

# Hematopoietic Progenitor Colony Forming Unit Assays

## Why Participate in Our Programs?

STEMCELL Technologies is committed to standardizing hematopoietic colony assays for the research and clinical therapy communities. The colony forming unit (CFU) assay is the benchmark functional assay to assess the proliferative ability of hematopoietic cells.<sup>1-4</sup> Universal implementation of the CFU assay is hindered by poor inter-laboratory reproducibility<sup>5</sup> for both sample preparation<sup>6</sup> and differences in colony identification and enumeration.<sup>7</sup> STEMCELL Technologies encourages laboratories to participate in our proficiency testing programs to reduce user variability. Participation is available worldwide and timing of the assay initiation is flexible.

- Compare your progenitor counts to other centers worldwide
- Receive a comprehensive personalized report
- Identify areas that may benefit from continued education and training

## Program Design

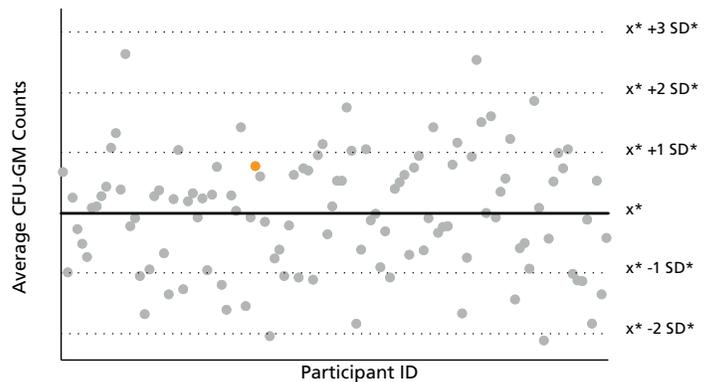
Participants are provided with a cell sample, MethoCult™ methylcellulose based medium, additional reagents and supplies, and detailed instructions required for performing the colony assay. Participants are then assessed on their proficiency in the following aspects:

1. Sample preparation (cell thawing, counting, and dilution)
2. Plating and set-up of colony assay
3. Colony enumeration (CFU-E, BFU-E, CFU-GM, & CFU-GEMM)
4. Colony identification (photos of CFU colonies)

STEMCELL Technologies compiles and statistically analyzes all valid data received by the submission deadline. Participants receive a comprehensive report with graphs and tables comparing their individual data points to the group mean. According to International Standard 13528, warning signals are assigned to results between  $\pm 2$  SD to  $\pm 3$  SD from the mean, and action signals are assigned to results outside of  $\pm 3$  SD from the mean. Participant identity is protected via anonymous ID numbers.

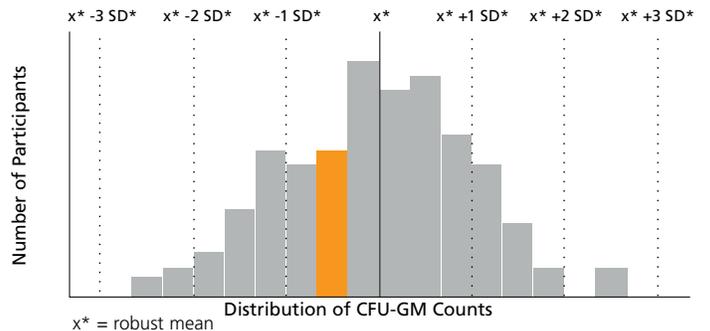
## Education and Improvement Programs

Proficiency testing programs aim to identify specific areas that might benefit from continuing education and training. Scientific Specialists from STEMCELL Technologies are dedicated to supporting corrective actions and root cause analysis that result from our proficiency testing programs. Personalized z-score reports monitor the effectiveness of corrective actions over successive programs. On-site custom training courses are recognized at identifying areas for improvement and standardization.



**Figure 1. Representative Dot Plot As Presented in the Report for a Proficiency Testing Program**

This data set shows the average CFU-GM counts reported by the cohort; the orange dot represents a specific participant's value.



**Figure 2. Representative Histogram Showing the Distribution of the Reported Average CFU-GM Counts Within a Proficiency Testing Program**

Each bar represents the number of participants that reported a value within a specific range. The orange bar corresponds with the orange dot in Figure 1.



### VIDEO

Global Proficiency Testing Program -  
Procedure for Setting Up the CFC Assay  
[www.stemcell.com/proficiencyvideo](http://www.stemcell.com/proficiencyvideo)

## Registration Form for Countries Serviced by a Distributor

Proficiency testing programs are offered to assess your ability to perform colony assays for either frozen human bone marrow or cord blood samples. In each program, participants are provided with identical lots of cells, MethoCult™ H4034 Optimum, and all reagents and supplies required for the CFU assay. STEMCELL Technologies collects data on cell preparation and colony enumeration and provides a comprehensive report to each participant.

2024 Proficiency Testing Programs	Season	Session	Participant*	Catalog #	Registration Deadline	Testing Kit Shipment Week**
Frozen Bone Marrow	Spring	BM51	1st	100-0926	February 2, 2024	March 12, 2024
			2nd+	100-0927		
	Fall	BM52	1st	100-0928	August 16, 2024	September 23, 2024
			2nd+	100-0929		
Frozen Cord Blood	Spring	CBZ27	1st	100-0950	February 23, 2024	April 15, 2024
			2nd+	100-0951		
	Fall	CBZ28	1st	100-0952	September 6, 2024	October 21, 2024
			2nd+	100-0953		

\*1st: Price for first participant. 2nd: Price for each additional participant. \*\*Shipping dates may vary for locations outside of North America.

An e-mail address is required for each participant. All correspondence with participants, including cell plating concentration and final reports, is done via e-mail.

Participant First and Last Name	Participant Email Address	Bone Marrow		Cord Blood	
		BM51	BM52	CBZ27	CBZ28
		Apr 2024	Oct 2024	May 2024	Nov 2024
1.					
2.					
3.					
4.					
5.					
6.					

## Customer Information

Institution: \_\_\_\_\_

Principal Investigator: \_\_\_\_\_

Email: \_\_\_\_\_

Shipping Address: \_\_\_\_\_

Check if you would like communications in French

## Instructions

To register, please submit your completed registration form to your regional distributor. The following link provides our distributor's contact information as a drop-down menu listed by country:

<https://www.stemcell.com/contact-us>.

Confirmation of registration will be e-mailed after the registration deadline.

## References

- Gordon MY. Blood Rev 7: 190-197, 1993
- Page KM, et al. Biol Blood Marrow Transplant 17: 1362-1374, 2011
- Hogge DE, et al. Bone Marrow Transpl 25: 589-598, 2000
- Sutherland R, et al. Stem Cells 11 (Suppl 3): 50, 1993
- Pamphilon D, et al. Cytotherapy 15: 255-262, 2013
- Burger SR, et al. Transfusion 39: 451-456, 1999
- Lumley MA, et al. Br J Haematol 97: 481-484, 1997

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