



Rat Visceral Adipocyte V-1

【 Catalog No.PMC-VAC01C 】

July 1, 2024

I. Product Overview

Mesenteric adipocytes, a type of visceral adipocytes, are located along the portal vein that transports nutrients absorbed from the intestinal tract to the liver (Fig. 1). Evidence has shown that excess fat accumulation in the visceral adipose tissue contributes to the pathogenesis of Type II diabetes, hypertension and atherosclerosis. The Rat Visceral Adipocyte Culture Kit contains preadipocytes isolated from rat mesentery and culture medium that induces differentiation of precursor cells into mature adipocytes, finally causes hypertrophy.

The product provides a convenient system for studying the mechanism of adipogenesis as well as for screening drugs that prevent metabolic syndrome such as obesity, diabetes and hypertension by blocking the processes of adipogenesis.

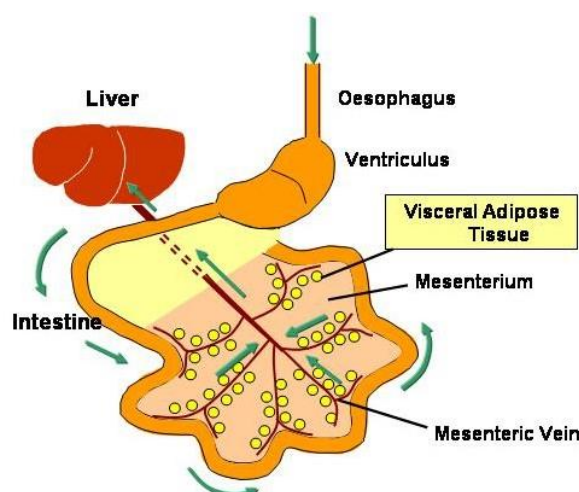


Figure1. Relationship of the positioning of mesenteric fat tissue

II. Precautions Before Use

Please make sure to review this manual before using the product.

Product should be used under [aseptic operation]. The biosafety level is [Level 1].

Please use the dedicated medium sold separately for culturing this product.

III. Product Warranty

We guarantee against growth failure after the start of culture only if cells have been properly stored in liquid nitrogen, and cultured according to the manual using the dedicated medium and reagents.

The warranty period is [within 6 months of receiving the product].

Please note that the warranty does not apply if there have been changes to the medium or the method of use, if re-frozen cells have been used.

IV. Components

Product Name	Size	Quantity	Storage Conditions	Stability
Visceral Preadipocytes, Rat	3 x 10 ⁶ cells/vial	1 vial	Liquid nitrogen storage	6 months

※ Store frozen cells in liquid nitrogen if not ready for use after receipt.

V. Dedicated Media (Serum Containing Media) (sold separately)

Catalog No.	Product Name	Size	Storage	Expiration
VACMR	Visceral Adipocyte Culture Medium Ver.1	250 mL	-20°C Freezer	- Written on the bottle
			4°C	3months after thawing
VACM2	Visceral Adipocyte Culture Medium Ver.2	250 mL	-20°C Freezer	- Written on the bottle
			4°C	3months after thawing

Culture Medium components: DMEM/F-12, FBS, antibiotics, etc.

※Medium component comparison

Medium component	Visceral Adipocyte Culture Medium Ver.1 (Cat No. VACMR)	Visceral Adipocyte Culture Medium Ver.2 (Cat No. VACM2)
Differentiation inducer	×	×
fatty acid	○	○
Serum	○	○
Insulin concentration	10,000 ng/mL	1 ng/mL
Growth factor	×	○

VI. Materials required but not provided

- Variable volume pipettes
- Culture plate, 24-well, flat bottom
- Visceral Adipocyte Culture Medium

VII. Protocols

1. Thaw the Visceral Adipocyte Culture Medium at 4°C
 2. Thaw vials of frozen cells by warming them in 37°C warm water for 2 minutes.
 3. Transfer thawed cell solution to a 15 mL centrifuge tube containing 10 mL of Visceral Adipocyte Culture Medium. Mix gently and centrifuge at 4°C at 200 x g for 5 minutes.
 4. Remove the supernatant and re-suspend cells in 10 mL of Visceral Adipocyte Culture Medium and centrifuge at 4°C at 200 x g for 5 minutes.
 5. Remove the supernatant and re-suspend the cell pellet in 12.5 mL of Visceral Adipocyte Culture Medium 6. Dispense 0.5 mL of cell suspension to each well of 24-well plate and incubate the plate at 37°C in a 5% CO₂ humidified incubator.
 7. Gently add 0.5 ml of Visceral Adipocyte Culture Medium to each well of 24-well plate on the following day.
 8. Carefully change the medium 1 ml per well on the second day after seeding.
 9. Change the medium every other day. Be careful to not disturb the cell layer.
- i. Approximately 3-4 days of culture, preadipocyte culture becomes confluent.
 - ii. Approximately 5 days of culture, cells turn to mature adipocytes.
 - iii. Approximately 8 days of culture, cells become hypertrophic and start detaching from the bottom of the well.

VIII. Technical information

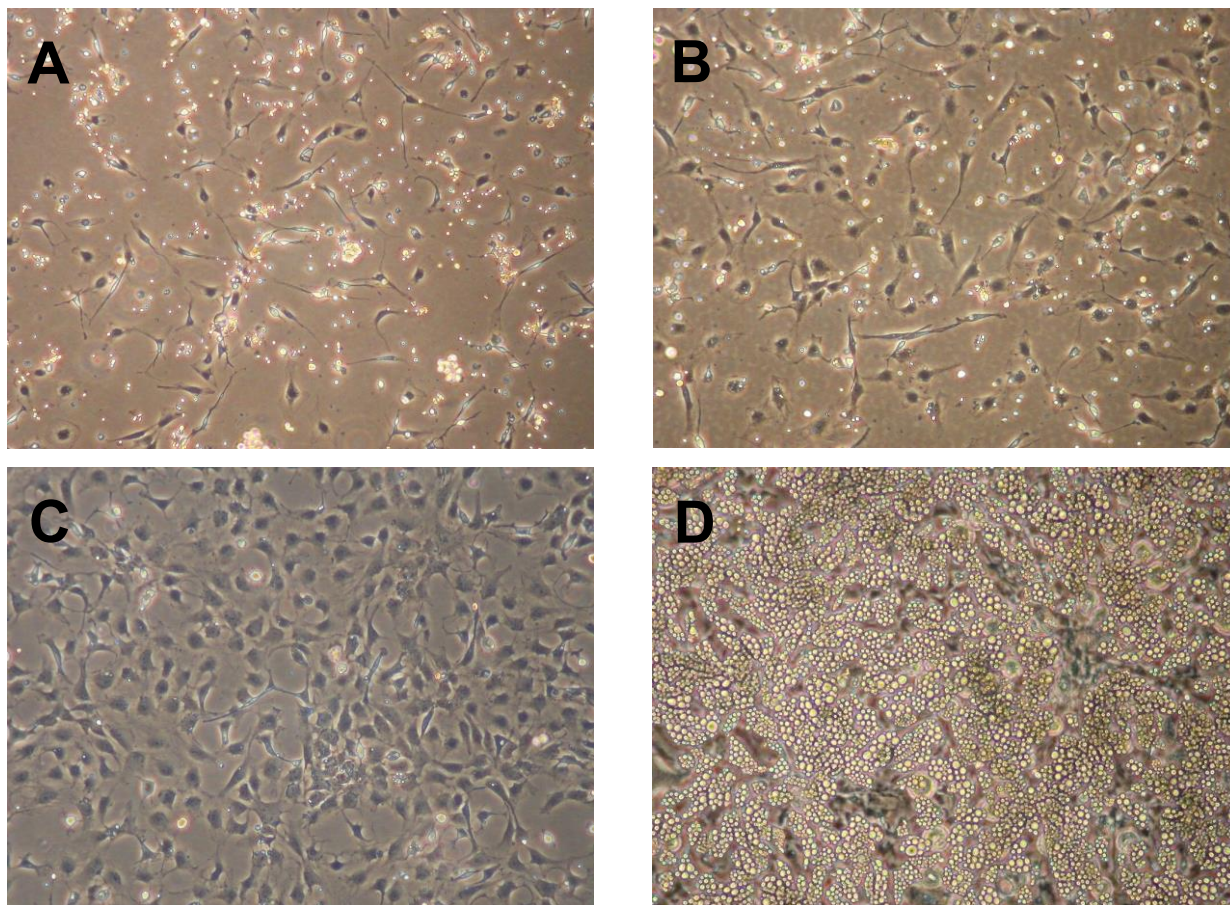


Figure 2. Cell morphology

A: Cells on the 1st day of culture, B: Cells on the 2nd day of culture, C: Cells on the 3rd day of culture, D: Cells on the 8th day of culture



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