LSG LIFE SCIENCE GROUP

Product Information Sheet

Version v09 PI26 | Date 23.07.2026

Human Platelet Lysate



Product Overview

Human Platelet Lysate (hPL) is a solution obtained by lysing human platelets. It contains a rich mix of growth factors, cytokines and other bioactive molecules that stimulate cell growth, regeneration and tissue repair. This makes it ideally suited as a xeno-free supplement for (stem) cell culture in cell therapy production, among others.

Key Benefits

Applications and advantages

hPL is made from exclusively human material. This not only increases compatibility with human cell culture but eliminates the risk of zoonotic infections as with FBS. When ultimately used for clinical purposes, there is no risk of patient immunisation against animal proteins and is an additional argument to the regulator for approving your cultured cells.

Using hPL from the start reduces problems later in your development pathway. Not only is hPL often more efficient than FBS, but it is also, above all, an important choice for the long-term success of your project. When translating to a clinical setting by you or third parties, the use of FBS during research is a distinct disadvantage as it necessitates a switchover from FBS to hPL. As a result, your costly research must be re-lined with hPL.

European guidelines require that bovine material should be removed from culturing media wherever possible for any therapeutic product containing cultured cells. HPL is a suitable alternative for use in R&D and production/manufacturing processes.

Other advantages for the use of hPL in research and cell therapy applications include:

- Pooled from multiple donors. The consistent supply of donor platelets helps to stabilize availability and pricing.
- A standardized, qualified product which is manufactured to reduce batch-to-batch variation.
- Batch sizes, customized to client's needs
- Human-derived (animal-protein free) product which has been subject to extensive serology testing ensures safety for each batch.
- Improves the proliferation of Mesenchymal Stromal Cells (MSCs) compared to FBS without loss of phenotype.
- Enhances genetic stability in stem cell cultures.

sales@lifesciencegroup.co.uk | www.lifesciencegroup.co.uk | +44 01234 889180 | The Science Centre, 1 Blaydon Rd, Sandy, Bedfordshire SG19 1RZ

Collection and preparation

The preparation of hPL from donor to final product lies entirely with our preferred partnering blood establishment, thus we have excellent control over correct storage and handling of all sources, intermediate and final products. Our hPL is produced in a closed system so never encounters ambient air, whereas FBS or hPL from competitors often ends up in open systems both during collection at the slaughterhouse and during production.

Our partnering blood establishment has developed an innovative method to produce lysates from human blood platelets. The technique ensures that expired platelets are not lost and animal suffering is avoided.

Each year, thousands of platelet concentrates are discarded. As these can only be stored for five days, up to 10 per cent are destroyed. Our partnering blood establishment has now developed a biotech product that can make use of these "expired" platelets. Thanks to the new technique, the platelets can be used to develop growth serum, an important starting product for the development of vaccines or in cell and genetic engineering.

Specification

Human Platelet Lysate is a cell culture supplement derived from human Platelet Rich Plasma (PRP) is subjected to a proprietary process to induce growth factors release.

Sterility	Each batch is tested for the absence of bacteria and fungi.
Viral Testing	Each batch is tested and found non-reactive for anti-HIV-1/2, anti-HCV, HBsAg, syphilis, HIV NAT, HBV NAT and HCV NAT.
Endotoxin	All batches are tested to determine the levels of endotoxins using the Limulus amoebocyte lysate test (LAL) - <0.500 EU/mL.
Mycoplasma	Mycoplasma is tested by PCR technique.
Growth promotion	Biological performance of final batches of hPL are assessed by cell culture of MSC.
Country of Origin	EU
Available as cGMP	Yes, certain variants
Suitable for further manufacturing	Yes, certain variants

LSG LIFE SCIENCE GROUP

Product Information Sheet

Version v09 PI26 | Date 23.07.2026

Quality Assurance

hPL is derived from human donor platelets collected from healthy consenting volunteer donors at certified Blood banks (21CFR640). All individual donors and complete batches are fully tested for pathogens according to 21CFR610.

Our partnering blood establishment has developed a new method that effectively yields growth factor-rich supplement from excess platelet concentrates. This method removes platelet residue and lowers fibrinogen concentration, eliminating the need for heparin during cell culture. The new method and resulting hPL allow for optimal use of blood donations and contribute to the development and production of promising cell therapies.

Blood donation in the blood establishment is done exclusively by voluntary, non-remunerated donors who give their explicit consent. Donations are always used according to what is included in the informed consent. Risk behaviour of donors is questioned, and donations are extensively tested according to (inter)national quality requirements for transfusion. Platelet concentrates are treated with pathogen inactivation, reducing the risk of viral and bacterial transmission.

hPL does not contain any animal products and these are not used during preparation so the hPL is classified as xeno-free.

Ordering Information

Product Code	Product Description	Pack Size
HPL-600B	Human Platelet Lysate (hPL) Lysantum Premium Research Grade	100 mL
HPL-600A	Human Platelet Lysate (hPL) Lysantum Premium Research Grade	500 mL
HPL-601B	Human Platelet Lysate (hPL) Lysantum Premium Clinical Grade	100 mL
HPL-601A	Human Platelet Lysate (hPL) Lysantum Premium Clinical Grade	500 mL
HPL-602U	Human Platelet Lysate (hPL) Lysantum Ultra Research Grade	180 mL
HPL-602A	Human Platelet Lysate (hPL) Lysantum Ultra Research Grade	500 mL
HPL-603U	Human Platelet Lysate (hPL) Lysantum Ultra Clinical Grade	180ml
HPL-603A	Human Platelet Lysate (hPL) Lysantum Ultra Clinical Grade	500 mL

Specialist presentations are available on request. For research or manufacturing use only. Not for therapeutic or diagnostic use.

sales@lifesciencegroup.co.uk | www.lifesciencegroup.co.uk | +44 01234 889180 | The Science Centre, 1 Blaydon Rd, Sandy, Bedfordshire SG19 1RZ

LSG LIFE SCIENCE GROUP

Product Information Sheet

Version v09 PI26 | Date 23.07.2026



Storage

Recommended storage is -20˚C or below. Long-term storage -80˚C.



Packaging & Shipping

Product ships frozen on dry ice.

Additional Information

What is the difference between Research Grade and Clinical Grade?

hPL is available as research and clinical grades. hPL Ultra is a next generation platelet lysate that contains an even higher concentration of growth factors, so its composition is different. For most cells, both hPL Premium and hPL Ultra can be used. For optimal selection of hPL, we recommend validating both products with your cells.

Choice of media

The choice of basal medium depends on your application, duration of cell culture and the medium supplements used.

hPL Premium: Low calcium media are advised such as DMEM/F-12, RPMI-1640, Ham's F-12 and IMDM. We advise against using hPL Premium with DMEM or alpha-MEM since it is likely that precipitation will occur. Recommended for MSC culture: DMEM/F-12

hPL Ultra: This has been validated for use with DMEM, MEM, αMEM, DMEM/F-12, Ham's F-12 and IMDM. Other basal media should be tested for suitability Recommended for MSC culture: DMEM or DMEM/F-12

Storage & handling advice

It is recommended to avoid freeze-thaw cycles as this can lead to an increase in the formation of insoluble particles. Ideally, material should be thawed under controlled conditions and re-aliquoted into smaller volumes before re-freezing.

Pooling of hPL from multiple donors is routinely performed to provide a consistent product. Upon thawing the product may be physically cloudy or have floating debris. Particulate formation does not affect cell culture performance. This is normal and can occur following aggregation by hemagglutinins, even when donors are the same blood type. If clotting or insoluble particles appears in the final medium, it is recommended to filter the complete MSC culture medium after diluting the basal medium, to remove insoluble particulates.

Concentrations

Typically, hPL can be added to basal medium at 5% to 10% (v/v). In some situations, this can be reduced even further. However, for the optimal choice, it is always recommended

Using hPL

1. Thaw Human Platelet Lysate Solution overnight at 4˚C or until fully thawed in a 37˚C water bath.
2. Prepare complete MSC culture medium by adding Human Platelet Lysate Solution to basal medium (i.e. Dulbecco's Modified Eagles Medium-F12; DMEM-12) with 2 mM L-glutamine and 100 U/mL Penicillin/streptomycin as final concentration. Filter the complete medium.
3. hPL shows optimal growth of MSC at 5% (v/v). However, for higher cell proliferation rates, it is recommended to use 10% (v/v) hPL.
4. We recommend seeding MSCs at approximately 3x103 ~ 6x103 per cm2.
5. Complete MSC culture medium can be stored at 4˚C and is stable for approximately four weeks.to set up a validation comparing different concentrations.

Note: Pooling of hPL from multiple donors is routinely performed to provide a consistent product. Upon thawing the product, it may be physically cloudy or have floating debris. Particulate formation does not affect cell culture performance. This is normal and can occur following aggregation by hemagglutinins, even when donors are the same blood type. If clotting or insoluble particles appears in the final medium, it is recommended to filter the complete MSC culture medium after diluting the basal medium, to remove insoluble particulates.

References

- Delabie W, De Bleser D, Vandewalle V, De Prest M, Vandekerckhove P, Compernolle V, Feys HB. The Impact of Amotosalen Photochemical Pathogen Inactivation on Human Platelet Lysate Curr Stem Cell Res Ther. 2024 in press
- De Korte D , Delabie W, Feys H, Klei T, Larsen R, Sigurjónsson Ó, Sousa AP. Towards standardized human platelet lysate production in Europe: an initiative of the European Blood Alliance Vox Sang. 2024 Jan;119(1):79-87.
- Delabie W , De Bleser D, Vandewalle V, Vandekerckhove P, Compernolle V and Feys H. Single step method for high yield human platelet lysate production Transfusion. 2023 Feb;63(2):373-383.

Need advice?
Speak to LSG to discuss your specific requirements and we would be happy to recommend material for evaluation.