Description

RPMI 1640 Medium (Roswell Park Memorial Institute 1640 Medium) was originally developed to culture human leukemic cells in suspension and as a monolayer. RPMI 1640 medium has since been found suitable for a variety of mammalian cells, including HeLa, Jurkat, MCF-7, PC12, PBMC, astrocytes, and carcinomas.

This DMEM-F12 is modified as follows:

With	Without
• HEPES	
• GlutaMAX™	
• Phenol Red	

Using DMEM/F-12

RPMI 1640 medium is unique from other media because it contains the reducing agent glutathione and high concentrations of vitamins. RPMI 1640 medium contains biotin, vitamin B_{12}, and PABA, which are not found in Eagle's Minimal Essential Medium or Dulbecco's Modified Eagle Medium. In addition, the vitamins inositol and choline are present in very high concentrations. RPMI 1640 medium with GlutaMAX™ supplement minimizes toxic ammonia build-up and improves cell viability and growth in an easy-to-use format. RPMI 1640 medium contains no proteins, lipids, or growth factors. Therefore, RPMI 1640 medium requires supplementation, commonly with 10% Fetal Bovine Serum (FBS). RPMI 1640 medium uses a sodium bicarbonate buffer system (2.0 g/L) and therefore requires a 5–10% CO_2 environment to maintain physiological pH.

Contents and Storage

Storage conditions: 2-8° C. Protect from light
Shipping conditions: Ambient
Shelf life: 12 months from date of manufacture

Formulation

Components	Molecular Weight	Concentration (mg/L)	mM
	Amino Acids		
Glycine	75.0	10.0	0.13333334
L-Alanyl-Glutamine	217.0	446.0	2.0552995
L-Arginine	174.0	200.0	1.1494253
L-Asparagine	132.0	50.0	0.37878788
L-Aspartic acid	133.0	20.0	0.15037593
L-Cystine	240.0	50.0	0.20833333
L-Glutamic Acid	147.0	20.0	0.13605443
L-Histidine	155.0	15.0	0.09677419
L-Hydroxyproline	131.0	20.0	0.15267175
L-Isoleucine	131.0	50.0	0.3816794
L-Leucine	131.0	50.0	0.3816794
L-Lysine hydrochloride	183.0	40.0	0.21857923
L-Methionine	149.0	15.0	0.10067114
L-Phenylalanine	165.0	15.0	0.09090909
L-Proline	115.0	20.0	0.17391305
L-Serine	105.0	30.0	0.2857143
L-Threonine	119.0	20.0	0.16806723
L-Tryptophan	204.0	5.0	0.024509804
L-Tyrosine	181.0	20.0	0.110497236
L-Valine	117.0	20.0	0.17094018
	Vitamins		
Biotin	244.0	0.2	8.1967213E-4
Choline chloride	140.0	3.0	0.021428572
D-Calcium pantothenate	477.0	0.25	5.24109E-4
Folic Acid	441.0	1.0	0.0022675737
Niacinamide	122.0	1.0	0.008196721
Para-Aminobenzoic Acid	137.0	1.0	0.00729927
Pyridoxine hydrochloride	206.0	1.0	0.004854369
Riboflavin	376.0	0.2	5.319149E-4
Thiamine hydrochloride	337.0	1.0	0.002967359
Vitamin B12	1355.0	0.0050	3.690037E-6
i-Inositol	180.0	35.0	0.19444445
	Inorganic Salts		
Calcium nitrate (Ca(NO3)2 4H2O)	236.0	100.0	0.42372882
Magnesium Sulfate (MgSO4-7H2O)	246.0	100.0	0.40650406
Potassium Chloride (KCl)	75.0	400.0	5.3333335
Sodium Bicarbonate (NaHCO3)	84.0	2000.0	23.809525
Sodium Chloride (NaCl)	58.0	6000.0	103.44827
Sodium Phosphate dibasic (Na2HPO4) anhydrous	142.0	800.0	5.633803
	Other Components		

D-Glucose (Dextrose)	180.0	2000.0	11.111111
Glutathione (reduced)	307.0	1.0	0.0032573289
Phenol Red	376.4	5.0	0.013283741

Specifications

General Specifications

Glutamine:	**GlutaMAX™-I**
Phenol Red Indicator:	Phenol Red
Form:	Liquid
HEPES Buffer:	No HEPES
Serum Supplementation:	Standard Serum Supplementation
Sodium Pyruvate Additive:	No Sodium Pyruvate
Volume:	500 ml
pH Range:	7.0 - 7.4
Osmolality:	260 - 310 mOsm/kg
Concentrated:	1 X
Product Size:	500 mL
Classification:	Animal Origin-Free
Culture Environment:	CO2
Supplementation Required:	Serum
Sodium Bicarbonate Buffer:	Sodium Bicarbonate
Shipping Condition:	Room Temperature