Nutrient Mixture F-10 Ham
With L-Glutamine
Without Sodium bicarbonate

Product Code: AT024

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 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.

AT024 is Nutrient Mixture F-10 Ham 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:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>mg/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>INORGANIC SALTS</td>
<td></td>
</tr>
<tr>
<td>Calcium chloride dihydrate</td>
<td>44.100</td>
</tr>
<tr>
<td>Copper sulphate pentahydrate</td>
<td>0.0025</td>
</tr>
<tr>
<td>Ferric sulphate heptahydrate</td>
<td>0.834</td>
</tr>
<tr>
<td>Magnesium sulphate anhydrous</td>
<td>74.730</td>
</tr>
<tr>
<td>Potassium chloride</td>
<td>285.000</td>
</tr>
<tr>
<td>Potassium dihydrogen phosphate</td>
<td>83.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>7400.000</td>
</tr>
<tr>
<td>Sodium phosphate dibasic anhydrous</td>
<td>153.700</td>
</tr>
<tr>
<td>Zinc sulphate heptahydrate</td>
<td>0.0288</td>
</tr>
<tr>
<td>AMINO ACIDS</td>
<td></td>
</tr>
<tr>
<td>Glycine</td>
<td>7.510</td>
</tr>
<tr>
<td>L-Alanine</td>
<td>8.910</td>
</tr>
<tr>
<td>L-Arginine hydrochloride</td>
<td>211.000</td>
</tr>
<tr>
<td>L-Asparagine anhydrous</td>
<td>15.010</td>
</tr>
<tr>
<td>L-Aspartic acid</td>
<td>13.300</td>
</tr>
<tr>
<td>L-Cysteine dihydrochloride</td>
<td>35.130</td>
</tr>
<tr>
<td>L-Glutamic acid</td>
<td>14.700</td>
</tr>
<tr>
<td>L-Glutamine</td>
<td>146.000</td>
</tr>
<tr>
<td>L-Histidine hydrochloride monohydrate</td>
<td>21.000</td>
</tr>
</tbody>
</table>

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

Directions:

1. Suspend 9.8gms 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 (TC230) or 16.0ml 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.

Please refer disclaimer overleaf
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 9.8 gms/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. 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:
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