

Product Information

RPMI 1640 Medium

with 2.05 mM L-glutamine, without sodium bicarbonate

CATALOG NO. 56509C

Description

RPMI 1640 Medium was developed at Roswell Park Memorial Institute in 1966 by Moore and his co-workers. A modification of McCoy's 5A Medium, it was formulated to support lymphoblastoid cells in suspension culture, but it has since been shown to support a wide variety of cells that are anchorage dependent. Originally intended to be used with a serum supplement, RPMI 1640 has been shown to support several cell lines in the absence of serum. It has also been widely used in fusion protocols and in the growth of hybrid cells.

Precautions

Use aseptic technique when handling or supplementing this medium after filtration. This product is for further manufacturing use. THIS PRODUCT IS NOT INTENDED FOR HUMAN OR THERAPEUTIC USE.

Storage

Store dry powder medium at 2 to 8 C. Do not use after the expiration date. Store hydrated medium protected from light at 2 to 8 C.

Indications of Deterioration

Dry powder medium should be free flowing. Do not use if powder is caked. Prepared medium should be clear of particulates and flocculent material. Do not use if liquid medium is cloudy or contains precipitate. Other evidence of deterioration may include color change or degradation of physical or performance characteristics.

Formulation

Component (all components measured in mg/L)	
INORGANIC SALTS	
Calcium nitrate tetrahydrate	100.000
Magnesium sulfate anhydrous	48.840
Potassium chloride	400.000
Sodium chloride	6000.000
Sodium phosphate dibasic anhydrous	800.000
VITAMINS	
Biotin	0.200
D-calcium pantothenate	0.250
Choline chloride	3.000
Cyanocobalamin	0.005
Folic acid	1.000
i-inositol	35.000
Niacinamide	1.000
PABA	1.000
Pyridoxine HCl	1.000
Riboflavin	0.200
Thiamine HCl	1.000
AMINO ACIDS	
L-arginine free base	200.000
L-asparagine monohydrate	56.800
L-aspartic acid	20.000
L-cystine 2HCl	65.150
L-glutamic acid	20.000
L-glutamine	300.000
Glycine	10.000
L-histidine free base	15.000
Hydroxy L-proline	20.000
L-isoleucine	50.000
L-leucine	50.000
L-lysine HCl	40.000
L-methionine	15.000
L-phenylalanine	15.000
L-proline	20.000
L-serine	30.000
L-threonine	20.000
L-tryptophan	5.000
L-tyrosine 2Na dihydrate	28.830
L-valine	20.000
OTHER	
Dextrose	2000.000
L-glutathione	1.000
Phenol red sodium salt	5.310
Add: Sodium bicarbonate	2000.000
Grams of powder per liter	10.400

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Preparation Instructions

1. Measure 80 - 90% of the final volume of cell culture grade water (Catalog No. 59900C) into an appropriate size mixing vessel. Water temperature should be 15 to 30 C. Do not heat water.
2. Add the dry powder medium to the water. Rinse the original package with a small amount of cell culture grade water to remove all traces of powder and add to the solution. Mix until completely dissolved.
3. For each liter being prepared, add 2.0 g/L of sodium bicarbonate (Catalog No. 90421C) or 26.7 mL/L of sodium bicarbonate solution 7.5% (Catalog No. 59221C). Mix until completely dissolved.
4. While stirring the solution in Step 3, adjust the pH to 7.0 - 7.4 using NaOH 1N (Catalog No. 59223C) or HCl 1N. The pH of bicarbonate buffered solutions usually rises 0.1 - 0.2 units during filtration.
5. Add cell culture grade water to the solution in Step 4 to bring it to the final volume. Keep the vessel closed until the solution is filtered to avoid fluctuations in pH.
6. Sterilize the solution using a membrane filter with a pore size of 0.22 µm or less. A peristaltic pump or an inert gas such as nitrogen can be used to provide positive pressure at 3 - 15 psi. Do not use CO₂ gas.
7. Sterile solutions should be dispensed aseptically into sterile containers. Store protected from light at 2 to 8 C.
8. Supplements, such as antibiotics, can be added to the sterilized solution using aseptic technique. Storage conditions and shelf life of the supplemented product may be affected by the nature of the supplements. Sterile serum should not be refiltered before or after being added to sterile medium because growth promoting capacity may be reduced upon refiltration.

NOTE: Dry powder medium is extremely hygroscopic and must be protected from atmospheric moisture. We recommend that the entire contents of each package be used immediately after opening.

Characteristics

Appearance

Off-white free-flowing powder

Bioburden

≤ 100 CFU/100 mL

Endotoxin

≤ 1.0 EU/mL

Osmolality (as supplied)

Refer to Certificate of Analysis for lot-specific value

pH (as supplied)

8.0 - 8.4

References

1. Moore, G. E. et al., *JNCI* (1966) 36:405.
2. Moore, G. E., *JAMA* (1967) 199:519.
3. Moore, G. E. and Woods L. K., *TCA Manual* (1977) 3:503.

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