





## Defined Fetal Bovine Serum

Cat #: BMC1020

Size: 500 mL

	<b>Defined Fetal Bovine Serum</b>		
	<b>Cat #:</b> BMC1020		<b>Lot #:</b> Refer to product label
	<b>Application:</b> Primary cells, hybridoma cells, nerve cells, endothelial cells, cell fusion, and cell transfection, etc		
	<b>Detection of contaminants:</b> Negative for bacteria, fungi, mycoplasma, bovine virus, etc		
	<b>Storage:</b> Stored at -20°C for 5 years; 4°C not more than 1 week		

## Assay Principle

Bovine serum is the largest natural medium used in cell culture, containing rich nutrients necessary for cell growth, and is often used in cell culture in vitro. The pH value, osmotic pressure, hemoglobin concentration, endotoxin level, total protein and other indicators of this product are qualified; Low endotoxin, no bacterial, mycoplasma, bacteriophage, virus and other contamination; Does not contain any artificial added ingredients, does not contain hormones, antibiotics, etc.. This product can be applied to a variety of conventional cell culture, to provide cells with necessary nutrients and a variety of growth factors, effectively promote cell growth. This product has been filtered by 0.1 µm to remove bacteria, and can be used after slow thawing at 4°C.

## Assay Procedure

### 1. Product acceptance:

- ① The inner and outer packaging of the serum should be intact, without damage, cracks, leakage and other unexpected cases;
- ② The serum should be frozen or mixed with ice water when it arrives, and should not be completely melted;
- ③ If the above phenomenon occurs, please contact us in time after taking photos for evidence, so as to replace it in time.

### 2. Thawing of serum:

- ① Please thaw in 4°C environment, should not be thawed at higher temperatures; Higher thawing temperature will lead to serum turbidity, precipitation increase and quality decrease;
- ② The thawing process of the serum can be gently shaken evenly (be careful not to cause bubbles), so that the serum composition and temperature are uniform, thereby reducing the production of precipitation;
- ③ The serum should be used as soon as possible after thawing, and try to avoid repeated freezing and thawing;
- ④ The serum should not be placed at room temperature for a long time, and should be placed in 4°C as soon as possible after use;
- ⑤ High temperature thawing, violent shaking, repeated freeze-thaw, placing time is too long, etc., will lead to the reduction of serum quality.

### 3. Dosage of serum:

- ① The concentration of Defined Fetal Bovine Serum used in the basic medium is generally 5-20%, which is added proportionally according to the cell type and experimental needs.

## FAQ

Q1: How to defrost serum without compromising product quality?

A1: ① After the serum was removed from the low temperature refrigerator, it was placed in the refrigerator at 4°C for about 12-24 h to dissolve partially, and then completely dissolved at room temperature; However, it must be noted that the dissolution process must be shaken regularly and evenly. ② Do not put the serum just taken out of the -20°C refrigerator directly in the water bath (room temperature or 37°C); Because the serum melts rapidly in the water bath, excessive temperature difference (-20°C→37°C, temperature difference of 57°C) is extremely easy to cause serum precipitation. ③ Serum should be stored at -20°C; If one bottle cannot be used up at a time, it should be sterile subpacked and then frozen to avoid repeated freezing and thawing.

Q2: What precipitates may occur in serum?

A2: ① fibrin, which is a large precipitate that often appears, can reach 1-2 mm and can be observed with the naked eye. ② Calcium phosphate, which is also a common precipitate, usually causes the serum to appear cloudy, and will increase when cultured at 37°C. This precipitate, when viewed under an inverted microscope, looks like small black spots, which are often mistaken for microbial contamination because brownian motion appears to be moving. Usually these small black spots do not affect cell growth, but if microbial contamination of the serum is suspected, it should be stopped immediately and another batch of serum should be replaced. Appropriate amount of serum can be diluted with culture medium to 10% concentration and cultured for 1-3 days to observe whether small black spots increase sharply, or appropriate amount of serum can be coated on LB plate for culture to observe whether bacterial colonies are produced to determine whether there is microbial contamination. ③ Cholesterol, fatty acid esters, and some proteins, which are also common causes of serum sediments. Experiments and experience show that precipitate does not affect cell culture and growth.

Q3: How to deal with the occurrence of flocculent precipitates found in the serum after thawing?

A3: If you want to remove these flocculent sediments, the serum can be subpacked into a sterile centrifuge tube, centrifuged at 400-600 g for 5 min, and the supernatant can be added to the medium for culture. We do not recommend that you remove these flocculent precipitates by filtration. On the one hand it may block your filter membrane, on the other hand, the act of filtering the serum may lead to the loss of some nutrients in the serum.

Q4: How to avoid the formation of sediment?

A4: The temperature is too high, the time is too long, the shaking is not uniform, etc., will cause the precipitation to increase; We recommend that serum inactivation is not necessary if not necessary; If it must be thermally inactivated, the principle of 56°C, 30 min should be strictly observed, and it should be shaken evenly at any time.

Q5: What is the best way to preserve serum?

A5: Serum for long-term storage must be stored in the refrigerator at -20°C or lower temperature; Studies have shown that serum stored at -80°C has no change in performance, but the huge temperature difference during thawing will lead to more precipitation, so it is not recommended to store at -80°C. The serum should not be stored in the refrigerator at 4°C for more than 1 week; If one bottle cannot be used up once, it is recommended to store it after packaging to avoid repeated freezing and thawing. In addition, the icing volume of the serum will increase by about 10%, so please reserve a certain volume space when packaging.

## Disclaimer

The reagent is only used in the field of scientific research, not suitable for clinical diagnosis or other purposes.