THT Biomaterials GmbH
extracellular platform technology
The Human Touch

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Guidelines for use

Product: highly purified, human atelocollagen type 1 (COL1) from human placenta. Useful as a gel or coating for the attachment and growth of cells.

Catalog Number (CAS): THT0101 (liquid), THT0102 (freeze dried)

Revision: 16.05.2020

Form: liquid (please refer to vial label for lot-specific concentration).

Formulation: in 10 mM acetic acid (HAc).

Purity: >95% by SDS-PAGE

Background: pepsin-solubilized atelocollagen facilitates *in vitro* cultivation of many cells and enhances cell-specific morphology and function. It can be used to form highly complex three-dimensional matrices for a broad spectrum of tissue engineering applications. HUMAN PLACENTA Collagen-I (COL1) can be purchased liquid at a concentration of 2 mg/mL in 10 mM HAc or freeze dried. COL1 is compatible with all cell culture media.

Source: human placenta. Prepared from pooled tissue of individuals that have been shown by certified tests to be negative for antibodies to HIV, HEP-B and THPA (syphilis).

Storage/Stability
COL1 should be stored at -20 °C for long-term storage. Freeze thaws should be minimized by an initial thaw, aliquoting into one time-use aliquots and freeze (-20°C).

Precautions and Disclaimer
For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling procedures.

Toxicity: standard laboratory handling.

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Procedure to use:

Note: The optimal concentration for cell attachment and culture may differ for different cell types, and experimentation may be required to determine the optimal conditions for your cell culture experiments.

Guideline for 2D coating tissue culture plates

1. Add sufficient volume of collagen to provide desired coating concentration. A coating concentration of at least 0.1 µg/cm^2 is recommended, depending on the cell type. It is important that the volume added to the dish is sufficient to cover the growth surface. If necessary, dilute COL1 stocks with cell culture medium, PBS buffer or 2 mM HAc.
2. Keep the growth surface completely covered and incubate for 60 min at room temperature.
3. Tilt the dish just enough to allow excess COL1 to drain to the lowest point in dish and remove excess material with a sterile pipette.
4. Air dry the plate.
5. Once dry, the plates are ready for use.

Guidelines for 3D gels

1. Dilute the collagen to desired concentration using buffer or culture media.
2. Mix with cells.
3. Add the mixture to the desired tissue culture vessel.
4. Incubate for 15 to 60 min at 37°C. Gel is then ready for use should be handled carefully.

References

1. Hackethal J, Mühleder S, Hofer A, Schneider KH, Prüller J, Hennerbichler S, Redl H, Teuschl A. *An Effective Method of Atelocollagen Type 1/3 Isolation from Human Placenta and Its In Vitro Characterization in Two-Dimesional and Three-Dimensional Cell Culture Applications.* Tissue Eng Part C Methods. 2017 Mai;23(5):274-285.
2. Hackethal J, Hofer A, Hennerbichler S, Redl H, Teuschl A. *A comparison of enzymatic and non-enzymatic strategies to isolate extracellular matrix (ECM) proteins from human placenta and liposuction fat*. ALTEX Proceedings. 2019;8(1), p65.

Citations

1. Chen YX, Xie GC, Pan D, Du YR, Pang LL, Song JD, Duan ZJ, Hu B. *Three-dimensional Culture of Human Airway Epithelium in Matrigel for Evaluation of Human Rhinovirus C and Bocavirus Infections.* Biomedical and Environmental Sciences. 2018 Feb;31(2):136-145.
2. Mühleder S, Fuchs C, Basilio J, Szwarc D, Pill K, Labuda K, Slezak P, Siehs C, Pröll J, Priplinger E, Hoffmann C, Junger WG, Redl H, Holnthoner W. *Purinergic P2Y2 receptors modulate endothelial sprouting.* Cellular and Molecular Life Sciences. July 2019;CMLS 77(5).