

# Genaxxon BioScience

## Serum free Medium Systems

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Product	Cat#	Package size
<b>Serafree 1:</b> Allround medium with phenol red	<b>C4204.0500</b>	<b>500 ml</b>
<b>Serafree 2:</b> without protein for production and preservation of lymphoid cells.	<b>C4205.0500</b>	<b>500 ml</b>
<b>Serafree 3:</b> Protein reduced medium for better purification of hybridoma cells.	<b>C4206.0500</b>	<b>500 ml</b>
<b>Serafree 4:</b> Chromosome medium	<b>C4207.0500</b>	<b>500 ml</b>
<b>Serafree 5:</b> Keratinocytes medium with supplements.	<b>C4208.0500</b>	<b>500 ml</b>
<b>Serafree 6:</b> Optimised for T-cells with supplements and phenol red.	<b>C4209.0500</b>	<b>500 ml</b>

### Product description

Serafree is a complete and ready to use medium for the cultivation of Mammalian Cells (serumfree) and is suitable for the growth of a wide variety of cell types without the need for additional additives. The use of Serafree reduces the need for documentation and exact validation processes. This simplifies to a large extent complex legal requirements.

For a variety of applications, a number of variations (Serafree 1 to Serafree 6) have been developed.

### The essential characteristics of serum free media are:

1. Serafree is an alternative for original media and foetal bovine serum.
2. Serafree is ready to use and easy to handle.
3. Serafree is a sufficient source of nourishment for most cells.
4. Serafree helps you to economise valuable time and cell material, time spent on tests of foetal bovine serum.
5. Serafree shows hardly any variation in product units.
6. Serafree is easily stored (no freezing required).
7. Serafree helps to isolate and clean all cell culture products (eg mono-clonal antibodies) due to the use of cleared proteins.
8. Serafree shows a low level of endotoxins at a constant rate.
9. Serafree offers stable growth properties.
10. Serafree is a defined medium, free of all non-defined protein complexes.

### Applicable to a broad spectrum of divers cells:

- Macrophages
- HEK-Cells
- Epithel-Cells
- Lymphocytes
- Human Mama Carcinoma Cells
- Fibroblasts
- Hybridoma
- Melanocytes
- HeLa-Cells
- CHO-Cells
- Carcinoma Cells

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## Serafree 1 - Serumfree allround medium

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Serafree 1 is a complete ready-to-use medium for the serum free cultivation of a variety of cells.

Among others the following cells have been cultivated successfully:

- Hybridoma – Lymphocytes – Macrophages – Fibroblasts – Melanocytes – Carcinome cells – HEK cells – HeLa cells – CHO cells.

### Composition:

Based on This Iscove's Medium as the basic medium, trace elements, albumin, cholesterol, soya lipids, and vitamins were added to the medium. It does not contain any growth or attachment factors nor any insulin.

### Applications:

For many cells (SP2, HEK, L929, CHO) a slow adaption to Serafree1 is not necessary. They are adapted to the serumfree culture according to the **Direct Adaption Method**.

Transfer vital cells (> 90% vitality) of the logarithmic growth phase from the culture containing serum directly into Serafree 1. A higher cell seed ( $5 \times 10^4$  –  $1 \times 10^5$ ) facilitates the adaption to the serumfree culture.

After 36-48 hours in the culture, replace medium by fresh Serafree 1.

As soon as the cells have confluent grown at 90% to 100%, passage the cells with the usual trypsinating technique. You have to be aware that cells in the serumfree culture show an extremely sensitive reaction on trypsin. Normal trypsin concentrations (0.25%) can be used, however the incubation period should be as short as possible at 4°C. The trypsin can be removed by washing the cells and centrifugation. Soybean trypsin inhibitor has to be used with caution as it is toxic for some cells.

After several passages into Serafree 1 the adaption is completed.

Critical cells can be adapted to the serumfree culture according to the **Gradual Adaption Method**.

Transfer vital cells (> 90% vitality) of the logarithmic growth phase from the culture containing serum (10% - 20% FCS) directly into Serafree 1. Reduce serum contents to 5%. The usual seeding densities can be kept, but with very critical cells increase seeding densities 1.5 to 2.0 times.

After 2 passages with 5% FCS supplementation, reduce FCS contents to 1%.

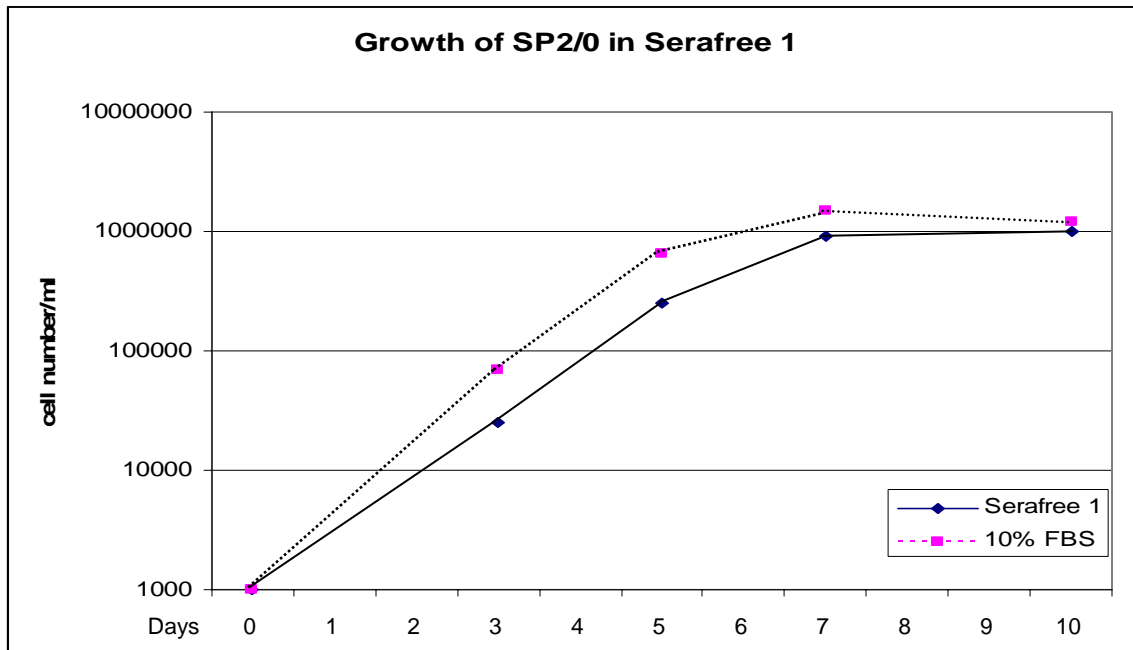
After 2-3 passages with 1% FCS, reduce serum contents to 0.5%.

After further 2-3 passages with 0.5% FCS, cultivate cells without addition of FCS in Serafree 1.

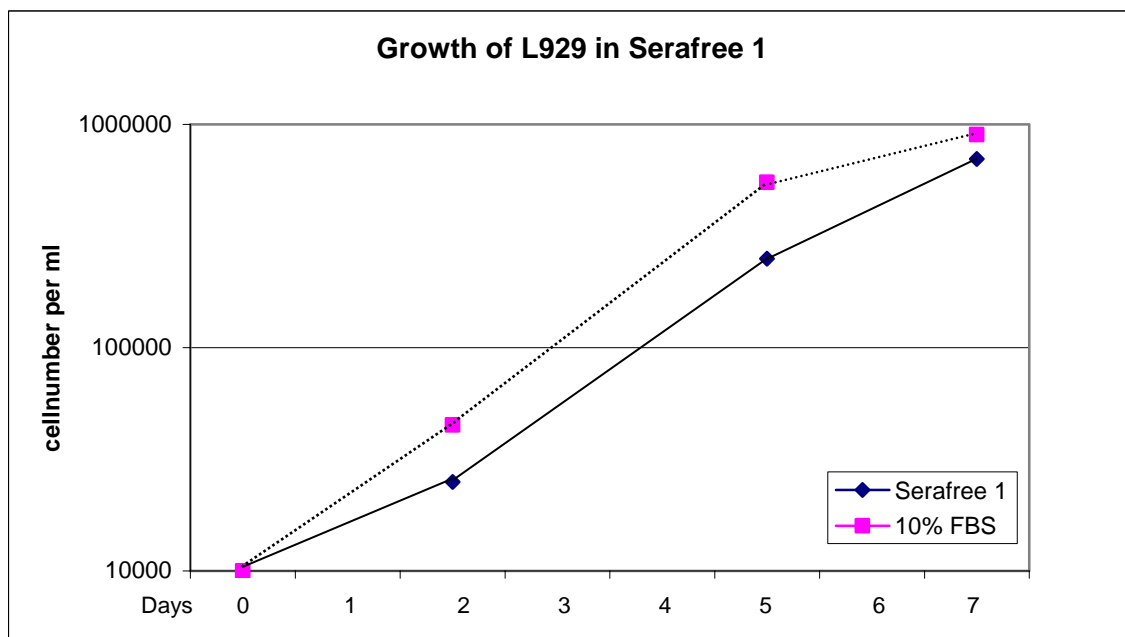
Serafree 1 does not contain any attachment factors. With some cell types a pretreatment of the incubation dishes with gelatin, collagen, poly-D-lysine or fibronectin can considerably facilitate the culture under serumfree conditions or even enable it. **Please note this above all for low seeding densities.**

Additional growth factors are necessary for some cells and have to be added dependign on demand.

**Please note:** With every adaption to serumfree media, changes of the cells should be taken into consideration. These chages can concern the morphology, the karyotype, the surface marker etc.. Thus cells in serumfree medium don't always habe to be identical with those from the culture containing serum from which they derive from (selection).



SP2/0-Ag-14 cells were cultivated in Serafree 1 without adaption phase. As a comparison cell growth in RPMI 1640 supplemented with 10% FCS is also shown.



L929 cells were cultivated in Serafree 1 without adaption phase. As a comparison cell growth in DMEM with 4.5 g/l glucose with 10% FCS is also shown.

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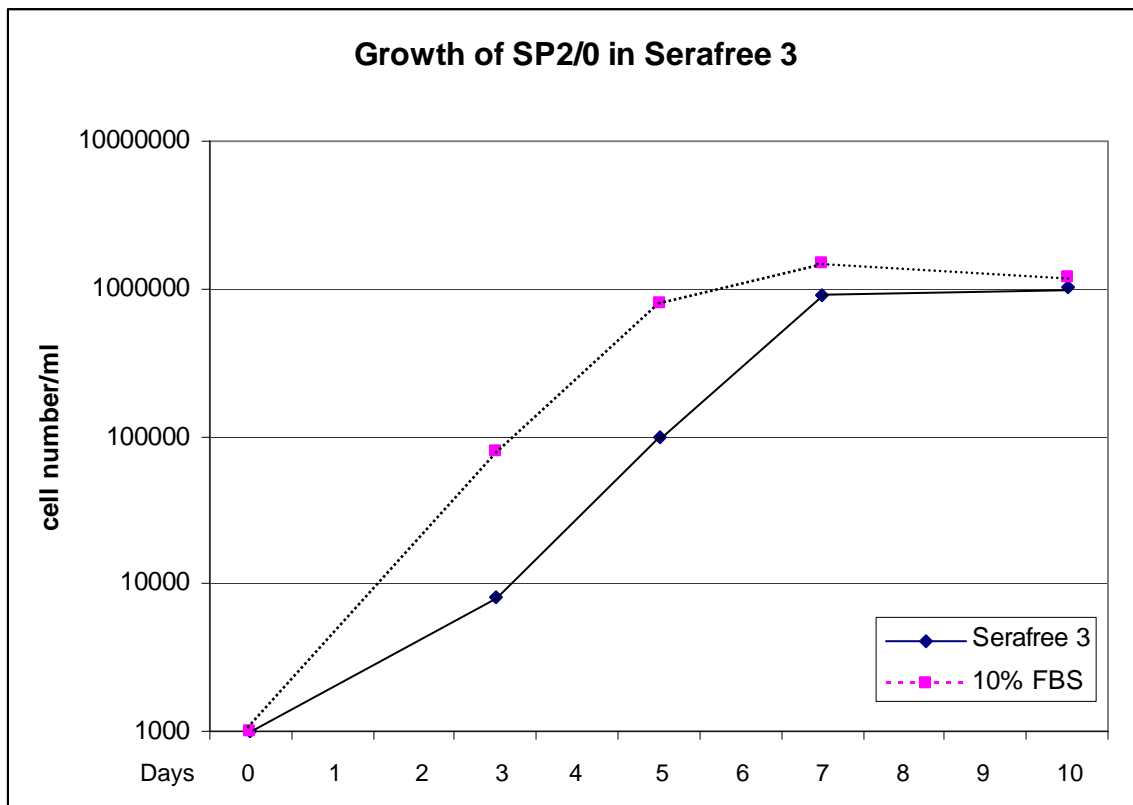
## Serafree 3 - Medium for Conservation with reduced Protein (10 mg/l)

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### Properties and Applications

- Serafree 3, which also is based on Iscove's medium contains no other proteins but Transferrin.
- Serafree 3 has a low protein content (< 15 mg/l). This low protein content makes the isolation of new cell synthesis products much easier.
- Serafree 3 is used to conserve the cultures.
- Serafree 3 improves the purification process.
- It is specifically useful as a conservation and production medium for lymphoid cells.
- Serafree 3 has also proven successfully for the production of monoclonal antibodies.

Example: The Hybridoma-cultures which are produced in Serafree 1 have an optimal conservation in Serafree 3. It is less effective for the development and multiplication of cells, as it shows compared to protein media only negligible growth rates resulting in extended doubling rates.



### Stability

Shelf-life up to 2 years. Can be stored at +4°C