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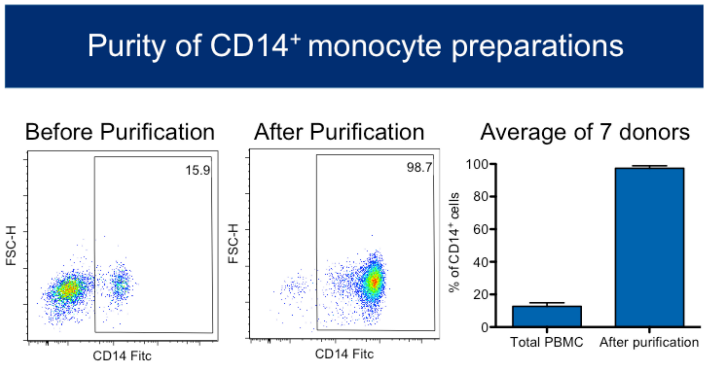
Human Macrophages

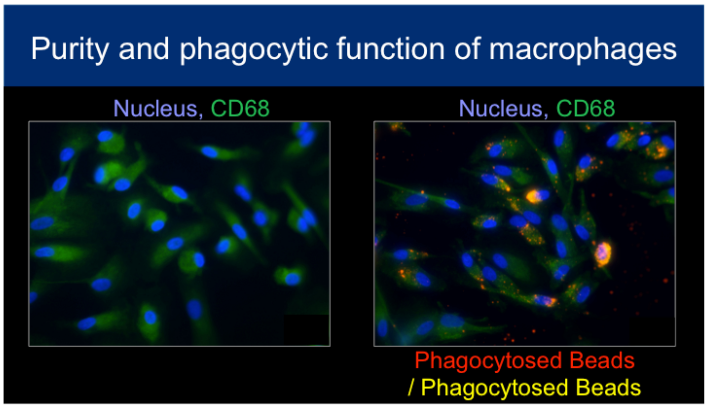
Product Description
Human macrophages differentiated from Peripheral Blood Mononuclear Cells (PBMC)-derived monocytes.

Sample Collection and Processing
$CD14^+$ monocytes were isolated from buffy coats of normal human volunteers by positive selection using an immunomagnetic cell separation method. Monocytes were differentiated into macrophages by culturing cells for 10-13 days in the SkinAxis proprietary medium.

Purity
The purity of PBMC-derived $CD14^+$ monocytes, as measured by flow cytometric analysis, is ≥95% (left panel). Macrophages are >99% positive for the pan-macrophage CD68 marker and show efficient phagocytic function (right panel).



FACS analysis of $CD14^+$ cells before (Total PBMC) and after purification indicates the enrichment of $CD14^+$ monocytes population to >95%.



Staining of monocyte-derived macrophages with CD68 (left panel). The phagocytosis of fluorescent polystyrene beads confirms efficient phagocytic function of macrophages (right panel).

Thawing and General Culture Protocol

1. Wipe the frozen cryovial with 70% ethanol in the biosafety sterile hood. Partially thaw the vial of cells in the 37°C water bath for 2 mins. Thawing the cells at 37°C for longer than 2 minutes results in reduced viability. DO NOT submerge the entire vial in the water bath. Wipe the cryovial with 70% ethanol and move to a biosafety sterile hood.
2. Carefully add 500ul of DMEM supplemented with 10% FBS, 2mM Glutamine (complete medium) into the vial and quickly transfer the whole volume into the 10 ml of complete medium. DO NOT pipet repeatedly.
3. Plating at a density of 10^5 cells per cm^2 is recommended. Incubate at 37°C, 5% CO_2 for 16-24 hours in a humidified incubator.
4. After 16-24 hours of culturing, check the cells under a light microscope; macrophages should have adhered to the culture dish/plate. Change the medium to remove any residual DMSO from cryopreservation.
5. Replace medium every 2 days.

Stability and Storage
Macrophages are cryopreserved in the SkinAxis Freezing Medium and are stable for long-term storage at -152°C or in liquid nitrogen. Storage at -80°C is NOT recommended. Once thawed, the cells must be used immediately.

Quality control
Cells are derived from donors with undetectable HIV-1, hepatitis B and hepatitis C. Macrophages are characterized by morphological analysis, specific marker expression, and phagocytic ability.

Handling
Primary cells from human blood are a potential biohazard. Treat as potentially infectious. All human sourced products should be handled at the Biological Safety Level 2 to minimize exposure of potentially infectious products.

THIS PRODUCT IS FOR IN VITRO RESEARCH USE ONLY