF I), but also Transforming Growth Factor ß I (TGFßI) and Cartilage Derived Growth Factor (CDGF).

Gentle manufacturing process allows greater retention of the bioactives in CollaMex™.

The Growth factors are a diverse group of proteins with a myriad of biological functions within the body. Because they are proteins they are very sensitive to harsh manufacturing processes, however the carefully controlled processing techniques used in the manufacture of CollaMex help to preserve these delicate entities within the finished powder.

IGF-I may have a dual benefit on compromised cartilage. Work by Neidel et al (1994)[10] demonstrated that IGF-I partially prevented the inhibition of cartilage proteoglycan synthesis caused by Interleukin I (IL-1). In addition to this beneficial effect on the extracelllar matrix, the growth factor actually accelerated recovery of proteoglycan production, after the free IL-1 was withdrawn.

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CollaMex™ Purity and functionality guaranteed.

High Quality Raw Materials

CollaMex™ is not just highly processed gelatin

Most collagen containing products are manufactured from inedible hides, and unspecified bone fragments that are left over from meat processing activities. Not surprisingly, these crude raw materials are subjected to harsh chemical treatments to sterilise and purify them to human consumption standards. These types of products are also known as gelatin and contain predominantly type I collagen. Other collagen products may be manufactured from caged, mass reared, chicken sternums.

CollaMex, however, is produced from New Zealand free range, grass fed, export quality bovine cartilage, that is exclusively collected to Waitaki's own strict specifications. Bovine cartilage supplies type II collagen - the same type of collagen that is found in the joints.

Furthermore, the raw materials used in the production of CollaMex are already certified as human food grade even before manufacturing begins. This means we do not need to use harsh solvents, acids or sterilisation procedures during manufacture, and ensures maximum bioactivity is retained in the finished product.

CollaMex™ Features

- Gentle enzymatic manufacturing process preserves maximum biological activity
- Low molecular weight chondroitin sulphate for maximum absorbability
- High concentration of type II collagen peptides
- Independently tested source of growth factors to stimulate cartilage recovery
- Two convenient variants for maximum formulation flexibility
- CollaMex is manufactured from 100% safe and natural raw materials
- CollaMex contains no artificial additives or modifiers

1 Brand, 2 Ingredients

To offer the highest degrees of flexibility for formulators, Waitaki offers CollaMex in two forms:

CollaMex™ Original - a minimally processed powder that maintains maximum levels of bioactivity

- < 250 micron, fine free flowing powder
- Minimum 20% Chondroitin Sulphate
- Minimum 40% type II collagen
- Naturally occurring growth factors
- Ideally suited to encapsulation and tableting and topical personal care products (e.g. lip balm)

CollaMex™ Soluble - a 100% water soluble fine grade powder for greater formulation flexibility

- < 150 micron, fine free flowing powder
- 100% soluble in water
- 20% - 30% chondroitin sulphate
- Minimum 40% type II collagen
- Naturally occurring growth factors
- Ideally suited to dry mix beverage applications, tableting and encapsulation

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