Nutrient Mixture F-12 Ham, Kaighn's Modification
With L-Glutamine
Without Sodium bicarbonate

Product Code: AT106

Product Description:

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 F12 was originally designed for serial propagation and cloning of two CHO cell lines namely, CHD-3 and CHL-1 and mouse L cells. It is the medium of choice for the growth of cells of rodent origin and for cloning of myeloma and hybridoma cells. This medium is also the medium of choice for clonal toxicity assay using CHO cells.

Kaighn's modification of Ham's F-12 is a complex formulation of F-12 with increased amounts of amino acids and pyruvate. Salts used in this formulation are as given by Konisberg. This modification favors the growth and differentiation of rat and chicken cells and primary human liver cells.

AT106 is Nutrient mixture F-12 Ham, Kaighn's modification with 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/L
--- | ---
INORGANIC SALTS
Calcium chloride dihydrate | 135.240
Copper sulphate pentahydrate | 0.0025
Disodium hydrogen phosphate | 115.020
Ferrous sulphate heptahydrate | 0.834
Magnesium chloride anhydrous | 49.700
Magnesium sulphate anhydrous | 93.700
Potassium chloride | 283.290
Potassium dihydrogen phosphate | 58.500
Sodium chloride | 7597.200
Zinc sulphate heptahydrate | 0.1437

AMINO ACIDS
Glycine | 15.010
L-Alanine | 17.800
L-Arginine hydrochloride | 421.400
L-Asparagine monohydrate | 30.020
L-Aspartic acid | 26.620
L-Cystine hydrochloride heptahydrate | 70.240
L-Glutamic acid | 29.420
L-Glutamine | 292.200
L-Histidine hydrochloride monohydrate | 41.920
L-Isocitric acid | 7.872
L-Leucine | 26.240
L-Lysine hydrochloride | 73.040
L-Methionine | 8.960
L-Phenylalanine | 9.920
L-Proline | 69.060
L-Serine | 21.020
L-Threonine | 23.820
L-Tryptophan | 4.080
L-Tyrosine Disodium salt | 13.500
L-Valine | 23.420

VITAMINS
Biotin | 0.073
Choline chloride | 13.960
D-Ca-Pantothenate | 0.477
Folic acid | 1.320
Niacinamide | 0.037
Pyridoxine hydrochloride | 0.061
Riboflavin | 0.0376
Thiamine hydrochloride | 0.337
Vitamin B12 | 1.355
i-Inositol | 18.020

OTHERS
D-Glucose | 1260.000
Hypoxanthine Sodium Salt | 4.083
Lipoic acid | 0.2063
Phenol red Sodium Salt | 3.318
Putrescine dihydrochloride | 0.322
Sodium pyruvate | 220.000
Thymidine | 0.726

Please refer disclaimer overleaf
Directions:
1. Suspend 11.1gms in 900 ml tissue culture grade water with constant, gentle stirring until the powder is completely dissolved. Do not heat the water.
2. Add 2.50gms of sodium bicarbonate powder (TC230) or 33.3ml of 7.5% sodium bicarbonate solution (TCL013) 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 (TCL010)
- Sodium bicarbonate (TC230)
- Sodium bicarbonate solution, 7.5% (TCL013)
- 1N Hydrochloric acid (TCL003)
- 1N Sodium hydroxide (TCL002)
- Foetal bovine serum (RM1112/RM10432)

Quality Control:
- Appearance
  Off-white to Creamish white, homogenous powder.
- Solubility
  Clear solution at 11.1gms/L.
- pH without Sodium Bicarbonate
  5.30 -5.90
- pH with Sodium Bicarbonate
  7.40 -8.00
- Osmolality without Sodium Bicarbonate
  270.00 -310.00
- Osmolality with Sodium Bicarbonate
  320.00 -360.00
- 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. Inspite 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. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal diagnostic or therapeutic use but for laboratory, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.

Email: info@himedialabs.com

Revision : 1 / 2011