

Recombinant Humanized Collagen

Product Information

Product Name: Recombinant humanized collagen

Grade: Cosmetic grade

Source: Recombinant

Packaging: 1kg

Appearance: White powder

Storage: Store at room temperature and protect from moisture.

Product Introduction

Collagen is a type of biological polymer protein, constituting a major component of animal connective tissue. It stands out as the most abundant and widely distributed functional protein in mammals, comprising 25% to 30% of the total protein content. The skin, in particular, holds an impressive 72% collagen content. This versatile protein plays crucial roles such as repairing the skin barrier, stimulating cell regeneration, providing structural support, and maintaining moisture.

Widely distributed in human tissues, collagen is predominantly found in the skin, bones, muscles, blood vessels, internal organs, cartilage, and various other parts. It is a vital building block for the human body and can be likened to a scaffold for human life. Collagen contributes to supporting, repairing, and resisting aging.

There are different types of collagen, including Type I, II, III, IV, V, and VI. Types I, II, and III collectively account for over 90% of total collagen, with the skin primarily containing Type I and Type III collagen.

Types I and III collagen are prevalent in connective tissues like skin, tendons, ligaments, and joints, forming an extracellular matrix network structure crucial for the dermis. Therefore, they find extensive use in the cosmetics industry, with Type I collagen providing thickness and solidity to support skin hardness, while Type III collagen, with its small size and elasticity, plays a key role in skin elasticity and scar healing. The reduction of these collagen types can lead to skin aging. Type II collagen is mainly distributed in cartilage and the vitreous body, playing a crucial role in bone formation, cartilage formation, bone growth, and maintaining mature cartilage. Type IV collagen, a major component of the basement membrane, exists in sheet form and is primarily synthesized and metabolized in the liver.

Source of Collagen

1. **Plant-based Collagen:** Collagen is animal-derived, and the so-called "plant collagen" refers to carbohydrate proteins obtained from plants (such as peach gum and white fungus), not authentic collagen. Recombinant technologies utilizing plants like tobacco to produce animal collagen are not included in this category.
2. **Animal-based Collagen:** About 99% of commercially available collagen is extracted from animal tissues like pig skin, cowhide, donkey skin, fish skin, and fish scales. There are fundamental genetic differences compared to human collagen, posing risks of rejection, sensitization, and potential exposure to viruses.
3. **Recombinant Collagen-like Protein:** Produced through genetic recombination and bioengineering, collagen-like protein closely resembles human collagen in structure and characteristics. However, modifications to the structure may limit its efficacy, and there is a potential risk of sensitization.
4. **Recombinant Humanized Collagen:** With a gene sequence consistent with human collagen, this type exhibits excellent tissue compatibility. Recognized as a native substance by the body's immune defense, it can smoothly penetrate the skin barrier, get directly absorbed by the body, and actively participate in constructing collagen at the muscular base, offering high utilization and potency.

Applications

Collagen is a biological macromolecule that plays a role in binding tissues in animal cells. It is one of the most critical raw materials for the biotechnology industry and is also the best biomedical material in huge demand, including biomedical materials, cosmetics, food industry, research purposes and other major applications:

Skin care and beauty products: Collagen is widely used in skin care products because it repairs damaged skin, maintains elasticity and radiance, as well as helping to fight aging and lighten dark spots.

Pharmaceutical field: Collagen is also widely used in the pharmaceutical field, such as as hemostatic materials, tissue engineering materials, drug release carriers.

Medical Aesthetics Field: Collagen is primarily used in the field of medical aesthetics as a dermal filler to help fill in and improve the appearance of the skin, such as reducing wrinkles and scars.

Foods and Beverages: Collagen can be used as a nutritional supplement to help synthesize the collagen that the body needs, or in the form of small molecule collagen peptides that act directly on the body.

Professional Skin Care: Collagen can be used in repair dressings and skin care products for repair, anti-aging, hydration and whitening.

Other applications: Collagen can also be used in the manufacture of artificial skin, wound dressings, biomedical materials and so on.

In addition, collagen has a role in enhancing immunity, promoting weight loss, and maintaining vascular health.

1. In human skin, type I collagen occupies a high proportion, they play a vital role in the support of our skin's contour, the strength of the skin barrier, and the maintenance of skin firmness and elasticity. It can also increase the thickness of the dermis, remove spots, lighten fine dry lines, tighten the skin to lock water and moisturize, and anti-inflammatory and stabilize. Suitable for people with facial spots, fine lines, dry lines, facial, flaccid skin separation, sensitive skin people. Type I collagen can be widely used in medicine, beauty, cosmetics, health care products and other fields.

2. With its basic biocompatibility, degradability, low immunogenicity, and ability to promote chondrocyte growth and redifferentiation, type II collagen has become a highly promising scaffold material for cartilage tissue engineering. Type II collagen can also be used as a vaccine to prevent arthritis. In addition, type II collagen can be used as clarifying agent, emulsifier, foaming agent and other applications in the food collar, and can be added to shampoo, lipstick and other daily chemical areas.

3. Type III collagen, which strengthens the strength and elasticity of microvessels, can provide sufficient nutrients for cells and directly binds with angioblasts to promote the formation of new blood vessels, which is an important element in maintaining full, smooth and shiny skin. Type III collagen has the functions of hydration and moisturizing, skin improvement, anti-aging, high SOD activity, etc. It can be used in cosmetics, medical cosmetology and oral health.

4. Normally, type IV collagen is a kind of macromolecule protein, which has an important role in maintaining skin elasticity, keeping blood vessel elasticity, antioxidant, regulating immunity and repairing liver. It can be used in health care, medicine and cosmetic industries.

Product List

Product Name	Source	Molecular Weight	Grade	Packing
Recombinant type I humanized collagen	Recombinant	35KD、100KDa	Biochemical grade	5g, 100g, 1Kg
			Cosmetic grade	
Recombinant type II humanized collagen	Recombinant	100KDa	Biochemical grade	5g, 100g, 1Kg
			Cosmetic grade	
Recombinant type III humanized collagen	Recombinant	55KD	Biochemical grade	5g, 100g, 1Kg
			Cosmetic grade	
Recombinant type IV humanized collagen	Recombinant		Biochemical grade	5g, 100g, 1Kg
			Cosmetic grade	



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