

PRODUCT DESCRIPTION

StemSpan™ Serum-Free Expansion Medium (SFEM) has been developed for the *in vitro* culture and expansion of human hematopoietic cells.¹⁻⁵ This medium contains pre-tested bovine serum albumin, insulin and transferrin, and supplements in Iscove's MDM. Recombinant hematopoietic growth factors, required for the optimal growth and expansion of hematopoietic cells, have not been added to StemSpan™ SFEM. This allows users the flexibility to prepare medium that meets their requirements.

In addition to the culture and expansion of **human** hematopoietic cells, StemSpan™ SFEM has been used for the culture and expansion of hematopoietic stem and progenitor cells from other species, including **mouse**,^{6,7} **non-human primate**⁸ and **dog**.⁹ StemSpan™ SFEM has also been used for the generation, culture and assay of human and mouse **dendritic cells**,¹⁰ and for the culture of various other **hematopoietic and non-hematopoietic cell types**.^{11,12} In most applications, addition of specific hematopoietic growth factors, cytokines and/or other compounds are required for optimal growth.

COMPONENTS

StemSpan™ SFEM contains:

- Bovine Serum Albumin
- Recombinant Human Insulin
- Human Transferrin (Iron-Saturated)
- 2-Mercaptoethanol
- Iscove's MDM
- Supplements

This product contains components derived from human plasma. Venous blood from each donor has been tested for hepatitis B surface antigen (HBsAg) and HIV-1 antibodies and/or HIV-1 antigen. However, this product should be considered potentially infectious and treated in accordance with universal handling precautions.

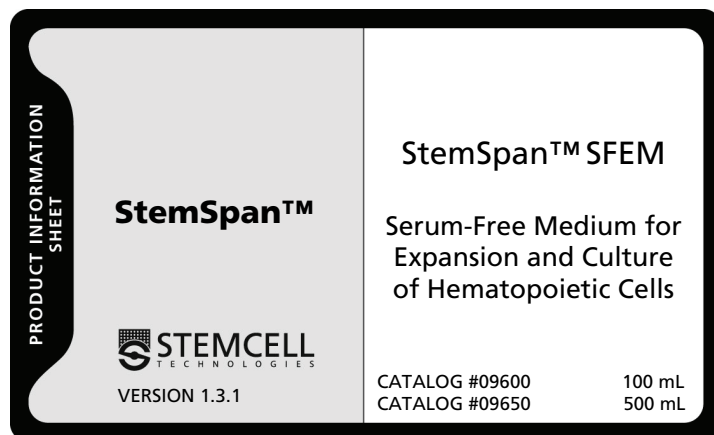
StemSpan™ SFEM media are aseptically manufactured using tightly controlled processes and extensively prescreened components.

Each batch of StemSpan™ SFEM is sterility tested and Quality Control performance tested. A Certificate of Analysis is available upon request.

STABILITY AND STORAGE

Product stable at -20°C (-25° to -15°C) until expiry date indicated on label. Stable for one month if stored at 2 - 8°C.

It is recommended that StemSpan™ SFEM be thawed under refrigeration (2 - 8°C) or at room temperature (15 - 25°C), mixed well and aliquoted into smaller volumes. These aliquots should be stored at -20°C (-25° to -15°C) until use.



DIRECTIONS FOR USE

StemSpan™ SFEM is a serum-free medium formulated for the *in vitro* culture of hematopoietic progenitor cells. It does not contain hematopoietic growth factors or other cytokines. Addition of cytokines or other growth factors is required for the optimal growth of hematopoietic cells.

1. Thaw StemSpan™ SFEM and mix well. Working aliquots can be dispensed into sterile tubes or bottles, capped tightly and stored at -20°C (-25° to -15°C) until use.
2. Aseptically add desired cytokines, growth factors and other components to StemSpan™ SFEM and mix well. Add cells, mix well, dispense into sterile cultureware and incubate. Added components and cells in sterile cell culture medium (e.g. Iscove's MDM or DMEM) should not exceed ~10% of total volume.

STEMCELL Technologies, Inc recommends the use of human LDL (Catalog #02698) as a culture supplement. It has been prescreened for the culture, expansion and colony assay of human hematopoietic and non-hematopoietic cells in serum-free culture media. It promotes the proliferation and survival of human hematopoietic and other progenitor cells in culture, resulting in increased cell output in expansion cultures and increased colony numbers and/or colony size in colony assays.

NOTES

Selection of an optimal cytokine combination is dependent upon the source and type of cells and the experimental objectives of the researcher. StemSpan™ Cytokine Cocktails (CC) are suitable for use with StemSpan™ SFEM.

StemSpan™ Cytokine Cocktail	Recommended For	Contains
StemSpan™ CC100 Catalog #02690	Culture and expansion of human hematopoietic cells including CD34 ⁺ cells, stem cells and progenitor cells	<ul style="list-style-type: none"> ● rh Flt-3 ligand ● rh SCF ● rh IL-3 ● rh IL-6
StemSpan™ CC110 Catalog #02697	Culture and expansion of human hematopoietic cells including CD34 ⁺ cells, stem cells and progenitor cells	<ul style="list-style-type: none"> ● rh Flt-3 ligand ● rh SCF ● rh TPO
StemSpan™ CC220 Catalog #02696	Culture and expansion of human megakaryocyte progenitors and megakaryocytes	<ul style="list-style-type: none"> ● rh SCF ● rh TPO ● rh IL-6 ● rh IL-9

SCF = Stem Cell Factor; TPO = Thrombopoietin; rh = recombinant human; IL = interleukin

SELECTED PUBLICATIONS

1. Lansdorp PM, Dragowska W: Long-term erythropoiesis from constant numbers of CD34⁺ cells in serum-free cultures initiated with highly purified progenitor cells from human bone marrow. *J Exp Med* 175: 1501-1509, 1992
2. Petzer AL, Zandstra PW, Piret JM, Eaves CJ: Differential cytokine effects on primitive (CD34⁺CD38⁻) human hematopoietic cells: novel responses to Flt3-ligand and thrombopoietin. *J Exp Med* 183: 2551-2558, 1996
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5. Audet J, Miller CL, Rose-John S, Eaves CJ, Piret PW: *In vitro* expansion of *in vivo* repopulating stem cells from adult bone marrow using HyperIL-6, an engineered hybrid cytokine of human interleukin-6 and its soluble receptor. *Exp Hem* 26: 700 (abs) 1998
6. Miller CL, Eaves CJ: Expansion *in vitro* of adult murine hematopoietic stem cells with transplantable lympho-myeloid reconstituting ability. *Proc Natl Acad Sci USA* 94: 13648-13653, 1997
7. Zhang CC, Lodish HF: Murine hematopoietic stem cells change their surface phenotype during *ex vivo* expansion. *Blood* 105: 4314-4320, 2005
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12. Baksh D, Davies JE, Zandstra PW: Soluble factor cross-talk between human bone marrow-derived hematopoietic and mesenchymal cells enhances *in vitro* CFU-F and CFU-O growth and reveals heterogeneity in the mesenchymal progenitor cell compartment. *Blood* 106: 3012-3019, 2005