

# Product Instruction

## M199 Medium

### Product Type: M199

### Product Description

M199 medium is a classic base medium containing carbohydrates, amino acids, vitamins, inorganic salts, and other nutrients, which is suitable for the culture of non-transformed cells; also commonly used in virology, vaccine production, and tissue culture of rat pancreatic epithelial cells and mouse lens. BioEngine has passed the ISO13485 quality management system certification, and the product quality is stable and reliable.

### Product Formula

The complete formula can be downloaded from the company's website.

### Product Ingredient

The medium contains carbohydrates, amino acids, vitamins, metal ions, and other nutritional components.

This product does not contain hydrolysates, cytokines, antibiotics, HEPES, or nucleosides.

This product does not contain raw materials of animal origin

### Product Preservation

- Store in a dark environment at 2-8°C.
- This product is vulnerable to water damage. Please use it immediately after opening. If it needs to be stored, please seal it by heat sealing and sealing clips, avoiding dampness and ineffective.
- Do not recommend using when the product is beyond the expiration date.

### Instructions for the preparation of M199 medium

Prepare M199 medium as per the one Table 1 shows.

Component	Concentration
Dry powder of M199 medium	8.83g/L
Sodium bicarbonate	2.20g/L
Tween 80	0.02g/L

**Table 1 Preparation of M199 medium**

- (1) Weigh **90%** water **of** the final medium **preparation volume** into the medium preparation container. When preparing, ultrapure water or water for injection and above standard water should be used, and the water temperature should be controlled at 20-30°C. Turn on the mixing system of the medium preparation container, stir thoroughly, and avoid the generation of air bubbles during stirring.
- (2) Accurately weigh the corresponding mass of M199 medium dry powder according to the concentration ratio of 8.83g/L, add it to the preparation container of (1), and stir thoroughly for 15-30 minutes until it becomes clear.
- (3) Weigh 2.20g/L sodium bicarbonate powder and 0.02g/L Tween 80 liquid, add them into the preparation container near the liquid level and stir thoroughly for 5-10 minutes
- (4) Use 5mol/L sodium hydroxide solution or 1mol/L hydrochloric acid solution to adjust the pH value of the medium to 7.20-7.30, and use preparation water to **quantify to 100% of the preparation volume**.
- (5) It is recommended to use a pulse pump or compressed air (3-15 psi) to sterile filter the M199 medium solution through a sterile filter membrane with 0.22 µm pore size.
- (6) The prepared medium liquid should be stored in a dark environment at 2-8°C.
- (7) Reference parameters of the final product

Indicator	Reference Standard
Product pH value	7.20-7.60
Osmolality	250-310 mOsm/Kg

**Notes:**

- (1) The above units of "g/L" are volume concentration (solute mass/solution volume).
- (2) The above preparation parameters (such as stirring time, etc.) are for small-scale

preparation in research and development. When in mass production, please set appropriate preparation parameters according to the stirring capacity of the preparation vessel.

(3) The product belongs to a carbon dioxide buffer system. The product's final pH value may rise when vigorous or long-time stirring, which is a normal phenomenon and does not affect the use of the product.

