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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.

*Formulas begin on next page*

<b>COMPONENT</b>	<b>R 6504</b> <b>R 5382</b> g/L	<b>R 8758</b> <b>[1X]</b> g/L	<b>R 4130</b> g/L	<b>R 7388</b> <b>[1X]</b> g/L
<b>INORGANIC SALTS</b>				
Ca(NO <sub>3</sub> ) <sub>2</sub> •4H <sub>2</sub> O	0.1	0.1	0.1	0.1
MgSO <sub>4</sub> (anhyd)	0.04884	0.04884	0.04884	0.04884
KCl	0.4	0.4	0.4	0.4
NaHCO <sub>3</sub>	—	2.0	—	—
NaCl	6.0	6.0	6.0	6.0
Na <sub>2</sub> HPO <sub>4</sub> (Anhyd)	0.8	0.8	0.8	0.8
<b>AMINO ACIDS</b>				
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 <sub>2</sub> O	0.02883	0.02883	0.02883	0.02883
L-Valine	0.02	0.02	0.02	0.02
<b>VITAMINS</b>				
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
<b>OTHER</b>				
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
<b>ADD</b>				
NaHCO <sub>3</sub>	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

COMPONENT	R 7755	R 8005	R 8755	R 0883 R 5507 R 7880	R 7513	R 7638	R 6767
	g/L	g/L	g/L	[1X] g/L	[1X] g/L	[1X] g/L	[1X] g/L
<b>INORGANIC SALTS</b>							
Ca(NO <sub>3</sub> ) <sub>2</sub> •4H <sub>2</sub> O	0.1	0.1	0.1	0.1	0.1	0.1	0.1
MgSO <sub>4</sub> (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 <sub>3</sub>	—	—	—	2.0	2.0	1.0	2.0
NaCl	6.0	5.9	6.0	6.0	6.0	6.4	6.0
Na <sub>2</sub> HPO <sub>4</sub> (Anhyd)	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Succinic Acid•6H <sub>2</sub> O•Na	0.1	—	—	—	—	—	—
Succinic Acid (free acid)	0.075	—	—	—	—	—	—
<b>AMINO ACIDS</b>							
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 <sub>2</sub> 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
<b>VITAMINS</b>							
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
<b>OTHER</b>							
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
<b>ADD</b>							
NaHCO <sub>3</sub>	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

**RPMI-1640 Media** continued

	<b>R 1383</b>	<b>R 7130</b>	<b>R 7509</b> <b>R 8632</b> [1X]	<b>R 5886</b> <b>R 5632</b> [1X]	<b>R 1145</b> [10X]
<b>COMPONENT</b>	g/L	g/L	g/L	g/L	g/L
<b>INORGANIC SALTS</b>					
Ca(NO <sub>3</sub> ) <sub>2</sub> •4H <sub>2</sub> O	0.1	0.1	0.1	0.1	1.0
MgSO <sub>4</sub> (anhyd)	0.04884	0.04884	0.04884	0.04884	0.4884
KCl	0.4	0.4	0.4	0.4	4.0
NaHCO <sub>3</sub>			2.0	2.0	—
NaCl	6.0	6.0	6.0	6.0	60.0
Na <sub>2</sub> HPO <sub>4</sub> (Anhyd)	0.8	0.8	0.8	0.8	8.0
<b>AMINO ACIDS</b>					
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 <sub>2</sub> O	0.02883	0.02883	0.02883	0.02883	0.2883
L-Valine	0.02	0.02	0.02	0.02	0.2
<b>VITAMINS</b>					
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
<b>OTHER</b>					
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
<b>ADD</b>					
NaHCO <sub>3</sub>	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