MojoSort™ Human CD41 Nanobeads Protocol

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Abstract

Product description and procedure summary: The cells targeted by the Nanobeads are either selected or depleted by incubating your sample with the directly conjugated magnetic particles. The magnetically labeled fraction is retained by the use of a magnetic separator. After collection of the targeted cells, downstream applications include functional assays, gene expression, phenotypic characterization, etc.

Note: This procedure is optimized for the isolation of 10^7 to 2×10^8 cells per tube. If working with fewer than 10^7 cells, keep volumes as indicated for 10^7 cells. For best results, optimize the conditions to your specific cell number and tissue. Prepare fresh MojoSort™ Buffer solution by diluting the 5X concentrate with sterile distilled water.*Scale up volumes if using 14 mL tubes and Magnet, and place the tube in the magnet for 10 minutes.*

Application notes: To use this product in magnetic separation columns, a titration of the Nanobeads should be performed. Optimal concentration for magnetic separation columns is lot-specific. Please contact BioLegend Technical Service (tech@biolegend.com) for further assistance on how to use MojoSort™ Nanobeads in magnetic separation columns.

Materials

MATERIALS

MojoSort™ Buffer **BioLegend Catalog #**480017

MojoSort™ Magnet **BioLegend Catalog #**480019

MojoSort™ Human CD41 Nanobeads **BioLegend Catalog #**480083, 480084

- Adjustable pipettes
- 70µm filters (one per sample)
- 5mL (12 × 75mm) or 14mL (17 × 100mm) polypropylene tubes
- Reagents for sample preparation
- Reagents and instruments (Flow cytometer) to determine yield and purity

1 Prepare cells from your tissue of interest or blood without lysing erythrocytes. If erythrocytes are lysed, the volume of Nanobeads may need to be adjusted. Please contact BioLegend Technical Service for guidance. Kits for human samples have been optimized for PBMCs, please prepare the cells using a suitable method.

2 In the final wash of your sample preparation, resuspend the cells in MojoSort™ Buffer by adding up to 4 mL in a 5 mL (12 × 75 mm) polypropylene tube.
Note: Keep MojoSort™ Buffer on ice throughout the procedure.

3 Filter the cells with a 70µm cell strainer, centrifuge at 300xg for 5 minutes, and resuspend in an appropriate volume of MojoSort™ Buffer. Count and adjust the cell concentration to 1×10^8 cells/mL.

4 Aliquot 100 µL of cell suspension (10^7 cells) into a new tube.

5 Resuspend the beads by vortexing, maximum speed, 5 touches. **Add 10µL of MojoSort™ Human CD41 Nanobeads**. Mix well and **incubate on ice for 15 minutes**. Scale up the volume accordingly if separating more cells. For example, add 100 µL of Nanobeads for separating 1×10^8 cells in 1 ml of MojoSort™ Buffer. When working with less than 10^7 cells, use indicated volumes for 10^7 cells.

6 Wash the cells by adding MojoSort™ Buffer up to 4 mL. Centrifuge the cells at 300xg for 5 minutes.

7 Discard the supernatant.

8 Add 2mL of MojoSort™ Buffer.
Note: If you observe aggregates, filter the suspension. To maximize yield, you can disrupt the aggregates by pipetting the solution up and down.

9 Place the tube in the magnet for 5 minutes.
Optional: Take a small aliquot before placing the tube in the magnet to monitor purity and yield. Keep unused cells to be used as control or other applications if needed.

10 Pour out the unlabeled fraction, **DO NOT DISCARD.** Resuspend the labeled cells in 2 mL MojoSort™ Buffer.

11 Place the **labeled** fraction in the magnet for 5 minutes.

12 Pour out the unlabeled fraction and pool with the previously collected unlabeled cells (should contain ~4 mL buffer and cells).

13 Place the pooled **unlabeled** fraction in the magnet for 5 minutes.

14 Pour out the unlabeled fraction, these are the cells of interest, **DO NOT DISCARD**. The labeled fraction may be useful as staining controls, to monitor purity/yield, or other purposes.*Optional: Take a small aliquot to monitor purity and yield.*