PRIME-XV Adipogenic Differentiation SFM

Catalog #	Product	Size
91137	PRIME-XV Adipogenic Differentiation SFM	100 mL liquid

Intended Use

PRIME-XV Adipogenic Differentiation SFM is intended for use in the adipogenic differentiation of human mesenchymal stem cells (MSCs). This medium is ready to use and can be supplemented with additional cytokines/ growth factors for desired applications.

Product Description

PRIME-XV Adipogenic Differentiation SFM is a serum-free complete medium optimized for the differentiation of human MSCs. This product does not contain antibiotics.

Shipping

This product is shipped with dry ice. Upon receipt, store it immediately at the temperature recommended below.

Quality Assurance

All quality control test results are reported on a lot specific Certificate of Analysis which is available at www.irvinesci.com or upon request.

Storage Instructions and Stability

Upon receipt, store the medium at or below -10°C in a manual defrost freezer. Unopened medium is stable for 30 months from date of manufacture, as indicated on label, when stored at or below -10°C in a manual defrost freezer. PRIME-XV Adipogenic Differentiation SFM can be aliquoted and stored at or below -10°C in a manual defrost freezer for up to 3 months. When ready to use, thaw this medium overnight at 2-8°C in the dark. PRIME-XV Adipogenic Differentiation SFM should be used within one week when stored at 2-8°C and protected from light. Not validated for use beyond the unopened expiry shelf life. Repeated freeze-thaw cycles should be avoided.

Precautions

For research use or further manufacturing use only. Not for injection or diagnostic procedures. This reagent should not be used beyond the expiration date. Results may vary due to variations among human MSCs derived from different donors.

This product contains components derived from human plasma, which has been tested and found negative for antibodies to HIV-1/2, hepatitis B surface antigen (HBsAg), and hepatitis C virus (HCV). However, the medium should be handled as if potentially infectious. Safe laboratory procedures should be followed and protective clothing should be worn when handing this medium. The acute and chronic effects of over-exposure to this medium are unknown.

Directions for Use

The following protocol is optimized for adipogenic differentiation of human MSCs derived from adipose tissue in two dimensional culture vessels.

Preparation of Culture Plates for Adipogenic Differentiation

NOTE: To induce adipogenic differentiation of MSCs in PRIME-XV Adipogenic Differentiation SFM (IS, Catalog# 91137), tissue culture plates or flasks are suggested to be pre-coated with substrate for better cell attachment and preventing cell detachment during differentiation. It is highly recommended that PRIME-XV MatrIS F (IS, Catalog# 31001) or PRIME-XV Human Fibronectin (IS, Catalog# 31002) be used to coat culture surfaces for better differentiation. Other attachment substrates may be used and must be validated by end-user for optimal performance.

1. Gently add PRIME-XV MatrIS F in PBS (IS, Catalog# 9236) to a final concentration of 1 µg/ mL.
2. Add 0.5 mL of diluted coating solution to each well in a 24-well plate.
3. Incubate culture vessels at room temperature for 3 hours or overnight at 2–8°C. The culture vessel must be sealed with Parafilm® to avoid drying if stored at 2–8°C overnight. It is recommended to coat culture vessels the day of use or the day before use.
4. Aspirate out and discard diluted coating solution from culture vessels before the addition of cells.

Adipogenic Culture Protocol

1. Pre-coat tissue culture plates with 1µg/ mL of PRIME-XV MatrIS F or PRIME-XV Human Fibronectin (See Preparation of Culture Plates for Adipogenic Differentiation section).
2. Seed human MSCs with 40,000 cells in 0.5 mL pre-warmed PRIME-XV MSC Expansion SFM (IS, Catalog# 91135) or pre-warmed PRIME-XV MSC Expansion XSFM (IS, Catalog# 91149) per well of a 24-well plate. Expand cells until an optimal cell density between 80-100% confluence is reached before inducing adipogenesis. Expansion usually takes 1–2 days.
3. When cells reach optimal confluence, replace the PRIME-XV MSC Expansion SFM or PRIME-XV MSC Expansion XSFM in each well with 0.5mL pre-warmed PRIME-XV Adipogenic Differentiation SFM to initiate differentiation.
4. Incubate at 37°C, 5% CO_2.
5. Remove and discard spent media every 2-3 days. Feed cells with 0.5mL pre-warmed PRIME-XV Adipogenic Differentiation SFM per well.
6. Approximately 10-21 days under differentiation condition, cells may be fixed for Oil Red O staining or processed for immunostaining.

Oil Red O Stain Analysis

1. After 10-21 days under differentiation culture, aspirate media from 24-well plates and rinse wells once with PBS without calcium and magnesium (IS, Catalog# 9240).
2. Fix cells with 4% formaldehyde solution for 30 minutes.
3. After fixation, rinse wells twice with distilled water and stain cells with 0.3% Oil Red O in isopropanol solution.
4. Add 500 µg/well and incubate at room temperature for 15 minutes.

5. Aspirate the Oil Red O solution and rinse wells twice with distilled water, visualize under light microscope and capture images.

Data

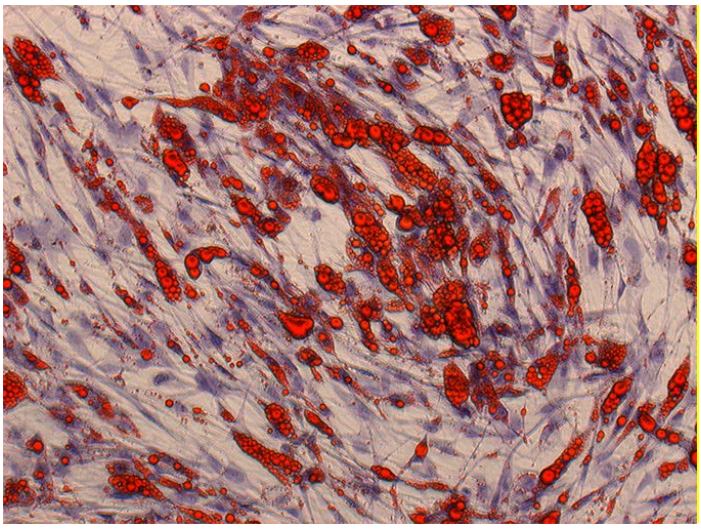

Figure 1. Human adipose-derived MSCs cultured in PRIME-XV MSC Expansion SFM and differentiated into adipocytes using PRIME-XV Adipogenic Differentiation SFM. Lipid droplets stained with Oil Red O solution, Image taken at 20X magnification.

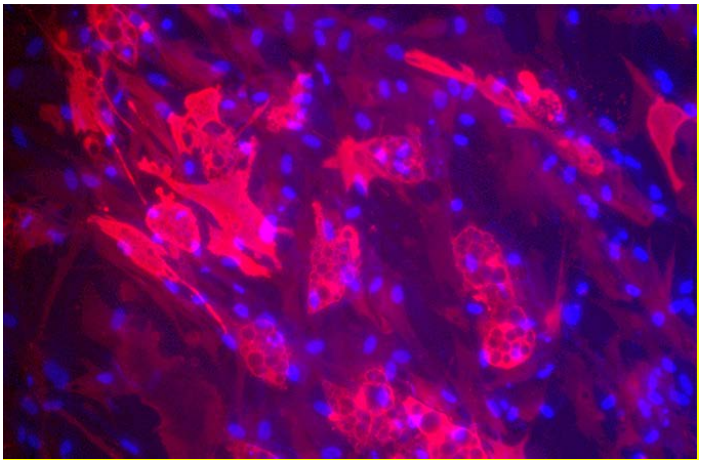

Figure 2. Fatty Acid Binding Protein 4 (FABP4) staining, image taken at 20X magnification.

Technical Support

CONTACT US

For more information or assistance contact Customer Service at:

- Email: fisitmrequest@fujifilm.com
- Direct line: +1 800 577 6097

WEBSITE RESOURCES

Visit the website at www.irvinesci.com for technical resources and information including:

- Safety Data Sheets (SDS)
- Certificate of Analysis (CoA) (when available)
- FAQs
- Product literature
- Complete list of offices and contact information by country

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