Datasheet

Human Serum

Origin: European Union

Product	Description	Catalogue-No.	Size
Human serum	**European Union origin** **Virus and mycoplasma tested**	**P30-2401** **P30-2402**	**100 ml** **500 ml**

Product description

Human Serum is a highly sensitive material and is subject to strict safety EU regulations. It is collected from volunteer donors. The sample collections taken from human, healthy donors in Europe certified donations institutions. The collection of blood follows the EU standards (Directive 2002/98/EC - quality and safety standards for the collection, testing, processing, storage and distribution of human blood and blood components).

According to the EU standards the donors were tested for the following infection parameters: HBsAg, HBV DNA, anti-HCV, HCV RNA, anti-HIV, HIV RNA and Lues serology. It is possible to exclude the window period in case of NAT and antibodies / antigen tests (e.g. HBsAg and HBV NAT) with the current state of the Art according to EU guidelines.

From the collection of the plasma up to the packaging of the final product each individual production step is controlled and well documented. Therefore, we provide our customers characterized with sera of consistently high quality, an absolute maximum level of safety and transparency.

Pooled human plasma units are converted into serum by defibrinating the plasma, filtered and bottled. The final serum product undergoes extensive quality control testing before it is released for distribution.

Human serum products should always be considered as potentially infectious and handled accordingly.

Composition

Human serum is a natural product it is obtained from human plasma. The plasma is then converted to serum by a process of clotting. Serum is a component of the blood therefore it contains a complex composition of serum proteins, growth factors, hormones, lipids, amino acids, sugar etc. Thereby serum is a universally applicable supplement in the cell culture.

Human Serum Applications

- alternative to fetal bovine serum (FBS)
- cell culture supplement
- suitable for a great variety of cells, particularly for human cells
- regenerative medicine
- tissue engineering
- human MSCs proliferated significantly more rapidly in the presence of Human Serum than with equivalent levels of FBS[1]
- blocking agent for immunohistochemical staining procedures
- Leukocyte antigen (HLA) typing

PAN Biotech GmbH – Am Gewerbepark 6 – 94501 Aidenbach – GERMANY
www.pan-biotech.com – phone +49-8543-601630 – fax +49-8543-601649

Human serum may be more suitable for the cultivation of human cells than FBS since serum and the cultured cells belong to the same species. Thus, the physiological and natural conditions in vitro are reproduced most similar to those *in vivo*. Human serum is particularly suitable for cell culture of human cells, tissue engineering of human tissue, sensitive cell lines and immune cells.

Human Serum Advantages

- low lot-to-lot variation
- reproducible growth properties
- innovative NEW product
- low endotoxin level
- continuous quality control

Instructions for Use

This product should be stored at -20°C or lower. When needed, it should be thawed at 2-8° C (e.g. overnight). Alternatively, to save time, it may be thawed rapidly under controlled conditions in a water bath at 37 °C, gently mixing the content from time to time. In this case it is important to closely observe the thawing process and stop when a small amount of ice is still present in the serum. After thawing the serum should be mixed well to get an even distribution of protein and growth factors (do not shake to prevent foaming) and immediately placed on ice until use. Thawed serum may be stored for up to four weeks at 2-8°C or can be refrozen in smaller aliquots for later use.
Avoid repeated freeze-thaw- cycles.

Human serum is usually used in a concentration between 5% and 15% serum. Cells cultured with FBS before should be adapted step by step to the new human serum. Initially, the cells should be cultivated for 4-6 days with a 10% serum mixture, consisting of 4% FBS and 6% human serum. Afterwards the final conversion to human serum can take place.

Removal of complement activity from the serum is not required for most cell cultures, but may be necessary for cells which are sensitive to the complement activity. The purpose of heat inactivation is to destroy complement activity in the serum without affecting the growth-promoting characteristics of the product. If heat inactivation is required, the process should be done very carefully and under controlled conditions. Considerable damages to serum and serum proteins can occur when it is exposed to higher than required temperatures or heated over extended lengths of time.

On request we take over with pleasure the heat inactivation of human serum.

Technical support

For technical support, questions or remarks please contact your local PAN-Biotech partner or the technical department of PAN-Biotech via email (info@pan-biotech.com) or phone +49-8543-601630.

FOR RESEARCH USE ONLY! Not approved for human or animal diagnostic or therapeutic procedures.

1) Comparison of Human Serum with Fetal Bovine Serum for Expansion and Differentiation of Human Synovial MSC: Potential Feasibility for Clinical Applications
Authors: Tateishi, K.; Ando, W.; Higuchi, C.; Hart, D. A.; Hashimoto, J.; Nakata, K.; Yoshikawa, H.; Nakamura, N., Source: Cell Transplantation, Volume 17, Number 5, 2008, pp. 549-557(9)

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