



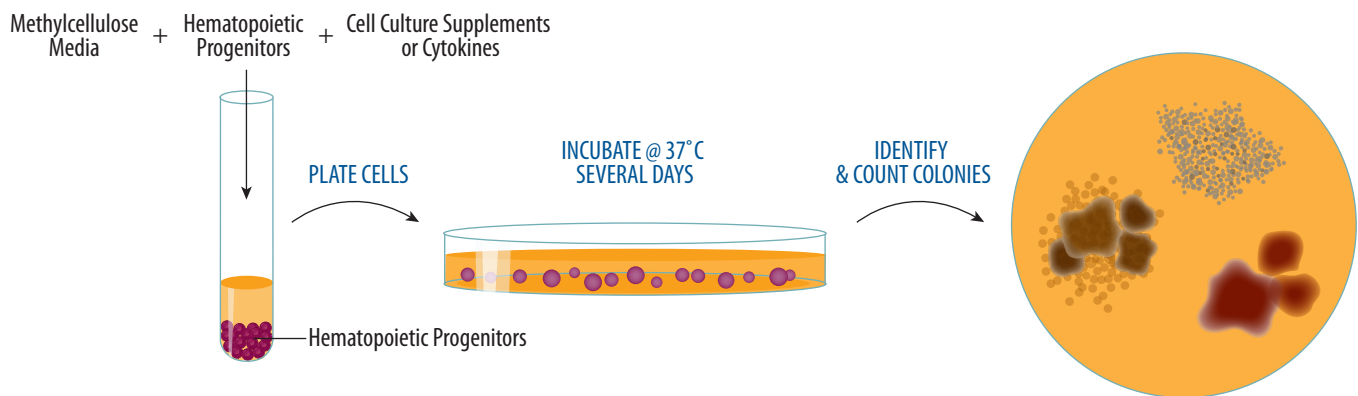
Mouse & Human Methylcellulose Media

Specially Formulated Media for Functionally Assessing Hematopoietic Progenitor Cells

R&D Systems Mouse and Human Methylcellulose Media are optimized for use in colony-forming cell (CFC) assays, which allow for the enumeration and morphology-based characterization of clonogenic hematopoietic progenitors *in vitro*. The CFC assay is the standard *in vitro* assay for quantifying clonogenic progenitors present in human, murine, and primate bone marrow, umbilical cord blood, peripheral blood, and G-CSF mobilized peripheral blood. CFC assays rely on the ability of hematopoietic progenitors to proliferate and differentiate into colonies in a semi-solid medium (methylcellulose) in response to cytokine stimulation. Since methylcellulose has replaced agar as the immobilizing agent of choice for this assay, the CFC assay, is also known as the methylcellulose assay. Hematopoietic colony-forming assays may be used to evaluate potential toxic effects of new compounds and to determine maximum tolerated doses (MTD) and inhibitory concentration values (IC₅₀).

Please visit our website at www.RnDSystems.com/go/Methylcellulose for an up-to-date product listing and protocols for human and mouse CFC assays using Methylcellulose-based Media.

Assay Principle



Mouse Methylcellulose Products

PRODUCT NAME	CATALOG #	COLONIES SUPPORTED BY MOUSE METHYLCELLULOSE PRODUCTS					
		CFU-E	BFU-E	CFU-G	CFU-M	CFU-GM	CFU-GEMM
Methylcellulose Stock Solution Solution that consists of 2.8% methylcellulose in Iscove's MDM and can be used for both human and mouse HSC research.	HSC001*	N/A	N/A	N/A	N/A	N/A	N/A
Mouse Methylcellulose Base Media Media that contains all of the basic components required to perform mouse CFC assays, except the cytokines, allowing researchers to tailor the media to their specific research needs.	HSC006*	N/A	N/A	N/A	N/A	N/A	N/A
Mouse Methylcellulose Complete Media Specially formulated media supplemented with recombinant mouse IL-3, IL-6, SCF, and recombinant human Erythropoietin (Epo). Suitable for routine assays of mouse clonogenic hematopoietic progenitors from mouse bone marrow, peripheral blood, spleen, and fetal liver.	HSC007	+	+	+	+	+	+
Mouse Methylcellulose Complete Media without Epo Specially formulated media supplemented with recombinant mouse IL-3, IL-6, and SCF. Suitable for routine assays of mouse clonogenic hematopoietic progenitors from mouse bone marrow, peripheral blood, spleen, and fetal liver.	HSC008	-	-	+	+	+	-



Cultured Mouse CFU-GEMM Colony. Mouse bone marrow cells were cultured in Mouse Methylcellulose Complete Media (Catalog # HSC007). Photo shows a CFU-GEMM colony composed of reddish-colored cells (erythroid) and colorless cells (granulocytes, macrophages, and megakaryocytes).

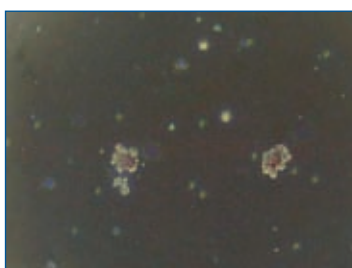
*HSC001 and HSC006 do not contain any cytokines and will not support colony growth unless conditioned media, cytokines, or other culture supplements are added to them.

Human Methylcellulose Products

PRODUCT NAME	CATALOG #	COLONIES SUPPORTED BY HUMAN METHYLCELLULOSE PRODUCTS					
		CFU-E	BFU-E	CFU-G	CFU-M	CFU-GM	CFU-GEMM
Methylcellulose Stock Solution Solution that consists of 2.8% methylcellulose in Iscove's MDM and can be used for both human and mouse HSC research.	HSC001*	N/A	N/A	N/A	N/A	N/A	N/A
Human Methylcellulose Base Media Media that contains all of the basic components required to perform human CFC assays, except the cytokines, allowing researchers to customize the media to their specific research needs.	HSC002*	N/A	N/A	N/A	N/A	N/A	N/A
Human Methylcellulose Complete Media Specially formulated media supplemented with recombinant human GM-CSF, IL-3, SCF, and Erythropoietin (Epo). Suitable for routine assays of human clonogenic hematopoietic progenitors from human bone marrow, peripheral blood, cord blood, leukopheresis products, and purified CD34 ⁺ cells.	HSC003	+	+	+	+	+	+
Human Methylcellulose Complete Media without Epo Specially formulated media supplemented with recombinant human G-CSF, IL-3, and SCF. This media is also suitable for routine assays of human clonogenic hematopoietic progenitors similar to Catalog # HSC003.	HSC004	-	-	+	+	+	-
Human Methylcellulose Enriched Media Enriched media supplemented with recombinant human G-CSF, GM-CSF, IL-3, IL-6, SCF, and Epo. This media is optimized for CFC assays using purified CD34 ⁺ cells at the end of the long-term culture-initiating cell (LIC-IC) assay.	HSC005	+	+	+	+	+	+

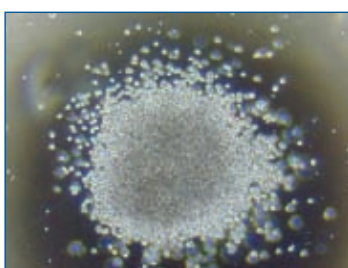
*HSC001 and HSC002 do not contain any cytokines and will not support colony growth unless conditioned media, cytokines, or other culture supplements are added to them.

CFU-E (Colony forming unit-erythroid)



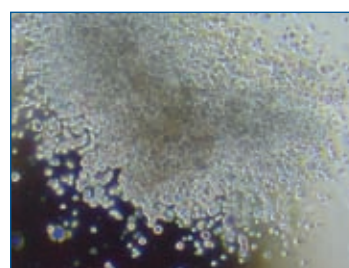
Clonogenic progenitors that produce only one or two clusters. Each cluster contains from 8 to approximately 100 hemoglobinized erythroblasts. Erythroblasts reach maturity by 10 to 12 days and can be distinguished by their reddish color.

CFU-G (Colony forming unit-granulocyte)



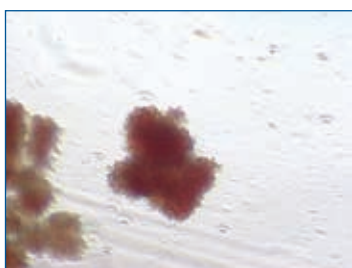
Clonogenic progenitors of granulocytes that give rise to a homogeneous population of eosinophils, basophils, or neutrophils. The developed CFU-G colony is colorless, unlike the reddish color displayed by CFU-E and BFU-E colonies.

CFU-GM (Colony forming unit-granulocyte, macrophage)



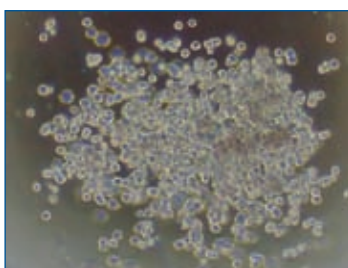
Progenitors that give rise to colonies containing a heterogeneous population of macrophages and granulocytes. The morphology of CFU-GM colonies is similar to the CFU-M and CFU-G descriptions.

BFU-E (Burst forming unit-erythroid)



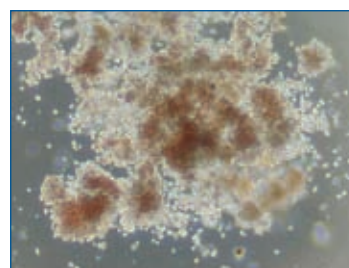
Primitive erythroid progenitors that have high proliferative capacity. The size of the BFU-E colony is small (3 to 8 clusters), intermediate (9 to 16 clusters), or large (more than 16 clusters) according to the number of clusters present. A single large cluster is occasionally observed.

CFU-M (Colony forming unit-macrophage)



Clonogenic progenitors of macrophages that give rise to a homogeneous population of macrophages. The developed CFU-M colony is colorless. Macrophages are large cells in comparison to granulocytes and erythrocytes and they continue to grow in size after day 14.

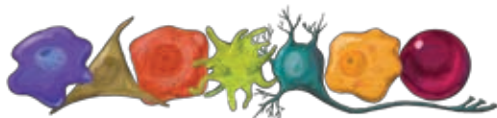
CFU-GEMM (Colony forming unit-granulocyte, erythrocyte, macrophage, megakaryocyte)



Multi-lineage progenitors that give rise to erythroid, granulocyte, macrophage, and megakaryocyte lineages. CFU-GEMM colonies can be identified by red cells (erythroid) mixed with colorless cells (granulocytes, macrophages, and megakaryocytes) in a single colony.

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