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TECHNICAL INFORMATION

Catalog Number: 1242349, 1242354

Ham's F12 (1X Solution) with L-glutamine

Description: Originally, Ham's Nutrient Mixtures were developed for the clonal growth of several Chinese hamster ovary (CHO) clone cells, Hela cells and mouse L-cells. Both F-10 and F-12 are formulated for use with or without serum, depending on the type of cells being cultured. F-10 has demonstrated satisfactory growth of human diploid cells, white blood cells for chromosomal analysis and primary rat, rabbit and chicken tissue explants. Ham's F-12 is well suited for the growth of primary rat hepatocytes and prostate epithelial cells. It is also the medium of choice for toxicity assays using CHO cells. MP also offers Ham's F-12 supplemented with 25 mM HEPES for improved buffering in the optimum pH range of 7.2-7.4.

F12K is a modification of Ham's F-12 and Coon's F-12 with increased amino acid and pyruvate concentrations. Additionally, the salts have been modified (Konigsbergs). F12K has been developed for culturing differentiated rat and chicken cells, as well as, primary human liver cells.

MgCl₂ has been substituted by MgSO₄ containing an equivalent amount of Mg ion.

Formulation:

Component	mg/L	Mol. Wt.	Mol. (mM)
Amino Acids			
L-Alanine	8.91000	89.1	0.10
L-Arginine HCl	210.70000	174.2	1.21
L-Asparagine H ₂ O	15.01000	150.1	0.10
L-Aspartic Acid	13.31000	133.1	0.10
L-Cysteine HCl H ₂ O	35.13000	175.6	0.20
L-Glutamic Acid	14.71000	147.1	0.10
L-Glutamine	146.20000	146.1	1.00
Glycine	7.51000	75.07	0.10
L-Histidine HCl H ₂ O	20.96000	209.6	0.10
L-Isoleucine	3.94000	131.2	0.03
L-Leucine	13.12000	131.2	0.10
L-Lysine HCl	36.53000	182.6	0.20
L-Methionine	4.48000	149.2	0.03

L-Phenylalanine	4.96000	165.2	0.03
L-Proline	34.54000	115.1	0.30
L-Serine	10.51000	105.1	0.10
L-Threonine	11.91000	119.1	0.10
L-Tryptophan	2.04000	204.2	0.01
L-Tyrosine	5.44000	181.2	0.03
L-Valine	11.72000	117.1	0.10
Vitamins			
Biotin	0.00730	244.3	0.00003
Choline Chloride	13.96000	139.6	0.1000
D-Calcium Pantothenate	0.4800	238.3	0.0020
Folic Acid	1.32000	441.4	0.0030
myo-Inositol	18.02000	180.2	0.1000
Nicotinamide	0.03700	122.13	0.0003
Pyridoxine HCl	0.06200	205.6	0.0003
Riboflavin	0.03800	376.4	0.0001
Thiamine HCl	0.33700	337.3	0.0010
Vitamin B12	1.36000	1355.4	0.0010
Inorganic Salts			
Calcium Chloride [CaCl ₂ 2H ₂ O] Dihydrate	44.10000	147	0.30
Cupric Sulfate [CuSO ₄] Pentahydrate	0.002497	249.68	0.00001
Ferrous Sulfate [FeSO ₄ 7H ₂ O] Heptahydrate	0.83400	278	0.0030
Magnesium Sulfate [MgSO ₄]	72.20000	120.4	0.60
Potassium Chloride [KCl]	223.70000	74.55	3.00
Sodium Bicarbonate [NaHCO ₃]	1176.00000	84.01	14.00
Sodium Chloride [NaCl]	7600.00000	58.44	130.05
Sodium Phosphate Dibasic [Na ₂ HPO ₄]	142.00000	141.96	1.00
Zinc Sulfate [ZnSO ₄ 7H ₂ O] Heptahydrate	0.86300	287.5	0.0030
Other			
Dextrose	1802.00000	180.2	10.00
Hypoxanthine	4.08000	136.1	0.03
Lipoic Acid	0.20600	206.3	0.0010
Methyl Linoleate	0.08800	294.5	0.0003
Phenol Red Sodium Salt	1.24000	376.4	0.0033
Putrescine 2HCl	0.16110	161.1	0.0010
Sodium Pyruvate	110.00000	110	1.00
Thymidine	0.72700	242.2	0.0030

Availability:

1X Liquid:

Ham's F-10 Medium:

Catalog Number	Description	Size
1240249	1X Ham's F-10 without L-glutamine	100 ml
1240254		500 ml
1240349	1X Ham's F-10 with L-glutamine	100 ml
1240354		500 ml
1240449	1X Ham's F-10 with 20 mM HEPES, without L-glutamine, sodium bicarbonate	100 ml
1240454		500 ml

Ham's F-12 Medium:

Catalog Number	Description	Size
1242354	1X Ham's F-12 with L-glutamine	500 ml
1242254	1X Ham's F-12 without L-glutamine	500 ml
1242454	1X Ham's F-12 Kaighn's Modification	500 ml

Dulbecco's Modification of Eagle's Medium/Ham's F-12 Medium:

Catalog Number	Description	Size
1246754	1X DMEM/Ham's F-12 (1:1) without L-glutamine	500 ml

10X Liquid:**Ham's F-10 Medium:**

Catalog Number	Description	Size
1440049	10X Ham's F-10 without L-glutamine, sodium bicarbonate	100 ml

Powders:**Ham's F-10 Medium:**

Catalog Number	Description	Size
1040120	Ham's F-10 with L-glutamine without sodium bicarbonate	10 x 1 liter
1040122		1 x 10 liter
1040124		1 x 50 liter
1040220	Ham's F-10 with L-glutamine without sodium bicarbonate, hypoxanthine	10 x 1 liter
1040222		1 x 10 liter
1040222		1 x 50 liter

Ham's F-12 Medium:

Catalog Number	Description	Size
1042120	Ham's F-12 with L-glutamine without sodium bicarbonate	10 x 1 liter
1042122		1 x 10 liter

References:

1. Ham, R.G., *Exptl. Cell Res.*, v. **39**, 515 (1963).
2. Morton, H.J., *In Vitro*, v. **6**, 89 (1970).
3. Rutaky, L.P. and Pumper, R.W., *In Vitro*, v. **9**, 648 (1974).
4. Soloman, J.J., *TCA manual*, v. **1**, 7 (1975).