Earle's Balanced Salts
Without Phenol red and Sodium bicarbonate

Product Code: TS1009

Product Description:

All media used in tissue culture have a basis of a synthetic mixture of inorganic salts known as a physiological or balanced salt solution (BSS). All the physiological salt solutions have been derived from the salt solution originally described by Sydney Ringer (1885). The first balanced salt solution to be developed specifically for supporting the metabolism of mammalian cells was Tyrode’s solution. Since then many modifications have been done to obtain better buffering salt solutions and to prevent calcium precipitation.

The function of a salt solution is:
· To maintain the medium within physiological pH range.
· To maintain intracellular and extra cellular osmotic balance.
· Modified with a carbohydrate, such as glucose serves as an energy source for cell metabolism.

Earle's Balanced Salts is designed to equilibrate with a 5% CO₂ in air mixture. TS1009 is 1X powdered Earle's Balanced Salts mixture hence, requires the cells to be grown in a 5% CO₂ environment. It does not contain phenol red and sodium bicarbonate.

Composition:

Ingredients mg/L
INORGANIC SALTS
Calcium chloride dihydrate 265.000
Magnesium sulphate anhydrous 97.720
Potassium chloride 400.000
Sodium chloride 6800.000
Sodium dihydrogen phosphate anhydrous 122.000
OTHERS
D-Glucose 1000.000

Directions:
1. Suspend 8.7gms in 900ml tissue culture grade water with constant, gentle stirring until the powder is completely dissolved. Do not heat the water.
2. Add 2.2gms of Sodium bicarbonate powder or 29.3ml of 7.5% Sodium bicarbonate solution (TCL013) for 1 litre of solution and stir until dissolved.
3. Adjust the pH to 0.2-0.3 units below the desired pH using 1N HCl or 1N NaOH since the pH tends to rise during filtration.
4. Make up the final volume to 1000ml with tissue culture grade water.
5. Sterilize the solution immediately by filtering through a sterile membrane filter with a porosity of 0.22micron or less, using positive pressure rather than vacuum to minimize the loss of carbon dioxide.
6. Aseptically dispense the desired amount of sterile solution into sterile containers.
7. Store the liquid solution at ambient temperature and in dark till use.

Material required but not provided:
Tissue culture grade water (TCL010)
Sodium bicarbonate (TC230)
1N Hydrochloric acid (TCL003)
1N Sodium hydroxide (TCL002)
Sodium bicarbonate solution (TCL013)

Quality Control:
Appearance
Off-white to creamish white homogenous powder
Solubility
Clear solution at 8.7 gms/L
pH without Sodium Bicarbonate
5.00 - 5.60
pH with Sodium Bicarbonate
7.40 - 8.00
Osmolality without Sodium Bicarbonate (mOsm/Kg H₂O)
230.00 - 270.00
Osmolality with Sodium Bicarbonate (mOsm/Kg H₂O)
280.00 - 320.00

Please refer disclaimer overleaf
Toxicity test
Passes

Endotoxin content
NMT 1EU/ml

Storage and Shelf Life:

1. All powdered salt mixtures and prepared salt solutions should be stored at ambient temperature. Use before the expiry date. In spite of above recommended storage condition certain powdered salts may show some signs of deterioration /degradation in certain instances. This can be indicated by change in colour, change in appearance and presence of particulate matter and haziness after dissolution.

2. Preparation of concentrated solutions is not recommended as salt complexes having low solubility may precipitate in concentrated solutions.

3. If desired, sterile supplements can be added to the sterile solution observing all sterility precautions. Shelf life of the solution will depend on the nature of supplements added to the solution.

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