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Product Information

RPMI-1640 Media

RPMI-1640 medium was developed by Moore et al., at Roswell Park Memorial Institute, hence the acronym RPMI. The formulation is based on the RPMI-1630 series of media utilizing a bicarbonate buffering system and alterations in the amounts of amino acids and vitamins. RPMI-1640 medium has been used for the culture of human normal and neoplastic leukocytes. RPMI-1640 when properly supplemented, has demonstrated wide applicability for supporting growth of many types of cell cultures, including fresh human lymphocytes in the 72-hour phytohemagglutinin (PHA) stimulation assay.

REFERENCES

1. Moore, G.E., Gerner, R.E. and Franklin, H.A., (1967). Culture of Normal Human Leukocytes. JAMA. 199, 519-524.
2. Moore, G.E. and Woods L.K., (1976). Culture Media for Human Cells- RPMI 1603, RPMI 1634, RPMI 1640 and GEM 1717. Tissue Culture Association Manual. 3, 503-508.
3. Moore, G.E. Gerner, R.E. and Minowada, J., (1967). Studies of Normal and Neoplastic Cells. Studies of Normal and Neoplastic Human Hematopoietic Cells In Vitro. Twenty-first Annual Symposium on Fundamental Cancer Research. February, 41-63.
4. Moore, G.E. and Kitamura, H., (1968). Cell Line Derived from Patient with Myeloma. NY State Journal of Medicine. 68, 2054-2060.

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COMPONENT	R 6504 R 5382 g/L	R 8758 [1X] g/L	R 4130 g/L	R 7388 [1X] g/L
INORGANIC SALTS				
Ca(NO ₃) ₂ •4H ₂ O	0.1	0.1	0.1	0.1
MgSO ₄ (anhyd)	0.04884	0.04884	0.04884	0.04884
KCl	0.4	0.4	0.4	0.4
NaHCO ₃	—	2.0	—	—
NaCl	6.0	6.0	6.0	6.0
Na ₂ HPO ₄ (Anhyd)	0.8	0.8	0.8	0.8
AMINO ACIDS				
L-Arginine (free base)	0.2	0.2	0.2	0.2
L-Asparagine (anhyd)	0.05	0.05	0.05	0.05
L-Aspartic Acid	0.02	0.02	0.02	0.02
L-Cystine•2HCl	0.0652	0.0652	0.0652	0.0652
L-Glutamic Acid	0.02	0.02	0.02	0.02
L-Glutamine	0.3	0.3	0.3	0.3
Glycine	0.01	0.01	0.01	0.01
L-Histidine (free base)	0.015	0.015	0.015	0.015
Hydroxy-L-Proline	0.02	0.02	0.02	0.02
L-Isoleucine	0.05	0.05	0.05	0.05
L-Leucine	0.05	0.05	0.05	0.05
L-Lysine•HCl	0.04	0.04	0.04	0.04
L-Methionine	0.015	0.015	0.015	0.015
L-Phenylalanine	0.015	0.015	0.015	0.015
L-Proline	0.02	0.02	0.02	0.02
L-Serine	0.03	0.03	0.03	0.03
L-Threonine	0.02	0.02	0.02	0.02
L-Tryptophan	0.005	0.005	0.005	0.005
L-Tyrosine•2Na•2H ₂ O	0.02883	0.02883	0.02883	0.02883
L-Valine	0.02	0.02	0.02	0.02
VITAMINS				
D-Biotin	0.0002	0.0002	0.0002	0.0002
Choline Chloride	0.003	0.003	0.003	0.003
Folic Acid	0.001	0.001	0.001	0.001
myo-Inositol	0.035	0.035	0.035	0.035
Niacinamide	0.001	0.001	0.001	0.001
p-Amino Benzoic Acid	0.001	0.001	0.001	0.001
D-Pantothenic Acid•½Ca	0.00025	0.00025	0.00025	0.00025
Pyridoxine•HCl	0.001	0.001	0.001	0.001
Riboflavin	0.0002	0.0002	0.0002	0.0002
Thiamine•HCl	0.001	0.001	0.001	0.001
Vitamin B-12	0.000005	0.000005	0.000005	0.000005
OTHER				
D-Glucose	2.0	2.0	2.0	2.0
Glutathione (reduced)	0.001	0.001	0.001	0.001
HEPES	—	—	5.96	4.77
Phenol Red•Na	0.0053	0.0053	0.0053	0.0053
ADD				
NaHCO ₃	2.0	—	2.0	2.0
Grams of powder required to prepare 1 L	10.4	N/A	16.4	N/A

Formulas continued next page

RPMI-1640 Media continued

				R 0883 R 5507 R 7880 [1X] g/L	R 7513 [1X] g/L	R 7638 [1X] g/L	R 6767 [1X] g/L
COMPONENT	R 7755 g/L	R 8005 g/L	R 8755 g/L				
INORGANIC SALTS							
Ca(NO ₃) ₂ •4H ₂ O	0.1	0.1	0.1	0.1	0.1	0.1	0.1
MgSO ₄ (anhyd)	0.04884	0.04884	0.04884	0.04884	0.04884	0.04884	0.04884
KCl	0.4	0.4	0.4	0.4	0.4	0.4	0.4
NaHCO ₃	—	—	—	2.0	2.0	1.0	2.0
NaCl	6.0	5.9	6.0	6.0	6.0	6.4	6.0
Na ₂ HPO ₄ (Anhyd)	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Succinic Acid•6H ₂ O•Na	0.1	—	—	—	—	—	—
Succinic Acid (free acid)	0.075	—	—	—	—	—	—
AMINO ACIDS							
L-Arginine	0.2	0.2	0.2	0.2	0.2	0.2	0.2
L-Asparagine (anhydrous)	0.05	0.05	0.05	0.05	0.05	0.05	0.05
L-Aspartic Acid	0.02	0.02	0.02	0.02	0.02	0.02	0.02
L-Cystine•2HCl	0.0652	0.0652	0.0652	0.0652	—	0.0652	0.0652
L-Glutamic Acid	0.02	0.02	0.02	0.02	0.02	0.02	0.02
L-Glutamine	—	0.3	0.3	—	—	—	—
Glycine	0.01	0.01	0.01	0.01	0.01	0.01	0.01
L-Histidine	0.015	0.015	0.015	0.015	0.015	0.015	0.015
Hydroxy-L-Proline	0.02	0.02	0.02	0.02	0.02	0.02	0.02
L-Isoleucine	0.05	0.05	0.05	0.05	0.05	0.05	0.05
L-Leucine	0.05	0.05	0.05	0.05	0.05	0.05	0.05
L-Lysine•HCl	0.04	0.04	0.04	0.04	0.04	0.04	0.04
L-Methionine	0.015	0.015	0.015	0.015	—	0.015	0.015
L-Phenylalanine	0.015	0.015	0.015	0.015	0.015	0.015	0.015
L-Proline	0.02	0.02	0.02	0.02	0.02	0.02	0.02
L-Serine	0.03	0.03	0.03	0.03	0.03	0.03	0.03
L-Threonine	0.02	0.02	0.02	0.02	0.02	0.02	0.02
L-Tryptophan	0.005	0.005	0.005	0.005	0.005	0.005	0.005
L-Tyrosine	0.02	—	—	—	—	—	—
L-Tyrosine•2Na•2H ₂ O	—	0.02883	0.02883	0.02883	0.02883	0.02883	0.02883
L-Valine	0.02	0.02	0.02	0.02	0.02	0.02	0.02
VITAMINS							
D-Biotin	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Choline Chloride	—	0.003	0.003	0.003	0.003	0.003	0.003
Choline Bitartrate	0.00544	—	—	—	—	—	—
Folic Acid	0.001	0.001	0.001	0.001	0.001	0.001	—
myo-Inositol	0.035	0.035	0.035	0.035	0.035	0.035	0.035
Niacinamide	0.001	0.001	0.001	0.001	0.001	0.001	0.001
p-Amino Benzoic Acid	0.001	0.001	0.001	0.001	0.001	0.001	0.001
D-Pantothenic Acid•½Ca	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025
Pyridoxine•HCl	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Riboflavin	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Thiamine•HCl	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Vitamin B-12	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005
OTHER							
D-Glucose	2.0	4.5	2.0	2.0	2.0	2.0	2.0
Glutathione (reduced)	0.001	0.001	0.001	0.001	0.001	0.001	0.001
HEPES	—	3.5745	—	—	—	4.77	—
Phenol Red•Na	0.00318	0.0053	—	0.0053	0.0053	0.0053	0.0053
ADD							
NaHCO ₃	2.0	2.0	2.0	—	—	—	—
L-Cystine•2HCl	—	—	—	—	0.0652	—	—
L-Glutamine	0.3	—	—	0.3	0.3	0.3	0.3
L-Methionine	—	—	—	—	0.015	—	—
Grams of powder required to prepare 1 L	10.3	16.4	10.4	N/A	N/A	N/A	N/A
Formulas continued next page							

Formulas continued next page

RPMI-1640 Media continued

	R 1383	R 7130	R 7509 R 8632 [1X]	R 5886 R 5632 [1X]	R 1145 [10X]
COMPONENT	g/L	g/L	g/L	g/L	g/L
INORGANIC SALTS					
Ca(NO ₃) ₂ •4H ₂ O	0.1	0.1	0.1	0.1	1.0
MgSO ₄ (anhyd)	0.04884	0.04884	0.04884	0.04884	0.4884
KCl	0.4	0.4	0.4	0.4	4.0
NaHCO ₃			2.0	2.0	—
NaCl	6.0	6.0	6.0	6.0	60.0
Na ₂ HPO ₄ (Anhyd)	0.8	0.8	0.8	0.8	8.0
AMINO ACIDS					
L-Arginine	0.2	0.2	0.2	0.2	2.0
L-Asparagine (anhydrous)	0.05	0.05	0.05	0.05	0.5
L-Aspartic Acid	0.02	0.02	0.02	0.02	0.2
L-Cystine•2HCl	0.0652	0.0652	0.0652	0.0652	0.652
L-Glutamic Acid	0.02	0.02	0.02	0.02	0.2
L-Glutamine	0.3	—	—	—	—
Glycine	0.01	0.01	0.01	0.01	0.1
L-Histidine	0.015	0.015	0.015	0.015	0.15
Hydroxy-L-Proline	0.02	0.02	0.02	0.02	0.2
L-Isoleucine	0.05	0.05	0.05	0.05	0.5
L-Leucine	0.05	—	0.05	0.05	0.5
L-Lysine•HCl	0.04	—	0.04	0.04	0.4
L-Methionine	0.015	—	0.015	0.015	0.15
L-Phenylalanine	0.015	0.015	0.015	0.015	0.15
L-Proline	0.02	0.02	0.02	0.02	0.2
L-Serine	0.03	0.03	0.03	0.03	0.3
L-Threonine	0.02	0.02	0.02	0.02	0.2
L-Tryptophan	0.005	0.005	0.005	0.005	0.05
L-Tyrosine•2Na•2H ₂ O	0.02883	0.02883	0.02883	0.02883	0.2883
L-Valine	0.02	0.02	0.02	0.02	0.2
VITAMINS					
D-Biotin	0.0002	0.0002	0.0002	0.0002	0.002
Choline Chloride	0.003	0.003	0.003	0.003	0.03
Folic Acid	0.001	0.001	0.001	0.001	—
myo-Inositol	0.035	0.035	0.035	0.035	0.35
Niacinamide	0.001	0.001	0.001	0.001	0.01
p-Amino Benzoic Acid	0.001	0.001	0.001	0.001	0.01
D-Pantothenic Acid•½Ca	0.00025	0.00025	0.00025	0.00025	0.0025
Pyridoxine•HCl	0.001	0.001	0.001	0.001	0.01
Riboflavin	0.0002	0.0002	0.0002	0.0002	0.002
Thiamine•HCl	0.001	0.001	0.001	0.001	0.01
Vitamin B-12	0.000005	0.000005	0.000005	0.000005	0.00005
OTHER					
D-Glucose	—	2.0	2.0	2.0	20.0
Glutathione (reduced)	0.001	0.001	0.001	0.001	0.01
HEPES			—	5.96	—
Phenol Red (sodium)	0.0053	0.0053	—	0.0053	0.053
ADD					
NaHCO ₃	2.0	2.0	—	—	2.0 at 1X
L-Glutamine	—	0.3	0.3	0.3	0.3 at 1X
L-Leucine	—	0.05			
L-Lysine•HCl	—	0.04			
L-Methionine	—	0.015			
Grams of powder required to prepare 1 L	8.4	10.0	8.4	10.0	N/A