

# Fetal Bovine Serum

Dialyzed  
Sterile filtered

**Product Code: RM10685**

## Product Description:

Fetal bovine serum (FBS) is a ubiquitously used essential supplement in cell culture media. FBS is a cocktail of proteins, vitamins, carbohydrates, lipids, hormones, growth factors, minerals and trace elements and is used as an universal growth supplement effective for most types of human and animal (including insect) cells. The major functions of serum in culture media are to provide:

- i. Hormonal factors stimulating cell growth and proliferation and promoting differentiated functions.
- ii. Transport proteins carrying hormones (e.g. transcortin), minerals and trace elements and lipids (e.g. lipoproteins)
- iii. Attachment and spreading factors, acting as germination points for cell attachment.
- iv. Stabilizing and detoxifying factors needed to maintain pH or to inhibit proteases either directly, such as  $\alpha$ -antitrypsin or  $\alpha$ 2-macroglobulin, or indirectly, by acting as an unspecific sink for proteases and other (toxic) molecules.

RM10685 is dialyzed fetal bovine serum useful in cell culture systems requiring a defined environment. The process of dialysis results in depleting the serum of low molecular weight molecules (less than 10000 MW) such as nucleotides, amino acids, hormones, cytokines and salt. The serum is dialyzed against a solution of sterile PBS using a 10000Dalton cutoff membrane. This serum would be ideal for non radioactive and radioactive incorporation studies.

## Directions for Thawing of Serum:

Thawing of the sera should be done as quickly as possible in order to minimize the period of time during which elevated salt concentration prevail in the thawed liquid.

1. Remove the bottles from the freezer and allow them to acclimatize at room temperature for 10 minutes and keep in 2-8°C overnight in refrigerator.

*Note: Do not place the serum in the water bath or incubator. Avoid exposing serum to elevated temperatures as this can lead to degradation of heat labile nutrients.*

2. Swirl the bottle of serum frequently during thawing to disperse the released salts and proteins uniformly in the liquid.

## Note on Cryoprecipitate:

We advise our users to follow the recommended thawing procedure. Proper thawing with periodic agitation is crucial to a serum's optimum performance. If bottle of serum is not frequently swirled during thawing, the released proteins and salts tend to form crystalline or flocculent precipitates. These cryoprecipitates are not detrimental to the performance of serum but might affect serum's appearance and consistency. Slight turbidity or small amount of flocculent material is normal in most serum products and will not affect its performance in any manner. Filtering serum to remove cryoprecipitate is not recommended and could result in loss of nutrients.

## Quality Control:

### Physical and Chemical analysis:

|            |                                      |
|------------|--------------------------------------|
| Appearance | : Amber liquid                       |
| pH         | : 6.8 - 8.2                          |
| Osmolality | : 280 - 340 mOsm/Kg H <sub>2</sub> O |
| Endotoxin  | : Value EU/ml                        |
| Hemoglobin | : < 20 mg/dl                         |
| Identity   | : Typical                            |

**Protein:**

|               |                 |
|---------------|-----------------|
| Total protein | : 3.0- 4.5 g/dl |
| Albumin       | : value g/dl    |
| α-Globulin    | : value g/dl    |
| β-Globulin    | : value g/dl    |
| γ-Globulin    | : value g/dl    |
| IgG           | : < 250µg/ml    |

**Sterility Testing:**

|                    |                |
|--------------------|----------------|
| Aerobic bacteria   | : Not detected |
| Anaerobic bacteria | : Not detected |
| Fungi              | : Not detected |
| Mycoplasma         | : Not detected |

**Virus testing:**

|   |                |
|---|----------------|
| Bovine Virus Diarrhea Virus (BVD-V)           | : Not detected |
| Infectious Bovine Rhinotracheitis virus (IBR) | : Not detected |
| Parainfluenza Type 3 (PI-3)                   | : Not detected |

**Growth promotion and cytotoxicity:**

Each lot of serum is tested for growth promotion and cytotoxicity. Growth promotion ability of serum is assessed by supplementing medium with 10% serum and analyzing the cell lines qualitatively for morphology and quantitatively by estimating cell counts through minimum three subcultures.

**Storage and Shelf Life:**

Store at -10°C to -40°C away from bright light.

Shelf life of the product is 5 years.

Thawed serum can be stored at 2- 8°C up to four weeks.

Multiple freeze thaw cycles should be avoided.

Serum should never be stored in frost free freezers.

Frost free appliance undergoes intermittent warming cycles to prevent ice deposits and this might lead to multiple thawing of serum.

To avoid multiple freeze thaw cycles or long periods of refrigeration, we recommend freezing small aliquots which can be thawed and used as required.

Use before expiry date given on the label.

**Disclaimer :**

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