

CD14⁺ Monocytes – Technology Overview

Primary Immune Cells selected from Peripheral Blood Mononuclear Cells

Product overview

AvantiCell Science (ACS) selects CD14⁺ monocytes from peripheral blood mononuclear cells (PBMCs) via immunomagnetic selection. Human blood samples are obtained with full ethical permission.

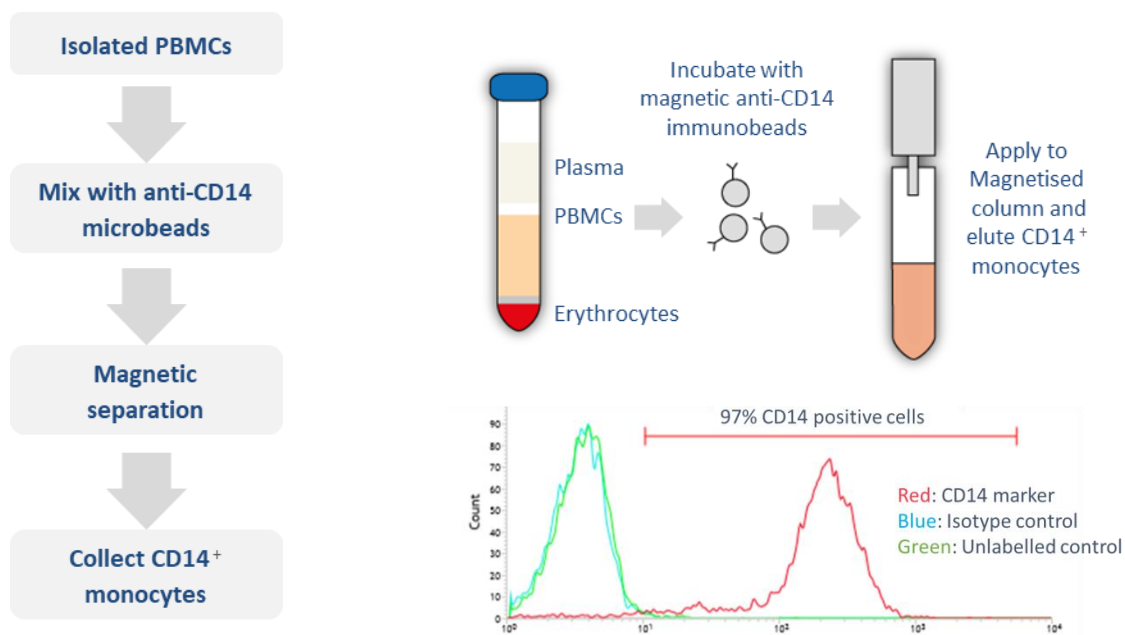
Cells are banked using ACS cryopreservation technology and stored at -150°C

Monocytes, produced in the bone marrow, are the largest human leukocyte cell type and account for approximately 6% of circulating white blood cells. Monocytes are sentinels for viruses, bacteria and fungi and migrate to different tissues of the body, where they can sense the environment and then differentiate into dendritic cells (DCs) and macrophages (M ϕ) as required.

Human CD14⁺ monocytes are isolated and purified from PBMCs via immunomagnetic separation (see below), characterised by fluorescence-activated flow cytometry, cytokine induction and cell health indices and cryopreserved immediately after isolation.

There are several immunological applications for CD14⁺ monocytes, most commonly *in vitro* differentiation into monocyte-derived DCs (moDCs) and macrophages (moM ϕ).

CD14 is a cell surface protein that belongs to the lipopolysaccharide, or LPS, receptor TLR4 complex and is a component of the innate immune system. Binding at this receptor triggers the innate inflammatory reaction.



CD14⁺ monocytes are selected from isolated PBMCs via immunomagnetic separation. CD14 cell surface marker expression is confirmed via flow cytometry.