**BioArtha Labs PVT LTD**
Unit 2, Plot #R-11, 1st Cross,
KSSIDC Industrial Estate
Bommasandra 2nd Stage,
Yarandahalli Jigani Rd Bangalore,
Karnataka -560099 (India)
info@bioarthalabs.com

# DATA SHEET

Rev.ver: 01

## 1. Identification

**Product Name:** **Nutrient Mixture F-10 Ham**
With 20mM HEPES buffer and Sodium bicarbonate w/o L-Glutamine

**Catalog.no:** **CCML098**

## 2. Description

Nutrient Mixture F-10 (Ham's F-10) Medium, developed by R. G. Ham, was originally designed for the clonal growth of Chinese Hamster Ovary (CHO) cells and other mammalian cells under serum-free or reduced-serum conditions. This medium provides a rich and balanced formulation that supports the growth of a broad spectrum of mammalian cell types, including fibroblasts, primary cells, and established lines.

Ham's F-10 contains a wide variety of nutrients, including higher concentrations of amino acids, vitamins, and additional growth factors compared to earlier basal media. It also includes hypoxanthine and thymidine to support the synthesis of nucleic acids and promote vigorous cell proliferation. The formulation's precise balance of glucose, salts, and trace elements makes it suitable for both adherent and suspension cultures.

Widely used for the culture of CHO, WI-38, primary rat liver, and other fastidious cells, F-10 medium is also employed in hybridoma culture and in serum-reduced systems where cell viability and productivity are critical. The medium may be further supplemented with L-glutamine, sodium bicarbonate, and fetal bovine serum depending on the specific requirements of the cell type.

## 3. Storage/Stability

| | |
|---|---|
| Appearance | Red colored, clear solution |
| $CO_2$ concentration, optimum | 5.0 % |
| Storage and shelf life | Store at +2°C to +8°C protected from light. Shelf life of 1 years. |
| Shipping conditions | Ambient |

## 4. Formulation

| **Components** | **Concentration (mg/L)** |
|---|---|
| **Amino Acids** | |
| Glycine | 7.5 |
| L-Alanine | 8.9 |
| L-Arginine hydrochloride | 211 |
| L-Asparagine-$H_2O$ | 15.01 |
| L-Aspartic acid | 13.3 |
| L-Cysteine hydrochloride-$H_2O$ | 35.12 |
| L-Glutamic Acid | 14.7 |

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| **Components** | **Concentration (mg/L)** |
|---|---|
| L-Histidine hydrochloride-$H_2O$ | 21 |
| L-Isoleucine | 2.6 |
| L-Leucine | 13.1 |
| L-Lysine hydrochloride | 29.3 |
| L-Methionine | 4.5 |
| L-Phenylalanine | 5 |
| L-Proline | 11.5 |
| L-Serine | 10.5 |
| L-Threonine | 11.9 |
| L-Tryptophan | 0.6 |
| L-Tyrosine disodium salt dihydrate | 2.61 |
| L-Valine | 3.5 |
| **Vitamins** | |
| Biotin | 0.024 |
| Choline chloride | 0.698 |
| D-Calcium pantothenate | 0.715 |
| Folic Acid | 1.32 |
| Niacinamide | 0.615 |
| Pyridoxine hydrochloride | 0.206 |
| Riboflavin | 0.376 |
| Thiamine hydrochloride | 1.0 |
| Vitamin B12 | 1.36 |
| i-Inositol | 0.541 |
| **Inorganic Salts** | |
| Calcium Chloride ($CaCl_2$-$2H_2O$) (dihydrate.) | 44.1 |
| Cupric sulfate ($CuSO_4$-$5H_2O$) | 0.0025 |
| Ferric sulfate ($FeSO_4$-$7H_2O$) | 0.834 |
| Magnesium sulfate (anhydrous) | 74.64 |
| Potassium Chloride (KCl) | 285.0 |
| Potassium phosphate monobasic | 83.0 |
| Sodium Chloride (NaCl) | 7400.0 |
| Sodium bicarbonate | 1200.000 |
| Sodium Phosphate dibasic ($Na_2HPO_4$) anhydrous | 153.7 |
| Zinc sulfate ($ZnSO_4$-$7H_2O$) | 0.0288 |
| **Other Components** | |
| Hypoxanthine Na | 4.08 |
| Lipoic Acid | 0.21 |
| Thymidine | 0.73 |
| Sodium Pyruvate | 110 |
| D-Glucose (Dextrose) | 1100.0 |
| HEPES buffer | 4766.400 |
| Phenol Red | 1.3 |