

Technical Information

Nutrient Mixture F-10 Ham

Without L-Glutamine and Sodium bicarbonate

Product Code: AT1024A

Application: - Ham's Nutrient Mixtures were originally developed for single cell plating of near diploid Chinese Hamster Ovary(CHO) 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. Ham's Nutrient Mixture F10 was designed for clonal growth of CHO cells and chick embryo cells under serum free conditions. It is now widely used for culturing a variety of cells which include human diploid cells and white blood cells for chromosomal analysis and primary explants of rat, rabbit and chicken tissues.

AT1024A is Nutrient Mixture F-10 Ham without L- glutamine. Users are advised to review the literature for recommendations regarding medium supplementation and physiological growth requirements specific for different cell lines.

Composition**

Ingredients mg / Litre

INORGANIC SALTS

Calcium chloride dihydrate	44.100
Copper sulphate pentahydrate	0.0025
Ferric sulphate heptahydrate	0.834
Magnesium sulphate anhydrous	74.730
Potassium chloride	285.000
Potassium dihydrogen phosphate	83.000
Sodium chloride	7400.000
Sodium phosphate dibasic anhydrous	153.700
Zinc sulphate heptahydrate	0.0288

AMINO ACIDS

Glycine	7.510
L-Alanine	8.910
L-Arginine hydrochloride	211.000
L-Asparagine anhydrous	15.010
L-Aspartic acid	13.300
L-Cystine dihydrochloride	35.130
L-Glutamic Acid	14.700
L-Histidine hydrochloride monohydrate	21.000
L-Isoleucine	2.600
L-Leucine	13.100
L-Lysine hydrochloride	29.300
L-Methionine	4.480
L-Phenylalanine	4.960
L-Proline	11.500
L-Serine	10.500
L-Threonine	3.570
L-Tryptophan	0.600
L-Tyrosine disodium salt	2.610
L-Valine	3.500

VITAMINS

Biotin	0.024
Choline chloride	0.698
D-Ca-Pantothenate	0.715
Folic acid	1.320
Nicotinamide	0.615
Pyridoxine hydrochloride	0.206
Riboflavin	0.376
Thiamine hydrochloride	1.000
Vitamin B12	1.360
i-Inositol	0.541

OTHERS

D-Glucose	1100.000
Hypoxanthine sodium salt	4.080
Lipoic acid	0.210
Phenol red sodium salt	1.300
Sodium pyruvate	110.000
Thymidine	0.730

Methodology

1. Suspend 9.7gms in 900ml tissue culture grade water with constant, gentle stirring until the powder is completely dissolved. Do not heat the water.
2. Add 1.2gms of sodium bicarbonate powder (TC1230) or 16.0ml of 7.5% sodium bicarbonate solution (TCL1013) and 0.146gms of L-glutamine (TC1243) or 5.0ml of 200mM L- glutamine (TCL1012) for 1 litre of medium and stir until dissolved.
3. Adjust the pH to 0.2 - 0.3 pH units below the desired Ph using 1N HCl or 1N NaOH since the pH tends to rise during filtration.
4. Make up the final volume to 1000ml with tissue culture grade water.
5. Sterilize the medium immediately by filtering through a sterile membrane filter with a porosity of 0.22 micron or less, using positive pressure rather than vacuum to minimize the loss of carbon dioxide.
6. Aseptically add sterile supplements as required and dispense the desired amount of sterile medium into sterile containers.
7. Store liquid medium at 2-8 °C and in dark till use.

Material required but not provided

Tissue culture grade water (TCL1010)
 Sodium bicarbonate powder (TC1230)
 Sodium bicarbonate solution, 7.5% (TCL1013)
 1N Hydrochloric acid (TCL1003)
 1N Sodium hydroxide (TCL1002)
 L-Glutamine Powder (TC1243)
 L-Glutamine Solution, 200mM (TCL1012)
 Fetal bovine serum (BA3112/BA30432)

Quality Control

Appearance

Off-white to Creamish white, homogenous powder.

Solubility

Clear solution at 9.7gms/L

pH without Sodium Bicarbonate

6.00-6.60

pH with Sodium Bicarbonate

7.30 -7.80

Osmolality without Sodium Bicarbonate

260.00 -300.00

Osmolality with Sodium Bicarbonate

280.00 -320.00

Cultural Response

The growth promotion capacity of the medium is assessed qualitatively by analyzing the cells for the morphology and quantitatively by estimating the cell counts and comparing it with a control medium through minimum three subcultures.

Endotoxin Content

NMT 5EU/ml

Storage and Shelf Life

1. All the powdered media and prepared liquid culture media should be stored at 2-8°C. Use before the expiry date. In spite of above recommended storage condition, certain powdered medium may show some signs of deterioration /degradation in certain instances. This can be indicated by change in colour, change in appearance and presence of particulate matter and haziness after dissolution.

2. Preparation of concentrated medium is not recommended since free base amino acids and salt complexes having low solubility may precipitate in concentrated medium.

3. pH and sodium bicarbonate concentration of the prepared medium are critical factors affecting cell growth. This is also influenced by amount of medium and volume of culture vessel used (surface to volume ratio). For example, in large bottles, such as Roux bottles pH tends to rise perceptibly as significant volume of carbon dioxide is released. Therefore, optimal conditions of pH sodium bicarbonate concentration, surface to volume ratio must be determined for each cell type. We recommend stringent monitoring of pH. If needed, pH can be adjusted by using sterile 1N HCl or 1N NaOH or by bubbling in carbon dioxide.

4. If required, supplements can be added to the medium prior to or after filter sterilization observing sterility precautions. Shelf life of the medium will depend on the nature of supplement added to the medium.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conforms solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate.
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