







Comparative Formulations

RPMI 1640


 Powder Media	RPP08	RPP10	RPP11	RPP12	RPP13	RPP14	RPP18	RPP20
Amino Acids	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Glycine	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
L-Arginine, Hydrochloride		242.31	242.31	242.31	242.31		242.31	242.31
L-Asparagine, Monohydrate	56.82	56.82	56.82	56.82	56.82	56.82	56.82	56.82
L-Aspartic Acid	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
L-Cystine, Dihydrochloride	65.20	65.20	65.20	65.20	65.20	65.20	65.20	65.20
L-Glutamic Acid	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
L-Glutamine	300.00	300.00	300.00	300.00		300.00		300.00
L-Histidine, Hydrochloride, Monohydrate	20.26	20.26	20.26	20.26	20.26	20.26	20.26	20.26
L-Hydroxyproline	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
L-Isoleucine	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
L-Leucine	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
L-Lysine, Hydrochloride	40.00	40.00	40.00	40.00	40.00		40.00	40.00
L-Methionine	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
L-Phenylalanine	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
L-Proline	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
L-Serine	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
L-Threonine	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
L-Tryptophan		5.00	5.00	5.00	5.00	5.00	5.00	5.00
L-Tyrosine, Disodium, Dihydrate	28.83	28.83	28.83	28.83	28.83	28.83	28.83	28.83
L-Valine	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00


 Powder Media	RPP08	RPP10	RPP11	RPP12	RPP13	RPP14	RPP18	RPP20
Inorganic Salts	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Calcium Nitrate, Hydrate	69.485	69.485	69.485	69.485	69.485	69.485	69.485	69.485
Magnesium Sulfate, Anhydrous	48.84	48.84	48.84	48.84	48.84	48.84	48.84	48.84
Potassium Chloride	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
Sodium Chloride	6000.00	6000.00	6000.00	5850.00	6000.00	5850.00	6000.00	6000.00
Sodium Phosphate Dibasic, Anhydrous	800.70	800.70	800.70	800.70	800.70	800.70	800.70	800.70
Other Components	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
D-Glucose, Anhydrous	2000.000	2000.00	2000.00	2000.00	2000.00	2000.000	2000.00	2000.00
L-Glutathione, Reduced	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.00
HEPES				5958.00		5958.00		
Phenol Red, Sodium Salt	5.000	5.00		5.00		5.00	5.00	
Vitamins	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
D-Biotin	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.20
Choline Chloride	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.00
D-Calcium Pantothenate	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.25
Folic Acid	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.00
Myo-Inositol	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Niacinamide	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.00
Para-Aminobenzoic Acid	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.00
Pyridoxine, Hydrochloride	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.00
Riboflavin	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.20
Thiamine, Hydrochloride	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Vitamin B12	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005


 Powder Media	RPP21	RPP22	RPP24	RPP26	RPP29
Amino Acids	mg/L	mg/L	mg/L	mg/L	mg/L
Glycine	10.00		10.00	10.00	10.00
L-Arginine, Hydrochloride			200.00		
L-Asparagine, Anhydrous				50.00	
L-Asparagine, Monohydrate	56.82		50.00		56.82
L-Aspartic Acid	20.00		20.00	20.00	20.00
L-Cystine, Dihydrochloride	65.20		65.20	65.00	65.20
L-Glutamic Acid	20.00		20.00	20.00	20.00
L-Glutamine	300.00			300.00	300.00
L-Histidine, Anhydrous				15.00	
L-Histidine, Hydrochloride, Monohydrate	20.26		15.00		20.26
L-Hydroxyproline	20.00		20.00	20.00	20.00
L-Isoleucine	50.00		50.00	50.00	50.00
L-Leucine	50.00		50.00	50.00	
L-Lysine, Hydrochloride			40.00		
L-Methionine	15.00		15.00		15.00
L-Phenylalanine	15.00		15.00	15.00	15.00
L-Proline	20.00		20.00	20.00	20.00
L-Serine	30.00		30.00	30.00	30.00
L-Threonine	20.00		20.00	20.00	20.00
L-Tryptophan	5.00		5.00	5.00	5.00
L-Tyrosine, Disodium, Dihydrate	28.83		20.00	29.00	28.83
L-Valine	20.00		20.00	20.00	20.00


 Powder Media	RPP21	RPP22	RPP24	RPP26	RPP29
Inorganic Salts	mg/L	mg/L	mg/L	mg/L	mg/L
Calcium Nitrate, Hydrate	69.485	69.485	69.485	69.485	69.485
Magnesium Sulfate, Anhydrous	48.84	48.84	48.84	48.84	48.84
Potassium Chloride	400.00	400.00	400.00	400.00	400.00
Sodium Chloride	6000.00	6000.00	6000.00	5850.00	6000.00
Sodium Phosphate Dibasic, Anhydrous	800.70	800.70	800.00	800.00	800.70
Other Components	mg/L	mg/L	mg/L	mg/L	mg/L
D-Glucose, Anhydrous	2000.00	2000.00		2000.00	2000.00
L-Glutathione, Reduced	1.000	1.000	1.000	1.000	1.000
HEPES				5958.00	
Phenol Red, Sodium Salt	5.00		3.18	5.00	
Sodium Succinate, Hexahydrate			100.00		
Succinic Acid			75.00		
Vitamins	mg/L	mg/L	mg/L	mg/L	mg/L
D-Biotin	0.200	0.200	0.200	0.200	0.200
Choline Bitartrate			5.44		
Choline Chloride	3.000	3.000		3.000	3.000
D-Calcium Pantothenate	0.250	0.250	0.250	0.250	0.250
Folic Acid	1.000	1.000	1.000	1.000	1.000
Myo-Inositol	35.00	35.00	35.00	35.00	35.00
Niacinamide	1.000	1.000	1.000	1.000	1.000
Para-Aminobenzoic Acid	1.000	1.000	1.000	1.000	1.000
Pyridoxine, Hydrochloride	1.000	1.000	1.000	1.000	1.000
Riboflavin	0.200	0.200	0.200	0.200	0.200
Thiamine, Hydrochloride	1.000	1.000	1.000	1.000	1.000
Vitamin B12	0.005	0.005	0.005	0.005	0.005

 Liquid Media	RPL01	RPL02	RPL03	RPL04	RPL05	RPL06	RPL07	RPL08
Amino Acids	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Glycine	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
L-Arginine, Hydrochloride		242.31	242.31	242.31	242.31	242.31	242.31	242.31
L-Asparagine, Monohydrate	56.82	56.82	56.82	56.82	56.82	56.82	56.82	56.82
L-Aspartic Acid	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
L-Cystine, Dihydrochloride	65.20	65.20	65.20	65.20	65.20	65.20	65.20	65.20
L-Glutamic Acid	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
L-Glutamine	300.00		300.00	300.00	300.00	300.00		300.00
L-Histidine, Hydrochloride, Monohydrate	20.26	20.26	20.26	20.26	20.26	20.26	20.26	20.26
L-Hydroxyproline	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
L-Isoleucine	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
L-Leucine	50.00	50.00	50.00	50.00		50.00	50.00	50.00
L-Lysine, Hydrochloride		40.00	40.00	40.00	40.00	40.00	40.00	40.00
L-Methionine	15.00	15.00	15.00	15.00	15.00		15.00	15.00
L-Phenylalanine	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
L-Proline	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
L-Serine	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
L-Threonine	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
L-Tryptophan	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
L-Tyrosine, Disodium, Dihydrate	28.83	28.83	28.83	28.83	28.83	28.83	28.83	28.83
L-Valine	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Inorganic Salts	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Calcium Nitrate, Hydrate	69.485	69.485	69.485	69.485	69.485	69.485	69.485	69.485
Magnesium Sulfate, Anhydrous	48.84	48.84	48.84	48.84	48.84	48.84	48.84	48.84
Potassium Chloride	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
Sodium Bicarbonate	1500.00	2000.00	2000.00	2000.00	2000.00	2000.00	2000.00	1500.00
Sodium Chloride	6000.00	6000.00	6000.00	6000.00	6000.00	6000.00	4750.00	6000.00
Sodium Phosphate Dibasic, Anhydrous	800.70	800.70	800.70	800.70	800.70	800.70	800.70	800.70

 Liquid Media	RPL01	RPL02	RPL03	RPL04	RPL05	RPL06	RPL07	RPL08
Other Components	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
D-Glucose, Anhydrous	4500.00	2000.00	2000.00	2000.00	2000.00	2000.00	2000.00	4500.00
L-Glutathione, Reduced	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
HEPES	2383.00						5958.00	2383.00
Phenol Red, Sodium Salt	5.00	5.00	5.00		5.00	5.00	5.00	5.00
Pyruvic Acid, Sodium Salt								110.00
Vitamins	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
D-Biotin	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
Choline Chloride	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
D-Calcium Pantothenate	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
Folic Acid	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Myo-Inositol	35.00	35.00	35.00	35.000	35.000	35.000	35.000	35.000
Niacinamide	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Para-Aminobenzoic Acid	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Pyridoxine, Hydrochloride	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Riboflavin	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
Thiamine, Hydrochloride	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Vitamin B12	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005

 Liquid Media	RPL09	RPL10	RPL11	RPL12	RPL15	RPL17	RPL19	RPL22
Amino Acids	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Glycine	10.00	10.00		10.00	10.00	10.00	10.00	
L-Arginine		200.00						
L-Arginine, Hydrochloride	242.31			242.31	242.31			
L-Asparagine, Monohydrate	56.82	56.82		56.82	56.82	56.82	56.82	
L-Aspartic Acid	20.00	20.00		20.00	20.00	20.00	20.00	
L-Cystine, Dihydrochloride	65.20	65.20		65.20	65.20	65.20	65.20	
L-Glutamic Acid	20.00	20.00		20.00	20.00	20.00	20.00	
L-Glutamine	300.00			300.00			300.00	
L-Histidine, Anhydrous		15.00						
L-Histidine, Hydrochloride, Monohydrate	20.26			20.26	20.26	20.26	20.26	
L-Hydroxyproline	20.00	20.00		20.00	20.00	20.00	20.00	
L-Isoleucine	50.00	50.00		50.00	50.00	50.00	50.00	
L-Leucine	50.00	50.00		50.00	50.00	50.00	50.00	
L-Lysine, Hydrochloride	40.00	40.00		40.00	40.00			
L-Methionine	15.00	15.00		15.00	15.00	15.00		
L-Phenylalanine	15.00	15.00		15.00	15.00	15.00	15.00	
L-Proline	20.00	20.00		20.00	20.00	20.00	20.00	
L-Serine	30.00	30.00		30.00	30.00	30.00	30.00	
L-Threonine	20.00	20.00		20.00	20.00	20.00	20.00	
L-Tryptophan	5.00	5.00		5.00	5.00	5.00	5.00	
L-Tyrosine, Disodium, Dihydrate	28.83	28.83		28.83	28.83	28.83	28.83	
L-Valine	20.00	20.00		20.00	20.00	20.00	20.00	
Inorganic Salts	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Calcium Nitrate, Hydrate	69.485	69.485	69.485	69.485	69.485	69.485	69.485	69.485
Magnesium Sulfate, Anhydrous	48.84	48.80	48.84	48.84	48.84	48.84	48.84	48.84
Potassium Chloride	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
Sodium Bicarbonate	2000.00	2000.00	2000.00	2000.00	2000.00	2000.00	2000.00	2000.00
Sodium Chloride	5850.00	6000.00	6000.00	5850.00	6000.00	6000.00	6000.00	6000.00
Sodium Phosphate Dibasic, Anhydrous	800.70	800.70	800.70	800.70	800.70	800.70	800.70	800.70

 Liquid Media	RPL09	RPL10	RPL11	RPL12	RPL15	RPL17	RPL19	RPL22
Other Components	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
D-Glucose, Anhydrous	2000.00			2000.00	2000.00	2000.00	2000.00	2000.00
L-Glutathione, Reduced	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
HEPES	5958.00			5958.00				
Phenol Red, Sodium Salt	5.00					5.00	5.00	5.00
Vitamins	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
D-Biotin	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
Choline Chloride	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
D-Calcium Pantothenate	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
Folic Acid	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Myo-Inositol	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Niacinamide	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Para-Aminobenzoic Acid	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Pyridoxine, Hydrochloride	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Riboflavin	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
Thiamine, Hydrochloride	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Vitamin B12	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005

 Liquid Media	RPL23	RPL25	RPL27	RPL28
Amino Acids	mg/L	mg/L	mg/L	mg/L
Glycine	10.00	10.00	10.00	10.00
L-Alanyl-L-Glutamine				447.47
L-Arginine, Hydrochloride	242.31		242.31	242.31
L-Asparagine, Monohydrate	56.82		56.82	56.82
L-Aspartic Acid	20.00	20.00	20.00	20.00
L-Cystine, Dihydrochloride	65.20	65.20	65.20	65.20
L-Glutamic Acid	20.00	20.00	20.00	20.00
L-Glutamine	300.00	300.00		
L-Histidine, Hydrochloride, Monohydrate	20.26	20.26	20.26	20.26
L-Hydroxyproline	20.00	20.00	20.00	20.00
L-Isoleucine	50.00	50.00	50.00	50.00
L-Leucine	50.00	50.00	50.00	50.00
L-Lysine, Hydrochloride	40.00		40.00	40.00
L-Methionine	15.00	15.00	15.00	15.00
L-Phenylalanine	15.00	15.00	15.00	15.00
L-Proline		20.00	20.00	20.00
L-Serine	30.00	30.00	30.00	30.00
L-Threonine	20.00	20.00	20.00	20.00
L-Tryptophan	5.00	5.00	5.00	5.00
L-Tyrosine, Disodium, Dihydrate	28.83	28.83	28.83	28.83
L-Valine	20.00	20.00		20.00
Inorganic Salts	mg/L	mg/L	mg/L	mg/L
Calcium Nitrate, Hydrate	69.485	69.485	69.485	69.485
Magnesium Sulfate, Anhydrous	48.84	48.84	48.84	48.84
Potassium Chloride	400.00	400.00	400.00	400.00
Sodium Bicarbonate	2000.00	2000.00	2000.00	2000.00
Sodium Chloride	6000.00	6000.00	6000.00	6000.00
Sodium Phosphate Dibasic, Anhydrous	800.70	800.70	800.70	800.70


Liquid Media

	RPL23	RPL25	RPL27	RPL28
Other Components	mg/L	mg/L	mg/L	mg/L
D-Glucose, Anhydrous	2000.00	2000.00	1000.00	2000.00
L-Glutathione, Reduced	1.000	1.000	1.000	1.000
Phenol Red, Sodium Salt	5.00	5.00	5.00	5.00
Vitamins	mg/L	mg/L	mg/L	mg/L
D-Biotin	0.200	0.200	0.200	0.200
Choline Chloride	3.000	3.000	3.000	3.000
D-Calcium Pantothenate	0.250	0.250	0.250	0.250
Folic Acid	1.000	1.000	1.000	1.000
Myo-Inositol	35.00	35.00	35.00	35.00
Niacinamide	1.000	1.000	1.000	1.000
Para-Aminobenzoic Acid	1.000	1.000	1.000	1.000
Pyridoxine, Hydrochloride	1.000	1.000	1.000	1.000
Riboflavin	0.200	0.200	0.200	0.200
Thiamine, Hydrochloride	1.000	1.000	1.000	1.000
Vitamin B12	0.005	0.005	0.005	0.005