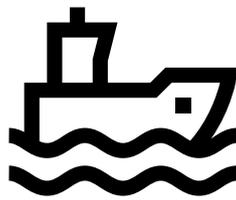
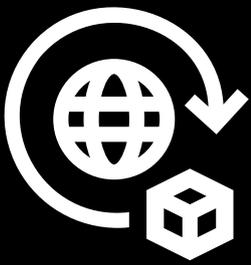


Shipment Conditions

Shipment of CellGenix® GMP Media



Technical Note

The quality, safety and efficacy of cell therapies are significantly influenced by the raw (ancillary) materials used in manufacturing. We prioritize safety and reliability to provide the highest quality products for clinical *ex vivo* cell processing.



Executive Summary

As we strive to provide our customers with the highest quality products suitable for clinical *ex vivo* processing of cells, we care greatly about safety and product reliability.

We are able to guarantee our level of quality by performing extensive stability studies for all our media products. To ensure product stability of our CellGenix® GMP cell culture media (DC, SCGM and TCM) during shipment, dedicated stress tests at elevated temperatures were performed additionally to long-term stability studies at $+5 \pm 3$ °C. Exemplary test results are shown in figures a, b and c below for our CellGenix® GMP SCGM medium.

Temperature Control Measures

We implemented an advanced shipment monitoring service to ensure the safe and timely transit of our CellGenix® GMP media. Our shipment service partners offer contractual services that provide:

- Cold storage during delays on the ground
- Advanced shipment monitoring, including daily status update and cold storage notification
- Notification of shipments at risk of delivery delay
- Boarding priority (as available)

We can therefore ensure that temperatures during shipment should not exceed the maximum exposition temperatures and times included in our stress tests.

Test Conditions

Stability of the media after incubation at elevated temperatures was determined by analyzing color, appearance, pH, osmolality as well as functionality of the medium. Functionality was measured with the cell-based assays of the respective medium.

The following temperature conditions were included in the stress tests of CellGenix® GMP cell culture media:

Exposition time	Temperature	Notes
72 h	+ 30 °C*	starting temperature of medium bottle at + 4 °C
48 h	+ 30 °C*	starting temperature of medium bottle at + 4 °C
24 h	+ 30 °C*	starting temperature of medium bottle at + 4 °C
8 h	+ 40 °C*	starting temperature of medium bottle at + 20 °C
1 month	+ 20 °C	controlled room temperature

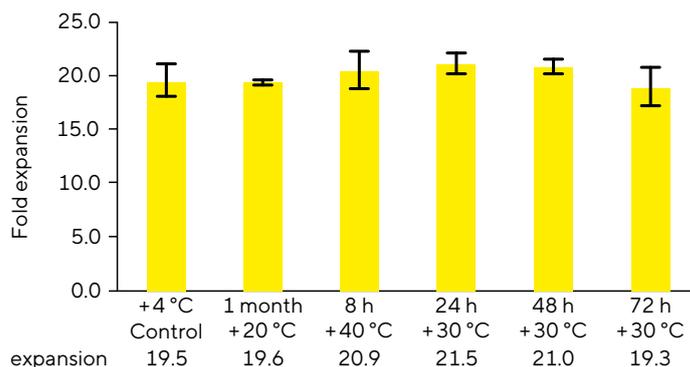
*For CellGenix® GMP TCM, temperature conditions of + 40 °C were used instead of + 30 °C and respectively + 50 °C instead of + 40 °C.

Storage temperatures below 0 °C are considered uncritical and have therefore not been assessed.

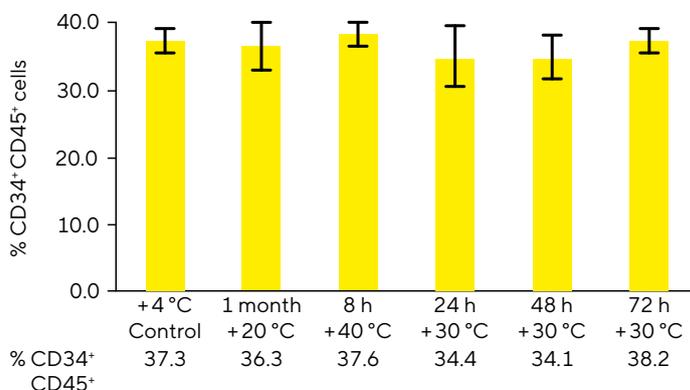
Figure 1: Temperature stress tests performed for CellGenix® GMP SCGM Medium (#0840C) to demonstrate that shipment at ambient temperatures does not compromise the product quality. CellGenix® GMP SCGM was stored under the different conditions listed on page 1. Tests were carried out with PBSC from 3 different donors and mean values were calculated. CD34⁺ cells were cultivated in CellGenix® GMP SCGM with CellGenix® GMP rh IL-3 and CellGenix® GMP rh SCF for 7 days.

- a) Cell expansion was determined by counting cells on day 7 based on the number of cells seeded.
 b) Ratio of the remaining CD34⁺ CD45⁺ cells after 7 days of culturing PBSC was determined by flow cytometry.
 c) Cell viability was measured by flow cytometry using 7AAD (7-Aminoactino-mycin).

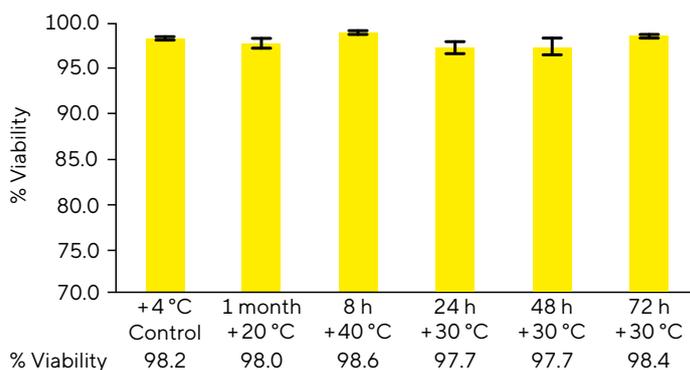
(A) CellGenix® GMP SCGM Stress Test - Cell Expansion



(B) CellGenix® GMP SCGM Stress Test - CD34⁺ CD45⁺ cells



(C) CellGenix® GMP SCGM Stress Test - % Viability



Conclusion

The product quality of our media is not compromised by shipment at ambient temperatures. The results of the associated stability studies confirm that our standard shipping conditions do not influence the product quality of our CellGenix® GMP Media. Even after shipment at elevated temperatures our media retain a consistent high product quality.

Regulatory Excellence

CellGenix® GMP media are based on three major quality standards:

- Safety - Safe and qualified raw materials in compliance with our serum-free policy.
- GMP Compliance - Manufacturing and quality control following applicable GMP guidelines to provide documented evidence of potency, consistency and stability.
- Regulatory Compliance & Support - GMP products are manufactured, tested, released and distributed under an ISO 9001:2015 certified Quality Management System and allow for the safe use in accordance with USP Chapter <1043>and ISO 20399:2022.

We offer expert regulatory and technical support as well as FDA Drug Master Files for all CellGenix® GMP Media. Customized solutions can be provided to meet special compliance needs.

Germany

Sartorius Stedim Biotech GmbH
August-Spindler-Strasse 11
37079 Goettingen
Phone +49 551 308 0

Sartorius CellGenix GmbH
Am Flughafen 16
79108 Freiburg
Phone +49 761 88889 0
Fax +49 761 88889 830
info-freiburg@sartorius.com

USA

Sartorius Stedim North America Inc.
565 Johnson Avenue
Bohemia, NY 11716
Toll-free +1 800 368 7178

 **For more information, visit**
[sartorius.com](https://www.sartorius.com)