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Inspiration for Life Science

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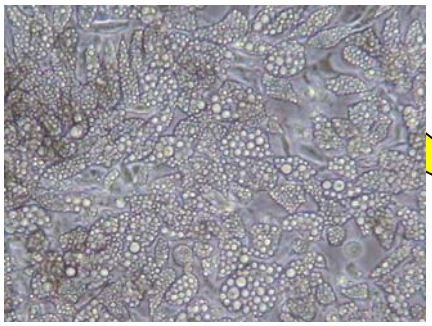
Catalog No.PMC- SAC01-COS

White Adipocyte Culture kit, V-1 (Rat)

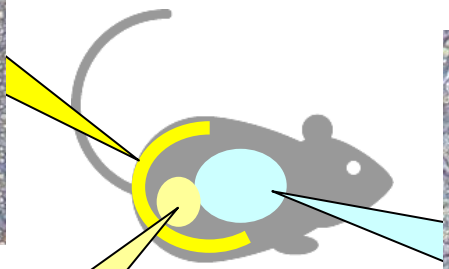
(Rat Cryopreserved Cell and culture medium)

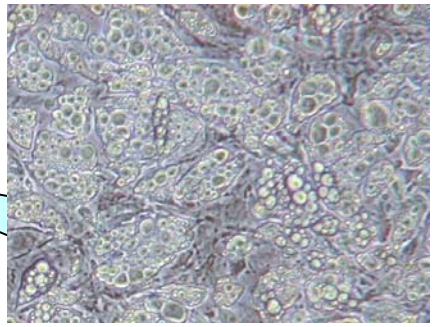
Principle

White adipocytes, a type of subcutaneous adipocytes, play an important role in energy storage. White Adipocyte Culture Kit, V-1 (Rat) contains preadipocytes isolated from rat subcutaneous adipose tissues and culture medium that induces differentiation of precursor cells into mature adipocytes. The kit provides a convenient system for studying the mechanism of adipogenesis as well as for analyzing effects of drugs on metabolic syndrome such as obesity, diabetes and hypertension.

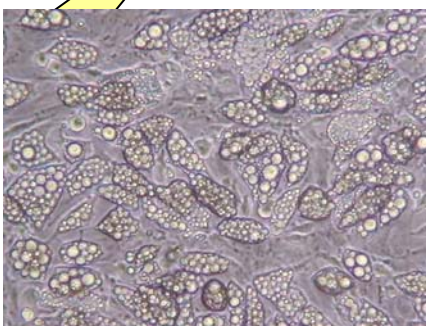


White adipocytes
Day 9





Visceral adipocytes
Day 9



Epidimal adipocytes
Day 9

Components

Components	Size	Quantity	Storage Conditions	Shelf Life
Subcutaneous White Preadipocytes, rat	3.0 x 10^6 cells	1	Liquid Nitrogen	1 year
			-80°C Freezer	1 year
White Adipocyte Culture Medium (PMC-SACMR-COS)	250 mL	1	-80°C Freezer	1 year
			-20°C Freezer	6 months

Shipping : dry ice

Materials required but not provided

- Variable volume pipettes
- Culture plate

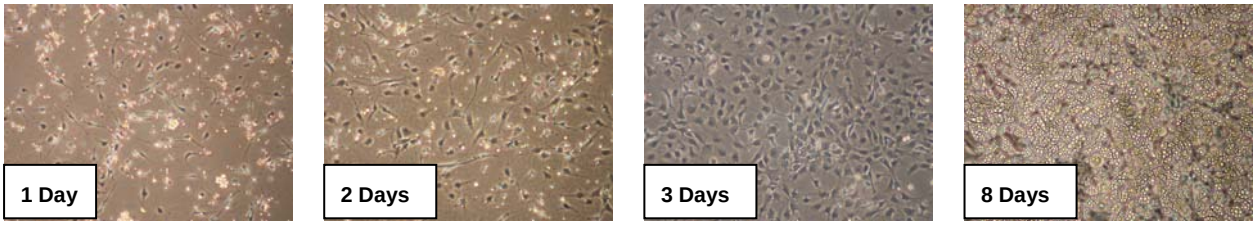
Precautions

- Read the instructions carefully before beginning the culture.
- This kit is for research use only, not for human or diagnostic use.
- Always wear gloves and lab coat when handling the cell culture.

Protocols <Cultured with the 24well-plate>

1. Thaw Adipocyte Culture Medium in a 37°C water bath with gentle shaking .
2. Quickly place Common Precursor Cell vial in a 37°C water bath until the contents are thawed.
3. Transfer thawed cells into a 15 ml centrifuge tube containing 10 ml of Adipocyte Culture Medium. Mix gently and centrifuge for 5 minutes at 4°C at 170 x g for 5 minutes.
4. After removing the supernatant, resuspend cells in 10 ml of Adypocyte Culture medium and centrifuge for at 4°C at 170 x g for 5 minutes.
5. After removing the supernatant, resuspend cells in 12.5 ml of Adypocyte Culture medium.
6. Dispense 0.5 ml of cell suspension to each well of 24-well plate.
7. Incubate the plate at 37°C under 5 % CO_2, 100 % humidity.
8. After 1 Day culture, add 0.5 ml of Adipocyte Culture Medium gently to each well of 24-well plate.
9. Change the medium every 2 days. Be gentle not to disturb the cell layer.
    i. Approximately 3 days of culture, preadipocyte culture becomes confluent.
    ii. Approximately 4 -5 days of culture, cells turn to mature adipocytes.
    iii. Approximately 7 days of culture, cells become hypertrophic.
    iv. Approximately 8 days of culture, start detaching from the bottom of the well.

Cellular morphology



References

(1) Hashimoto, T., Igarashi, J., Kosaka, H. Sphingosine Kinase is Induced in Mouse 3T3-L1 cells and Promotes Adipogenesis. J. Lipid Res. 50, 602-610 (2009)

(2) Takahashi, K., Yoshina, S., Masashi, M., Ito, W., Inoue, T., Shiwaku, H., Arai, H., Mitani, S., Okazawa, H. Nematode Homologue of PQBP1, a Mental Retardation Causative Gene, Is Involved in Lipid Metabolism. PLoS One. 4, e4104 (2009)

(3) Oguri, A., Tanaka, T., Iida, H., Meguro, K., Takano, H., Oonuma, H., Nishimura, S., Morita, T., Yamasoba, T., Nagai, R., Nakajima, T. Involvement of Cav3.1 T-type Calcium Channels in Cell Proliferation in Mouse Preadipocytes. Am. J. Physiol. Cell Physiol. 298, C1414-C1423 (2010)

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