Culturing cells in a serum free media:

1. At first the cells to be grown in serum free environment have to be weaned off the serum growth conditions.
2. Initially the cells are cultured in serum condition and when they are about 60 – 70% confluent, trypsinize the cells and transfer them into a new pre-coated flask with extracellualr matrix, with the following composition of media 75% media with serum and 25% serum free media.
3. After 24 hours of incubation remove 100% media and feed the cells with 50% media with serum and 50% serum free media.
4. After 24 hours of incubation remove 100% media and feed the cells with 25% media with serum and 25% serum free media.
5. After 24 hours incubation remove 100% media and feed the cells with 5% serum and 95% serum free media.
6. After 24 hours incubation remove 100% media and feed the cells with 100% serum free media.
7. Maintain the cells in the serum free condition and then subculture the cells in the serum free environment.
8. Expand the cells in the serum condition, and subculture and freeze the cells in the appropriate cell freezing serum media conditions.

Why should I use serum-free media?

Serum-free media offers the customer better lot-to-lot consistency since it contains fewer undefined components, such as serum. Serum-free media are lower / free in protein content than medium supplemented with serum, which can simplify the purification process and increase the yield of the end product.

Serum-Free Media:

Advantages:

1. **defined**
2. **usually free of animal-derived components**
3. **effect of defined components and / or additions to media on cell growth may be examined**
4. **greater consistency between experiments**
5. **purification of desired secreted protein product simplified**

Disadvantages:

1. **slower cell growth often observed**
2. **must examine the requirements for cell growth**
3. **cells must be slowly weaned from medium containing serum**