

Description

UltraGRO™ cell culture supplement is a non-xenogeneic, animal serum-free, and heparin-requiring media supplement for replacing FBS (fetal bovine serum) to support cell expansion from research through clinical trials to commercial use. UltraGRO™ contains abundant growth factors and cytokines necessary for research or industrial cell growth and proliferation of multiple cell types (e.g. MSCs).



Product	Catalog No.	Spec.	Storage	Shelf Life*
UltraGRO™ (Research grade)	HPCPLCRL05	50mL	Store at -20°C	30 months
	HPCPLCRL10	100mL		
	HPCPLCRL50	500mL		
UltraGRO™ (GMP grade)	HPCPLCGL05	50mL		
	HPCPLCGL10	100mL		
	HPCPLCGL50	500mL		

*Shelf life duration is determined from Date of Manufacture, continuously stored frozen in original bottle.

Intended use

For human ex-vivo tissue and cell culture processing applications.

Important information

Clotting or insoluble particles may form in thawed UltraGRO™ cell culture supplement. Published research has shown that particles will not alter the performance of the product.

Safety information

- Follow the handling instructions outlined in the Material Safety Data Sheets (MSDSs). Wear appropriate protective eyewear, clothing, and gloves.
- Human origin materials are non-reactive (donor level) for anti-HIV 1 & 2, anti-HCV and HBsAg. Handle in accordance with established bio-safety practices.

MSC culture conditions

Media:

Complete medium is comprised of a basal media (e.g. α -MEM or other supportive media), heparin and UltraGRO™

Culture type: Adhesion

Culture vessels: Cell culture plates, T-flasks, G-Rex flasks or cell culture bags

Temperature range: 36°C to 38°C

Incubator atmosphere: Humidified atmosphere of 4–6% CO₂. Ensure that proper gas exchange is achieved in culture vessels.

Precipitation in Cell Culture

- Clotting or insoluble particles may form in thawed UltraGRO™, it is recommended to centrifuge at 3,400 \times g for 3 ~ 5 minutes or to filter the liquid concentrate with a sterile 40 μ m Cell Strainer to remove insoluble particles.
- Filtering the completed medium (e.g. 5%), after UltraGRO™ is diluted in the basal medium, will not affect UltraGRO™ supplemented cell culture performance. However, 0.22 μ m filtering is **NOT** recommended for the 100% UltraGRO™ concentrate, as this may reduce 5% UltraGRO™ cell culture performance.
- Repeated freeze-thaw cycles should be avoided as they will cause an increase in insoluble precipitates and resulting potential decrease in UltraGRO™ performance.

Protocol

- UltraGRO™ shows optimal growth of MSC at 5% (v/v) in typical cell culture media, i.e. α -MEM, which contains 2mM L-Glutamine as final concentrate.
- We recommend seeding MSCs at approximately 3 \times 10³ ~ 6 \times 10³ per cm².
- UltraGRO™ requires heparin at a final concentration of 2IU/ml to be added in the culture media when supplemented with 5% UltraGRO™. Failure to add heparin will result in coagulation during cell culture in typical media.

Storage

UltraGRO™ is most stable when stored frozen until needed. The recommended storage temperature is -20°C or -80°C. Thaw frozen UltraGRO™ product in 37 °C water bath before use. Once UltraGRO™ is thawed, it is recommended to fully use for completed medium preparation (e.g. 5%) the same day, or to divide it into single-use aliquots and store unused aliquots at -20°C or -80°C.

Cell Lines

Bone marrow mesenchymal stem cells

Adipose tissue derived mesenchymal stem cells

Umbilical cord derived mesenchymal stem cells

Other mesenchymal stem cells

References

- Griffiths S, Baraniak PR, Copland IB, Nerem RM, McDevitt TC. Human platelet lysate stimulates high-passage and senescent human multipotent mesenchymal stromal cell growth and rejuvenation in vitro. *Cytotherapy*. 2013; 15(12):1469-83.
- Shanskii YD, Sergeeva NS, Sviridova IK, Kirakozov MS, Kirsanova VA, Akhmedova SA, et al. Human platelet lysate as a promising growth-stimulating additive for culturing of stem cells and other cell types. *Bull Exp Biol Med*. 2013; 156(1):146-51.
- Naaijkens BA, Niessen HW, Prins HJ, Krijnen PA, Kokhuis TJ, de Jong N, et al. Human platelet lysate as a fetal bovine serum substitute improves human adipose-derived stromal cell culture for future cardiac repair applications. *Cell Tissue Res*. 2012; 348(1):119-30.
- Ben Azouna N, Jenhani F, Regaya Z, Berraëis L, Ben Othman T, Ducrocq E, et al. Phenotypical and functional characteristics of mesenchymal stem cells from bone marrow: comparison of culture using different media supplemented with human platelet lysate or fetal bovine serum. *Stem Cell Research & Therapy*. 2012, 3(1):6.
- Rauch C, Feifel E, Amann EM, Spötl HP, Schennach H, Pfaller W, et al. Alternatives to the use of fetal bovine serum: human platelet lysates as a serum substitute in cell culture media. *ALTEX*. 2011; 28(4) : 305-16.
- Crespo-Diaz R, Behfar A, Butler GW, Padley DJ, Sarr MG, Bartunek J, Dietz AB, Terzic A. Platelet lysate consisting of a natural repair proteome supports human mesenchymal stem cell proliferation and chromosomal stability. *Cell Transplant*. 2011; 20(6):797-811.
- Lucchini G, Introna M, Dander E, Rovelli A, Balduzzi A, Bonanomi S, et al. Platelet-lysate-Expanded Mesenchymal Stromal Cells as a Salvage Therapy for Severe Resistant Graft-versus-Host Disease in a Pediatric Population. *Biol Blood Marrow Transplant*. 2010; 16(9):1293-301.
- Capelli C, Domenghini M, Borleri G, Bellavita P, Poma R, Carobbio A, et al. Human platelet lysate allows expansion and clinical grade production of mesenchymal stromal cells from small samples of bone marrow aspirates or marrow filter washouts. *Bone Marrow Transplant*. 2007; 40, 785–791.

上海揽宝仪器设备有限公司

订购电话:185-1629-2006

Email:sales@lab-pal.com

QQ:14699306

For additional technical information such as Safety Data Sheets (SDS), Certificates of Analysis, visit www.atcbiomed.com. For further assistance, email sales@atcbiomed.com

© 2015 AventaCell BioMedical Co., Ltd. All rights reserved. All trademarks herein are marks of AventaCell group and its subsidiaries.

DISCLAIMER: TO THE EXTENT ALLOWED BY LAW, AVENTACELL BIOMEDICAL AND/OR ITS AFFILIATE(S) WILL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, INDIRECT, PUNITIVE, MULTIPLE OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING FROM THIS DOCUMENT, INCLUDING YOUR USE OF IT. www.atcbiomed.com