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### 1. Description

This product is for research use only.

<b>Components</b>	<b>500 mL StemMACS MSC Expansion Medium XF, human</b> <b>7 mL StemMACS MSC Expansion Medium Supplement XF, human</b>
<b>Specifications</b>	Osmolality: 270–320 mOsmol/kg pH: 7.0–7.6
<b>Quality control</b>	Functionality assay: Satisfactory expansion of MSCs derived from human bone marrow.
<b>Storage</b>	Store StemMACS MSC Expansion Medium XF, human protected from light at 2–8 °C. Do not freeze. The expiration date is indicated on the vial label. Upon arrival store StemMACS MSC Expansion Medium Supplement XF, human at –20 °C. Aliquots of the supplemented complete medium should be stored at –20 °C. Avoid repeated freeze-thaw cycles. The expiration date is indicated on the vial label.

#### 1.1 Background information

The StemMACS MSC Expansion Medium Kit XF, human is xeno-free. It is an optimized and standardized complete medium for the reproducible and reliable generation and expansion of mesenchymal stem cells (MSCs) from human bone marrow (BM) samples or other tissue sources. As MSCs appear at relatively low frequency in human BM samples and other tissues, their *in vitro* propagation is often necessary in order to obtain sufficient cell numbers for further experiments, such as *in vivo* transplantation studies in animals or *in vitro* differentiation or functional characterization. The formulation of StemMACS MSC Expansion Medium Kit XF was designed to efficiently support the expansion of MSCs *in vitro* while maintaining their differentiation potential. The medium formulation is xeno- and serum-free and is manufactured under strictly controlled conditions using ingredients of the highest quality. StemMACS Expansion Medium Kit XF offers consistent lot-to-lot performance and optimal conditions for the cultivation of MSCs.

### 1.2 Applications

- Expansion of MSCs from human bone marrow or other tissue sources.

### 2. Protocol

Before StemMACS MSC Expansion Medium Kit XF can be used in cell culture, the two kit components need to be mixed according to the following protocol to obtain the complete medium.

- Thaw StemMACS MSC Expansion Medium Supplement XF at 37 °C prior to use. Thawed material must be used immediately or aliquoted to the preferred sample volume, for example, 1.4 mL. Store aliquots at –20 °C. Avoid additional freeze-thaw cycles.
- To obtain the complete medium add 1.4 mL StemMACS MSC Expansion Medium Supplement XF to 100 mL StemMACS MSC Expansion Medium XF. The medium is ready-to-use now. Use the complete medium within 1 week when stored at 2–8 °C. For longer storage, prepare aliquots and store at –20 °C.

A detailed MSC cell culture protocol is available at [www.miltenyibiotec.com/applications](http://www.miltenyibiotec.com/applications).

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