

Datasheet

SERApex NTA Pharma Grade

Defined Serum Substitute for Adherent Cells

Product	Description	Catalogue-No.	Size
SERApex NTA Pharma Grade	Defined serum substitute for adherent cells without animal components	ST04-95070P	50 ml
		ST04-95700P	100 ml
		ST04-95750P	500 ml

Product description

SERApex NTA Pharma Grade is a ready-to-use, chemically defined and animal-free serum substitute for the cultivation of adherent cells under serum-free conditions or to significantly reduce the amount of serum in cell culture. It supports the growth of many adherent cell types in an optimum manner without any extra handling compared to serum.

Storage conditions

Storage: -20°C (in the dark)
 Stability: 2 years from date of production
 Size: 50 ml, 100 ml, 500 ml, other sizes on request

Composition

SERApex NTA Pharma Grade contains purified proteins, lipids, salts, amino acids, trace elements, attachment factors and hormones in an optimized formulation. SERApex NTA Pharma Grade contains no growth factors, undefined hydrolysates or peptones and no animal derived components.

Suitability

SERApex NTA Pharma Grade is suitable for the cultivation of a variety of adherent cells under serum-free culture conditions or to reduce the necessary FBS amount in cell culture.

Special advantages

SERApex NTA Pharma Grade is designed to replace or to reduce serum in the cell culture in a very simple manner. There is no need to change the basal medium. As SERApex Pharma Grade is fully chemically defined and contains no peptones or hydrolysates, lot testing is no more necessary. It also allows high reproducibility and a simplified downstream process. SERApex Pharma Grade contains no growth factors and enables defined proliferation and differentiation of stem cells. Characterization studies of growth factors will obtain more reproducible and clearer results. SERApex Pharma Grade is also useful to develop sensitive cell-based *in vitro* tests and coculture procedures. For cell lines which require specific growth factors these should be added in a concentration as previously used.

Instructions for use

SERApex NTA Pharma Grade can be stored and used in the same manner as serum.

- Thaw SERApex at maximum 37 °C. Please avoid repeated freeze-thaw cycles!
- To replace serum: Use the same basal medium and the same concentration of SERApex as FBS. The performance can be further improved by optimizing the concentration of SERApex or modifying/changing the basal medium^a
- To reduce serum concentration: Use the same basal medium and add the same amount of SERApex as the reduced amount of serum, until the minimal necessary concentration of FBS

is found (1 to 2.5 % in most cases). The performance can be further improved by optimizing the the concentration of SERAplex or modifying/changing the basal medium^a (also see adaptation instruction).

- Recommended inoculation cell density: 5.000 – 20.000 cells/cm².
- If working with adherent cells: Solve adherent cells as usual from the cell culture vessel (e.g. 0.25% trypsin inhibitor, Cat.No. ST10-033100 or Accutase[®], Cat.No. ST10-21100). Once the cells have become round and detach from the surface inactivate trypsin with trypsin inhibitor (Cat.No. ST10-034100): Simply resuspend cells in about 1 ml trypsin inhibitor solution for every ml of trypsin solution used for dissociation. Note that Accutase[®] does not need to be inhibited.

Depending on the cell type, some differences in morphology or proliferation rate may be observed with varying standard media. Most applications were performed with DMEM and DMEM/F12 for adherent cells. Make sure that L-glutamine is present in sufficient quantity. The optimal SERAplex NTA concentration should be determined for each cell line. Tests can be started at a SERAplex NTA concentration of 10%, as with most cells the best results were obtained at this concentration.

Please note: For more demanding cells an adaptation to SERAplex NTA Pharma Grade may be necessary.

Adaptation instructions for SERAplex NTA Pharma Grade

Precondition for a successful transition are vital cells (trypan blue exclusion staining), which should be harvested in the logarithmic growth phase. If 10% FBS was used in the original protocol,

Step 1: 7.5 % FBS + 2.5 % SERAplex

- Seed cells at $5 \times 10^3 - 20 \times 10^3$ cells/cm².
- Observe cells under a microscope, at about 90 % confluence passage the cells for another 2-3 passages.

If normal growth is obtained transfer cells into:

Step 2: 5 % FBS + 5 % SERAplex

- Seed cells at $5 \times 10^3 - 20 \times 10^3$ cells/cm².
- Observe cells under a microscope, at about 90 % confluence passage the cells for another 2-3 passages.

If normal growth is obtained transfer cells into:

Step 3: 2.5 % FBS + 7.5 % SERAplex

- Seed cells at $5 \times 10^3 - 20 \times 10^3$ cells/cm².
- Observe cells under a microscope, at about 90 % confluence passage the cells for another 2-3 passages.

If normal growth is obtained transfer cells into:

Step 4: 1 % FBS + 9 % SERAplex

- Seed cells at $5 \times 10^3 - 20 \times 10^3$ cells/cm².
- Observe cells under a microscope, at about 90 % confluence passage the cells for another 2-3 passages.

If normal growth is obtained transfer cells into:

Step 5: 10 % SERAplex

- Seed cells at $5 \times 10^3 - 20 \times 10^3$ cells/cm².

Observe cells under a microscope.

For some cells an adaptation to serum-free conditions is difficult to reach or even impossible.

The following measures may help to facilitate a successful adaptation:

- Reseeding with a higher cell amount (about 2x to 4x of the usual cell density).
- Addition of growth factors (if known, which factors have a positive effect on the relevant cells).
- Coating the culture dishes or flasks with attachment factors (e.g. fibronectin, laminin, collagen, gelatine, etc).
- Change the basal medium. Note: A change of the basal medium to a richer or more complex formulation may be all that is needed to achieve growth in serum free condition.

Technical support

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

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^a As a basal medium, standard media such as RPMI 1640, DMEM (high or low glucose), DMEM/F12, IMDM etc. can be used. Make sure that L-glutamine is present in sufficient quantity (supplement L-glutamine as needed).