CellAdhere™ Type I Collagen, Human, Lyophilized

Type I collagen, human, for tissue engineering research, cell culture, and biochemistry

Catalog # 07005 15 mg

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Product Description

Type I Collagen is the most abundant type of collagen in the human body and is a major structural protein prevalent in skin, bone, tendon, and other fibrous connective tissues (Bornstein et al.). All collagens are characterized by a secondary protein structure consisting of three polypeptide chains wrapped around one another in a triple helical arrangement (Tanzer). The different types of collagen vary in the primary amino acid sequence of their polypeptide chains, with type I collagen comprising two identical α1(I) chains and one α2(I) chain that spontaneously form the triple helix in solution (Heino).

CellAdhere™ Type I Collagen, Human, Lyophilized is prepared from the extracellular matrix secreted by normal human fibroblasts and is xeno-free. When reconstituted with 5 mL of 0.01 N HCl, the resulting concentration is 3 mg/mL.

This product is purified using a highly controlled manufacturing process. This process contains validated steps to ensure inactivation of possible viral contaminants. This product is ideal for coating surfaces with a thin layer of protein to support cell attachment, but is not suitable for 3D cell culture applications. The optimal protein concentration may vary depending on the cell type being used, and therefore must be titrated for best results.

Properties

Storage: Store at -20°C.
Shelf Life: Stable for 6 months from date of receipt.

Please refer to the Safety Data Sheet (SDS) for hazard information.

Handling / Directions For Use

PREPARING COLLAGEN-COATED TISSUE CULTUREWARE

1. Reconstitute CellAdhere™ Type I Collagen, Human, Lyophilized (15 mg) with 5 mL of sterile 0.01 N HCl solution to obtain a 3 mg/mL solution.
2. Mix gently until everything has been solubilized.
   NOTE: Reconstituted solution may be slightly opaque. If not used immediately, store at 2 - 8°C for up to 3 months.
3. Dilute reconstituted Type I Collagen solution with sterile 0.01 N HCl solution to obtain desired concentration.
   NOTE: Different dilutions will need to be tested to determine the optimal concentration required for each culture system. Typical coating concentrations range between 10 - 100 µg/mL.
4. Add desired amount of diluted Type I Collagen solution on the surface of the cultureware to be coated.
   For example, use 1 mL to coat a 35 mm Culture Dish (Catalog #27100).
5. Cover coated cultureware to protect from contamination.
6. Incubate at room temperature (15 - 25°C) for 1 - 2 hours.
7. Aspirate excess solution. Avoid scratching the coated surface.
8. Rinse coated cultureware with sterile D-PBS Without Ca++ and Mg++ (Catalog #37350) or culture medium.
9. Use coated cultureware immediately. Alternatively, keep sterile and store at 2 - 8°C damp or air dried.

References

Bornstein P & Sage H. (1980) Structurally distinct collagen types. Annu Rev Biochem 49: 957–1003.
Heino J. (2007) The collagen family members as cell adhesion proteins. Bioessays 29(10): 1001–10.
Tanzer ML. (1973) Cross-linking of collagen. Science 180(4086): 561–6.