Catalog Number: 1055120

McCoy 5A (Iwakata & Grace Modification) with L-glutamine, without sodium bicarbonate

McCoy's 5A medium, as modified by Iwakata and Grace, is identical to RPMI 1629. Originally in 1959, McCoy and his colleagues described the amino acid requirements for the in vitro culturing of Novikoff Hepatoma cells. Basal Medium 5A was modified to create what is known as McCoy's 5A Medium for these investigations. Hsu and Kellogg further demonstrated the use of this medium to support the growth of primary cultures derived from normal bone marrow, testes, mouse kidney, skin, gingiva, rat embryo and other tissues. MP's medium is additionally suited for the propagation of leukocytes, biopsy tissues and the most demanding primary and continuous cell types. It is also available as modified by Park and Terasaki.

The Park and Terasaki Modification (PT) differs from the Iwakata and Grace Modication (IG) in that PT contains slightly modified levels of L-glutamic acid, glycine, L-hydroxyproline, L-proline, L-serine, L-threonine, L-tryptophan, and L-valine. The PT modification also contains the additions of penicillin, dihydrostreptomycin sulfate, gentamycin, fetal bovine serum and HEPES.

Formulation:

Component	***mg/lt***	***Mol. Wt.***	***Mol. (mM)***
Amino Acids			

L-Alanine	13.36000	89.1	0.15
L-Arginine HCl	42.14000	174.2	0.24
L-Asparagine H_2O	45.03000	150.1	0.30
L-Aspartic Acid	19.97000	133.1	0.15
L-Cysteine HCl H_2O	35.14000	175.6	0.20
L-Glutamic Acid	22.07000	147.1	0.15
L-Glutamine	219.20000	146.1	1.50
Glycine	7.51000	75.07	0.10
L-Histidine HCl H_2O	20.96000	209.6	0.10
L-Hydroxyproline	19.67000	131.1	0.15
L-Isoleucine	39.36000	131.2	0.30
L-Leucine	39.36000	131.2	0.30
L-Lysine HCl	36.54000	182.6	0.20
L-Methionine	14.92000	149.2	0.10
L-Phenylalanine	16.52000	165.2	0.10
L-Proline	17.27000	115.1	0.15
L-Serine	26.28000	105.1	0.25
L-Threonine	17.87000	119.1	0.15
L-Tryptophan	3.06000	204.2	0.01
L-Tyrosine	18.12000	181.2	0.10
L-Valine	17.57000	117.1	0.15
Vitamins			
Biotin	0.20000	244.3	0.0008
Choline Chloride	5.00000	139.6	0.0358
D-Calcium Pantothenate	0.20000	238.3	0.0008
Folic Acid	10.00000	441.4	0.0227
L-Ascorbic Acid	0.50000	176.1	0.0028
myo-Inositol	36.00000	180.2	0.1998
Niacin	0.50000	123.1	0.0041
Nicotinamide	0.50000	122.13	0.0041

para-Aminobenzoic Acid	1.00000	137.1	0.0073
Pyridoxal HCl	0.50000	203.6	0.0025
Pyridoxine HCl	0.50000	205.6	0.0024
Riboflavin	0.20000	376.4	0.0005
Thiamine HCl	0.20000	337.3	0.0006
Vitamin B12	2.00000	1355.4	0.0015
Inorganic Salts			
Calcium Chloride [$CaCl_2$ $2H_2O$] Dihydrate	132.50000	147	0.90
Magnesium Sulfate [$MgSO_4$]	97.68000	120.4	0.81
Potassium Chloride [KCl]	400.00000	74.55	5.37
Sodium Chloride [NaCl]	6460.00000	58.44	110.54
Sodium Phosphate Monobasic [NaH_2PO_4 H_2O] Monohydrate	580.00000	159.96	3.63
Other			
Dextrose	3000.00000	180.2	16.65
Glutathione (reduced)	0.50000	307.33	0.0016
Peptone	600.00000	n/a	n/a
Phenol Red Sodium Salt	10.00000	376.4	0.03
Add			
$NaHCO_3$ Powder (g/L)	2.20		
$NaHCO_3$ 7.5% Solution (mL/L)	29.40		

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