



PRODUCT DATA SHEET

Native HUMAN PLACENTA Collagen-IV (COL4), solution

Comprising gamma-sterilized human collagen type 4 (COL4) prepared from human placenta tissue. Transferring placenta over to THT Biomaterials is based on an informed consent from the newborn's mother.

Catalog number #THT0401001-1/5/10 mL

Product description

Collagen is one of the most abundant proteins in connective tissues and organs of mammals. It provides the tensile strength of the extracellular matrix and is classified into distinct types. All collagen types are organized in three polypeptide chains assembled in a triple helical conformation with minor differences in their amino acid sequence. Collagen-IV exists only in basement membranes and comprehends up to six α -chains, named $\alpha 1$ (IV) to $\alpha 6$ (IV). Various cell types have been shown to bind to collagen-IV such as thrombocytes, hepatocytes, keratinocytes, endothelial, pancreatic cells, as well as cancer cells. Please refer to certificate of analysis of the product for detailed information.

Precautions and Disclaimer

This product is for R&D use only. Please consult the Safety Data Sheet for information regarding hazards and safe handling procedures.

Storage

Store stock solutions at 4-8°C for up to 6 months or at -20 °C for up to 12 months. Avoid multiple freeze thaw cycles.

Application 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 settings.

Guidelines for use

1. Prepare COL4 in your desired coating concentration. If necessary, dilute the stock solution with PBS buffer, distilled water, or cell culture medium. A coating concentration of at least 2 $\mu\text{g/mL}$ is recommended.
2. Add sufficient volume of COL4 to each well. It is important that the volume added to the dish is sufficient to cover the growth surface.
3. Keep the plate completely covered and incubate for 60 min at 37°C.
4. Tilt the plate to allow excess COL4 to drain to the lowest point and remove the remaining excess material with a sterile pipette.
5. Air dry the plate and use it for your experiments.

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-Dimensional and Three-Dimensional Cell Culture Applications. *Tissue Eng Part C Methods*. 2017 May;23(5):274-285.
2. Khoshnoodi J, Pedchenko V, Hudson BG. Mammalian collagen IV. *Microsc Res Tech*. 2008 May;71(5):357-70. doi: 10.1002/jemt.20564. PMID: 18219669; PMCID: PMC4788096.
3. MacWright RS, Benson VA, Lovello KT, van der Rest M, Fietzek PP. Isolation and characterization of pepsin-solubilized human basement membrane (type IV) collagen peptides. *Biochemistry*. 1983 Oct 11;22(21):4940-8.