



# DISCOVERY

L I F E S C I E N C E S

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## Standard Processing of Normal Bone Marrow Mononuclear Cells (BMMCs)

### Parameters:

- **Collection Tube** - 50mL conical containing sodium heparin and RPMI-1640
- **Storage Temperature** - LN2 storage
- **Final Product Volume** - 1.0mL
- **Final Product Freezing Media** - 90% heat inactivated FBS/10% DMSO
- **Final Product Vial** - 1.0mL Matrix cryovial (Thermo Fisher catalog number 3740)
- **Cell Count & Viability** - Performed using a Nexcelom Cellometer with AOPI staining

### Procedure:

Normal bone marrow is collected from hip replacement surgeries. Therefore, a filtering step is necessary to remove bone chips and other solid material from the collection tube.

1. Filter bone marrow.
2. Dilute bone marrow with dPBS + 2% FBS.
3. Layer diluted bone marrow into 50mL conical tubes containing Ficoll-Paque<sup>™</sup> Plus.
4. Spin layered tubes at 400xg for 20 minutes at 20°C.
  - a. Acceleration = 10% of maximum
  - b. Deceleration = 0
5. Aseptically pipette and discard plasma layer.
6. Aseptically pipette buffy coat layer into a fresh 50mL conical tube.
7. Dilute BMMCs with dPBS + 2% FBS.
8. Spin cells at 300xg for 10 minutes at 20°C.
  - a. Acceleration = maximum
  - b. Deceleration = maximum

## Standard Processing of Normal Bone Marrow Mononuclear Cells (BMMCs) - Continued

9. Remove supernatant. (If necessary – a red blood cell lysis step may be performed.)
10. Resuspend pellet with dPBS + 2% FBS and count using the Nexcelom Vision cellometer after AOPI staining.
11. Spin cells at 300xg for 10 minutes at 20°C.
  - a. Acceleration = maximum
  - b. Deceleration = maximum
12. Remove supernatant.
13. Aseptically resuspend in appropriate volume of 90% FBS/10% DMSO to achieve desired cell density per mL.  
\*\*Depending on the starting total cell count of the sample, vials will be aliquoted 5-10 million viable cells per mL pre-freeze. \*\*
14. Aseptically pipette 1.0mL of BMMCs into labeled 1.0mL Matrix cryovials.
15. Place cryovials into an insulated container and place at -80°C overnight for a controlled freeze down.
16. Move cryovials to a liquid nitrogen storage tank for storage until shipment.