

Human Collagen - Purified

Catalog No.: PA1282

Quantity: 0.1 g

Background: The innovation of Human-like Collagen:

A. Easy processed: rHuCollagen remained the initial functions of collagen and had some new characters because of its structure, such as reversible colloid with heat and easy processed without molecular reduction and so on. However, animal collagen extracted from animal tissues was insoluble except for the molecular weight reduction.

B. Free of virus: the fetal shortcomings of animal collagen restricted the application is it's harmful virus, but Human-like Collagen made up these drawbacks. Collagen (extracted from animal skin, tendons and hides) is potential risk in virus with the potential to cause side effect and the potential for the contamination of bovine collagen with the fatal mad cow disease.

C. Water solubility: rHuCollagen dissolves in water, which is another advantage to compete with animal collagen. It is different from hydrolyzed collagen produced by hydrolyzing animal collagen to short peptide linkage with a lower molecular weight.

D. Mini-immunogenicity: Human-like collagen was expressed by human collagen gene in host, so immunogenicity could be lessened much by compared with animal collagen after it entered into human body.

Species: Human

Source: E. coli

Format: **State:** Sterile filtered white lyophilized powder containing no additives
Purity: >95% Purified by proprietary chromatographic techniques, purity is greater than 95.0 % as determined by:

(a) Analysis by RP-HPLC.

(b) Anion-exchange FPLC.

(c) Analysis by reducing and non-reducing SDS-PAGE Silver Stained gel.

Reconstitution: Restore in sterile 18 MΩ-cm H₂O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Description: Recombinant Human Collagen is a non-glycosylated polypeptide chain containing human collagen's cDNA transcribed reversely from mRNA. The sequence of the first fifteen N-terminal amino acids was determined and was found to be MDPVVLQRRDWENPG

AA Sequence:

Asp 0.39; Thr 0.16; Ser 5.70; Pro 18.87; Gly 29.17; Ala 13.38; Val .71; Met .18; Ile 0.16; Leu 8.04; Tyr 0.90; Phe 0.15; Lys 0.27; His 0.15; Arg 0.03; Gln 17.40; Hydro Pro 4.34

Biological Activity: 1. Cultivation of BHK-21 and 2BS cell line:

BHK-21 or 2BS cells were plated onto the bottom of the 96-well cell culture plates at the density of 1*10³cells/well, respectively, with 0.1 ml RPMI1640 contained 10 % fetal bovine

serum in the well. BHK-21 or 2BS cells were incubated in standard conditions (at 37 °C with 5 % CO₂ in a humidified incubator) for 24 hours.

2. Biochemical activity analysis of Human-like Collagen:

Complete culture media was removed after 24 hours, rHuCollagen was added at various concentrations 0.01 %, 0.03 %, 0.05 %, 0.07 %, 0.09 %, 0.10 %, 0.11 %, 0.13 % and a complete medium was used as blank control. Cells were incubated in standard conditions (at 37 °C with 5 % CO₂ in a humidified incubator). The morphology of cell was observed by reverse microscope after 24 hr, 48 hr, 72 hr, 96 hr, and 120 hr.

Thereafter, the viable cell count was determined by a colorimetric method using MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide) after 24 hr, 48 hr, 72 hr, 96 hr and 120 hr. A490 was evaluated by ELISA reader.

3. Results:

The results demonstrate that rHuCollagen has no significant effect on cell morphology. MTT analysis shows that rHuCollagen has remarkable effect on cell proliferation when its concentration is higher than 0.03 %. Cell proliferation was improved by 40 % to 60 % compared to control.

Molecular weight: 96 kDa 96,000 Dalton

Add. Information: Protein quantitation was carried out by two independent methods:

1. UV spectroscopy at 280 nm.
2. Analysis by RP-HPLC

Various uses of activity:

- A. Bio-Absorption
- B. Cell-Adhesion
- C. Mini-immunogenicity and neovascularization
- D. Promoting the formation of epithelial cell
- E. Biocompatibility
- F. Absorption water
- G. Against UV radiation.
- H. Repairing defected skin
- I. Removing pock, acne, spot
- J. Dispelling black eye sockets, eye dropping

Storage: Lyophilized product although stable at room temperature for 3 weeks, should be stored desiccated below -18 °C. Upon reconstitution it should be stored at 2 - 8 °C between 2 - 7 days and for future use below -18 °C. For long term storage it is recommended to add a carrier protein (0.1 % HSA or BSA). Please avoid freeze-thaw cycles. Shelf life: One year from despatch.