



## 1104 Human Enriched Complete Medium

Methylcellulose-Based Medium for CFC Assays

Catalog #	Unit Size (cells/vial)
1104	100 mL bottle

### Product Description

ColonyGEL™ 1104 is a methylcellulose-based medium containing human recombinant cytokines for the growth and evaluation of myeloid, erythroid and mixed lineage progenitors from human bone marrow (BM), cord blood (CB), mobilized peripheral blood (MPB) and peripheral blood (PB) in the colony forming cell (CFC) assay.

The CFC assay is an *in vitro* quantitative assay used to determine the frequency of hematopoietic progenitors based on their ability to form unique, morphologically distinctive colonies in semi-solid media.

Human **myeloid progenitors** that can be identified and enumerated using ColonyGEL™ 1104 include:

- CFU-GM (colony forming unit – granulocyte / macrophage)
- CFU-G (colony forming unit – granulocyte)
- CFU-M (colony forming unit – macrophage)

Human **erythroid progenitors** that can be identified and enumerated using ColonyGEL™ 1104 include:

- BFU-E (burst forming unit – erythroid)
- CFU-E (colony forming unit – erythroid)

Human **mixed lineage progenitors** that can be identified and enumerated using ColonyGEL™ 1104 include:

- CFU-GEMM (colony forming unit – granulocyte/erythroid/macrophage/megakaryocyte)

### Stability and Storage

Store the entire bottle of media or aliquots at -20°C. The product is stable at -20°C for up to 2 years from the date of manufacture. Storage at 4-8°C is NOT recommended.

If the product is received partially thawed, immediately place the product at -20°C or allow the product to thaw for aliquoting into working volumes (please refer to the back of this sheet for proper procedure).

### Product Formulation

Methylcellulose in IMDM  
Pre-screened Fetal Bovine Serum  
Pre-screened Bovine Serum Albumin  
L-Glutamine  
2-Mercaptoethanol  
Recombinant Human SCF, GM-CSF, G-CSF, IL-3, IL-6, and EPO

**Limited Product Warranty**

ReachBio LLC warrants only that these products will perform according to established product specifications and makes no warranty as to their utility or fitness for use for any application whatsoever. Seller provides the products to the purchaser with the understanding that the purchaser is solely responsible for determining if the product is suitable for his or her intended application. Seller shall not be liable for any damages or injury to persons or property, arising from the purchase or use of the product, or for any results or failure to obtain results arising out of the use of the products. In addition, Seller shall not be liable for the product after the product expiration date or if the product has been misused, damaged or has otherwise become unusable due to improper storage or handling by purchaser.

This warranty is exclusive and limits Seller's liability to the replacement of the product or, at Seller's option, the full credit of the original purchase price.

NO OTHER WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE PROVIDED BY SELLER, AND SELLER SHALL HAVE NO LIABILITY FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES ARISING OUT OF THE USE, THE RESULTS OF USE, OR THE INABILITY TO USE ANY PRODUCT.

**THIS PRODUCT IS FOR IN VITRO RESEARCH USE ONLY**

*This product is NOT intended or approved for human or veterinary use, or for use in clinical diagnostic or therapeutic procedures.*

<b>Table 1. Recommended Plating Concentrations<sup>1</sup></b>		
Cell Source**	Cells per 35 mm Dish	Cell Concentration (cells / mL)
BM (NH <sub>4</sub> Cl Treated) MPB	2 x 10 <sup>4</sup>	2 x 10 <sup>5</sup>
BM (Light Density)	1 x 10 <sup>4</sup>	1 x 10 <sup>5</sup>
BM (CD34 <sup>+</sup> Enriched) CB (CD34 <sup>+</sup> Enriched)	500	5 x 10 <sup>3</sup>
CB (Fresh Unprocessed)	3 x 10 <sup>4</sup>	3 x 10 <sup>5</sup>
CB (Frozen Unprocessed)	5 x 10 <sup>4</sup>	5 x 10 <sup>5</sup>
PB (Light Density)	1 x 10 <sup>5</sup>	1 x 10 <sup>6</sup>

\*\*Note: Pre-qualified BM, CB and CD34+ cells with known CFC content are available from ReachBio, please inquire.

**Procedure for Use – Preparation of Aliquots**

Prior to use, and for frozen storage, it is strongly recommended that the contents of the bottle of ColonyGEL™ medium be aliquoted (using sterile technique!) into separate tubes of sufficient volume for triplicate or duplicate assays, as follows:

1. Thaw the bottle of ColonyGEL™ medium overnight at 4°C or at room temperature.
2. Once thawed, shake the bottle vigorously for 30 seconds to ensure equal distribution of the contents and allow the medium to sit for a minimum of 10 minutes (max. 20 minutes) to allow the bubbles to dissipate.
3. For triplicate cultures\*, aliquot 4.0 mL of medium by positive displacement into individual tubes. To do this, insert a 10 mL syringe attached to a 16 gauge blunt end needle (Catalog #3011) into the bottle and

draw up approximately 1.0 mL of medium. Dispense this back into the original bottle to eliminate air bubbles from the syringe. Repeat if necessary.

4. Draw up 9.0 mL of medium into the syringe and dispense 4.0 mL into an appropriately labeled tube (there is now 5mL of medium remaining in the syringe or the medium is now at the 5.0 mL mark). Dispense another 4.0 mL into a second tube (the medium is now at the 1.0 mL mark).
5. Using the same syringe, draw up another 8.0 mL of medium (there should still be 1.0 mL of medium in the syringe) and dispense 4.0 mL aliquots into separate tubes as indicated in Step 4. Repeat the procedure until the entire 100 mL of medium has been aliquoted.
6. Store each 4.0 mL aliquot of medium at -20°C.

\*Note: if only duplicate cultures are required, eliminate the air bubbles from the syringe as described in Step 3, then draw up the medium to the 10.0 mL mark. Dispense 3.0 mL into the first tube (the medium is now at the 7.0 mL mark), dispense 3.0 mL into a second tube (the medium is now at the 4.0 mL mark) and dispense 3.0 mL medium into a third tube (the medium is now at the 1.0 mL mark). Draw up another 9.0 mL of medium and continue to dispense 3.0 mL aliquots into separate tubes. Repeat this procedure until the entire 100 mL of medium has been aliquoted.

### **Plating Cells in ColonyGEL™ Medium**

1. Thaw the appropriate number of tubes of medium overnight at 4°C or at room temperature.
2. Prepare the cells required for the assay to a solution 10 fold higher than the desired concentration in the assay (Table 1).
3. To a 4.0 mL tube (triplicate assays) of ColonyGEL™ medium, add 400 uL of the cells; to a 3.0 mL tube (duplicate assays) of ColonyGEL™ medium add 300 uL of cells. Vortex the tubes containing the medium and cells (mixture) for a minimum of 5 seconds and let stand for 2 minutes to allow bubbles to rise to the top before plating.
4. Using a 3 cc syringe and a 16 gauge blunt end needle (Catalog #3011), draw up a small amount of the mixture (methylcellulose containing cells) and dispense back into the original tube. This serves to remove the air bubbles within the syringe. Plate 1.1 mL of medium containing cells into three (for triplicate assays) or two (for duplicate assays) 35 mm dishes by positive displacement as described in Step 5 below.
5. Draw up 2.6 mL of the mixture and dispense 1.1 mL into one of three (or two) labeled 35 mm dishes. Dispense another 1.1 mL into a second 35 mm dish (the mixture is now at the 0.4 mL mark of the syringe).
6. If performing triplicate assays, draw up another 1.1 mL of the mixture (1.5 mL mark of the syringe) and dispense 1.1 mL into the final 35 mm dish (this step is not required for duplicate assays).
7. Swirl the semi-solid mixture in the 35 mm dishes until the bottom of the dishes have been completely covered. Place the 35 mm dishes containing the medium and cells into a 100 mm or 245 mm dish that has a cover.
8. Add two additional 35 mm dishes, each containing 2 mL of water (without lids), into the same 100 mm or 245 mm dish and cover. The two 35 mm dishes containing water serve to ensure a good humidity for the duration of the cultures.
9. Place the cultures in a water jacketed incubator at 37 +/- 0.5°C, 5 +/- 0.5% CO<sub>2</sub> for 14-16 days.

1. Reference: Periera et. al. (2007). Hematopoietic Colony-Forming Cell Assays. In Vemuri (Ed.), Methods in Molecular Biology, vol. 407: Stem Cell Assays (pp. 177-208). New Jersey: Humana Press.