



## RPMI-1640 MEDIUM

With L-Glutamine and 25 mm HEPES,  
Without Sodium Bicarbonate  
Product Number **R4130**

### Product Description

RPMI-1640 medium was developed by Moore et al., at Roswell Park Memorial Institute, hence the acronym RPMI. RPMI-1640 medium has been used for the culture of normal and neoplastic leukocytes

Components	g/L
Calcium Nitrate•4H <sub>2</sub> O	0.1
Magnesium Sulfate (anhydrous)	0.04884
Potassium Chloride	0.4
Sodium Chloride	6.0
Sodium Phosphate Dibasic (anhydrous)	0.8
L-Arginine (free base)	0.2
L-Asparagine (anhydrous)	0.05
L-Aspartic Acid	0.02
L-Cystine•2HCl	0.0652
L-Glutamic Acid	0.02
L-Glutamine	0.3
Glycine	0.01
L-Histidine (free base)	0.015
Hydroxy-L-Proline	0.02
L-Isoleucine	0.05
L-Leucine	0.05
L-Lysine•HCl	0.04
L-Methionine	0.015
L-Phenylalanine	0.015
L-Proline	0.02
L-Serine	0.03
L-Threonine	0.02
L-Tryptophan	0.005
L-Tyrosine•2Na•2H <sub>2</sub> O	0.02883
L-Valine	0.02
D-Biotin	0.0002
Choline Chloride	0.003
Folic Acid	0.001
myo-Inositol	0.035
Niacinamide	0.001
p-Amino Benzoic Acid	0.001
D-Pantothenic Acid (hemicalcium)	0.00025
Pyridoxine•HCl	0.001
Riboflavin	0.0002
Thiamine•HCl	0.001
Vitamin B-12	0.000005
D-Glucose	2.0
Glutathione (reduced)	0.001
HEPES	5.958
Phenol Red (sodium)	0.0053

### Precautions and Disclaimer

REAGENT

For R&D use only. Not for drug, household or other uses.

### Preparation Instructions

Powdered media are hygroscopic and should be protected from moisture. The entire contents of each package should be used after opening. Preparing a concentrated solution of medium is not recommended as precipitates may form. Supplements can be added prior to filtration or introduced aseptically to sterile medium.

1. Measure out 90% of final required volume of water. Water temperature should be 15-20°C.
2. While gently stirring the water, add the powdered medium. Stir until dissolved. Do NOT heat.
3. Rinse original package with a small amount of water to remove all traces of powder. Add to solution in step 2. NOTE: It may be necessary to lower the pH to 4.0 with 1N HCl to completely dissolve this product. After it has dissolved completely, the pH can be raised to 7.2 with 1N NaOH prior to the addition of sodium bicarbonate.
4. To the solution in step 3, add 2 g sodium bicarbonate or 26.7 ml of sodium bicarbonate solution [7.5%w/v] for each liter of final volume of medium being prepared. Stir until dissolved.
5. While stirring, adjust the pH of the medium to 0.1-0.3 pH units below the desired pH since it may rise during filtration. The use of 1N HCl or 1N NaOH is recommended.
6. Add additional water to bring the solution to final volume.
7. Sterilize immediately by filtration using a membrane with a porosity of 0.22 microns.
8. Aseptically dispense medium into sterile container.

### Storage and Stability

Store the dry powdered medium at 2-8°C under dry conditions and liquid medium at 2-8 °C in the dark. Deterioration of the powdered medium may be recognized by any or all of the following: [1] color change, [2] granulation/clumping, [3] insolubility. Deterioration of the liquid medium may be recognized by any or all of the following: [1] pH change, [2] precipitate or particulates, [3] cloudy appearance [4] color change. The nature of supplements added may affect storage conditions and shelf life of the medium. Product label bears expiration date.

### Procedure

**MATERIALS REQUIRED BUT NOT PROVIDED**

Water for tissue culture use [W3500]  
Sodium Bicarbonate [S5761] or  
Sodium Bicarbonate Solution, 7.5% [S8761]  
1N Hydrochloric Acid [H9892]  
1N Sodium Hydroxide [S2770]  
Medium additives as required

**References**

1. Moore, G.E., Gerner, R.E. and Franklin, H.A., (1967).  
Culture of Normal Human Leukocytes. JAMA. 199, 519-524.

Revised: May 2007

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.

Sigma-Aldrich Inc.  
3050 Spruce St. St. Louis, MO 63103 USA 314-771-5765  
Technical Service: 800-325-5832 or call collect 314-771-5765  
Or e-mail at [techserv@sial.com](mailto:techserv@sial.com)  
To order: 800-325-3010 or call collect 314-771-5750  
[www.sigma-aldrich.com](http://www.sigma-aldrich.com)