

# Serum free Medium Systems

## Serafree 3 - Serumfree allround medium

Product	Cat#	Package size
Serafree 3: Allround medium with phenol red	C4206.0100	100mL
Serafree 3: Allround medium with phenol red	C4206.0500	500mL

### Product description

Serafree 3 is a complete ready to use medium for the serumfree cultivation of a multitude of adherent cells. The use of Serafree 3 reduces the need for documentation and exact validation processes. This simplifies to a large extent complex legal requirements.

### Composition:

Based on Iscove's MEM, trace elements, albumin, cholesterol, soya lipids, vitamins and Insulin were added to the medium. It does not contain any growth or attachment factors.

### 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. monoclonal 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.

### Suitability:

Serafree 3 is a multi-purpose medium suitable for a variety of adherent cells. It contains special attachment factors for the successful cultivation of cells that normally only hardly attach. As the medium contains no growth it is possible to investigate the special effects of added growth factors to the cell culture.

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

## Applications

In many cases the switch from serum-containing to serumfree cultivation can be done without any special adaption procedures. For those cells which do not tolerate an immediate switch we recommend a primary culture with serum containing medium and a stepwise reduction of medium towards a serumfree cultivation. We can provide you with an adaption protocol for many cells. This stepwise adaption will also be supported by higher cell seeds or using the lowered serum concentration after attachment in adherent cells. For the successful transfer into serumfree cultivation the vitality of the cells is an important factor. Thus the cells should be transferred in the logarithmic growth phase. According to our experience the transfer in the stationary growth phase will have lower prospects of success.

In adherent cells it should be assured that - if trypsin is used for detachment - the enzyme is completely washed out or is inactivated by trypsin-inhibitors for the serum to have no neutralizing effect.

In some cases of very sensitive cells it could be also reasonable to do the stepwise adaption and dilution not only with serum but also with the used medium. Serumfree media were developed to support the cell growth without the use of serum. Thus the ready-to-use Serafree 3 does not contain any further growth factors. The analysis of externally added growth factors will be more specific. For cells which are dependent on specific growth factors these factors should be added in the required concentrations.

---

fon:  
+49 (0)731 - 3608 123  
fax:  
+49 (0)731 - 3608 962  
eMail:  
info@genaxxon.com  
internet:  
www.genaxxon.com

## Protocol for the adaption of cells to sera free medium

For many cells (SP2, HEK, L929, CHO) a slow adaption to Serafree 1 or 2 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 pre-treatment of the incubation dishes with gelatine, collagen, poly-D-lysine or fibronectin can considerably facilitate the culture under serumfree conditions or even enable it. **Please note the above applies to low seeding densities.**