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Human Cord Blood Mononuclear Cells – MNC

Catalog# UBP-006 2x10^7 cells

Product Description

Human Cord Blood Mononuclear Cells (MNC) are isolated from whole umbilical cord blood. The cord blood was centrifuged to separate MNC from platelet-rich-plasma (PRP) and red blood cells (RBC). Each container or compartment has a volume of 5-6 ml with ≥20 million (2 x 10^7) mononuclear cells, <2% hematocrit (% red blood cells).

Sample Collection

Families donate the cord blood after signing Institutional Review Board (IRB) approved consent forms that give permission for the cells to be used for research or therapy.

Donor Status: Normal and healthy donors, based on maternal and donor blood tests
Cryopreservant: MNCs are frozen in 10-11% dimethylsulfoxide (DMSO).
Anticoagulant: Citrate Phosphate Dextrose Adenine (CPDA-1).

Direction of Use:

Unpacking instructions:

1. Check all containers for leakage or breakage. (if either is present, do not use and notify MonoTx).

2. Remove the frozen cells from the dry ice packaging. Immediately store the cells at a temperature below -150°C, preferably in liquid nitrogen vapor, until ready for use.

After thawing, due to toxicity of 10% DMSO to cells at room temperatures, the thawed MNC must be kept cold at 2-4˚C and rapidly diluted so that DMSO concentrations are reduced to <1% by adding 9 ml of thawing solution containing phosphate buffered saline with 10% dextran and 2.5% human serum albumin for each ml of MNC. Alternatively, MNC can be sequentially washed until DMSO is <1% concentration.

Storage: Store at -150°C or colder.

Biosafety Level: 2*

Ver. 1.0
Date: 03 Feb 2021

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*Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the current publication of the Biosafety in Microbiological and Biomedical Laboratories from the U.S. Department of Health and Human Services Centers for Disease Control and Prevention and National Institutes for Health.

Handling Protocol:

1. Place the container or compartment containing the aliquot of frozen MNC in a sealable sterile plastic bag. Immerse the plastic bag and aliquot in a 4°C water bath. Remove before it is completely thawed.

2. Pre-fill a sterile 30mL syringe with 20mL thawing medium with an 18G (or larger) needle (see below).

3. Remove the MNC container or compartment from the plastic bag, wipe the outside with 90% isopropanol, and transfer to a biosafety cabinet.

4. Open the container or compartment by cutting the spike port end. Insert the syringe needle of the pre-filled 30mL syringe into the spike port. Draw the MNC into the syringe with thawing solution and mix.

5. Transfer the thawing medium – MNC mixture to a pre-cooled sterile 50mL centrifuge tube.

6. Rinse the inside of the container or compartment with 25mL thawing medium by syringe and transfer into the centrifuge tube. Mix well and take a sample for counting and viability assessment.

7. Centrifuge at 600xg for 25 min at 4 °C with slow deceleration, remove the supernatant, resuspend the pellet with 5mL media of choice. Keep on ice until use

Thawing Medium Composition:

- 10% Dextran 40 solution in 0.9% NaCl solution 25m
- 25% Human Serum Albumin solution in 0.9% NaCl solution 5mL
- PBS, pH 7.2 20mL

Precautions:

Donor Screening: Hepatitis B, Hepatitis C and HIV.

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This product contains human tissue or other biological material and MUST be handled at Biosafety Level 2 or higher. All biological products should be treated as potentially infectious or contaminated material, even if infectious disease screening reports are negative. Follow universal precautions and wear appropriate personal protective equipment.

Disclaimers

This product is intended for laboratory research purposes only. It is not intended for use in humans.

While MonoTx uses reasonable efforts to include accurate and up-to-date information on this product sheet, MonoTx makes no warranties or representations as to its accuracy.

This product is sent with the condition that you are responsible for its safe storage, handling, and use. MonoTx is not liable for any damages or injuries arising from receipt and/or use of this product.

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