

Immunization Grade Porcine Type III Collagen

Catalog # 1303

For Research Use Only - Not Human or Therapeutic Use

DESCRIPTION:

Porcine type III collagen purified from pepsin-solubilized skin by repeat salt precipitation.

Type III collagen consists of three alpha 1(III) chains in a triple helix structure and is distributed in connective tissues such as skin, liver, lung, and intestines, along with type I collagen to make up the interstitial matrix structure. Therefore, type III collagen is considered a minor companion collagen with type I collagen, which is the dominant collagen in the tissues (1). Type III collagen is involved in scaffolding and scar tissue formation and its contents in normal tissues are normally very low. However, under wound healing conditions, the ratio of type I to type III collagen reaches 1:2, resulting in a loss of tensile strength (2). Thus, this immunization grade type III collagen can be a useful tool to study the mechanism of wound healing and connective tissue related diseases

APPLICATION:

Use as an immunizing antigen to generate antibodies, an antigen to detect anti-type III collagen antibodies in ELISA, or as a standard for gel analysis.

QUANTITY:

1 mg

FORM:

Lyophilized powder

SOURCE:

Porcine skin

MOLECULAR WEIGHT:

300 kDa (consists of three α_1 (III) chains formed with inter-chain disulfide bonds)

PURITY:

>90% by 6% SDS-PAGE with 6M Urea under reducing conditions (3), contaminating porcine type I collagen content less than 10%

USAGE:

Type III collagen can be dissolved at 4 mg/ml in an acidic buffer such as 0.01-0.05M acetic acid, pH 3.0-3.3 or 0.15M citrate buffer, pH 3.6, mixed at 4°C overnight. To neutralize the solution, add a 1/10 volume of a 10X neutral buffer containing 1.5M NaCl or dialyze the solution against a neutral buffer.

STORAGE:

4°C in the dark for lyophilized form and at -20°C for solution form. Collagen will gradually degrade under neutral conditions.

STABILITY:

2 years in lyophilized form

NOTES:

N/A

REFERENCES:

1. S. El, F. Yano, S. Mittal, C. Filipi, Collagen metabolism and recurrent hiatal Hernia: cause and effect? *Hernia* **10**, 511-20 (2006).
2. D. Friedman, C. Boyd, P. Norton, R. Greco, A. Boyarsky, *et al.*, Increases in type III collagen gene expression and protein synthesis in patients with inguinal hernias. *Ann Surg* **218**, 754-60 (1993).
3. T. Hayashi, Y. Nagai, Separation of the alpha chains of type I and III collagens by SDS-polyacrylamide gel electrophoresis. *J Biochem* **86**, 453-9 (1979).

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