Lab
Vienna Biocenter (VBC6)
Dr. Bohr Gasse 7
1030 Vienna
tht-biomaterials.com
office@tht-biomaterials.com

THT Biomaterials GmbH
extracellular platform technology
The Human Touch

PRODUCT DATA SHEET

HUMAN PLACENTA Substrate (hpS), solution

Comprising highly purified, gamma-sterilized bioactive extracellular matrix (ECM) proteins (hpS) prepared from human placenta tissue. Transferring placenta over to THT Biomaterials is based on an informed consent from the newborn's mother.

Catalog Number #THT0301504-1/5/10 mL

Product description

The ECM is nature's ideal environment for growth and cultivation of human cells. Especially basal membrane (BM) proteins modulate a wide range of fundamental key mechanisms in development, function, and homeostasis of human cells. The HUMAN PLACENTA Substrate (hpS) contains BM proteins such as laminin-111, collagen-IV, thrombin, bioactive growth factors, and other minor components. The hpS is liquid and prepared at a concentration of ~ 1,5 mg/mL. It does not gel at 37°C by itself. Addition of fibrinogen, collagen-I or other polymers can be used for polymerization. Human umbilical vein endothelial cells (HUVEC) show vasculogenesis within two days when grown in hpS. Please refer to certificate of analysis of the product for detailed information.

Precautions and disclaimer

For research use only. Please consult the Safety Data Sheet for information regarding hazards and safe handling procedures.

Storage and stability

Following reconstitution, aliquot and freeze hpS stock solutions at -20°C for up to 12 months, or -80°C for up to 24 months. Avoid multiple freeze thaw cycles.

Application notes

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

Guidelines for 2D coating

1. Prepare hpS 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 µg/mL is recommended.
2. Add sufficient volume of hpS 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 hpS to drain to the lowest point and remove the remaining excess material with a sterile pipette.
5. Use the plate for your experiments.

Guidelines for 3D gelling

1. Mix the hpS to your desired gel concentration using e.g. fibrinogen, collagen-I or synthetic polymers.
2. Add the mixture to the tissue culture plate.
3. Incubate the plate for gel formation. Gelation will depend on the type of polymer and additives used. Note: gels must be handled carefully. Never touch the gel with the pipette tip.

References

1. Hackethal J, Dungel P, Teuschl AH. Tissue Eng Part C Methods. 2021 Dec;27(12):649-660.
2. Hackethal J, Weihs AM, Karner L, Metzger M., Dungel P, Hennerbichler S, Redl H, Teuschl AH. Tissue Eng Part C Methods. 2021 Nov;27(11):616-632.