Ham´s F-12 Nutrient Mix with L-Glutamine

#GTC45.0500 (500ml)
(FOR RESEARCH ONLY)

Product: Filter sterilized Ham´s F-12 Nutrient Mix supplemented with L-Glutamine. This formulation is with Phenol Red and Sodium Pyruvate. Detailed formulation can be found on page 2.

Quantity: #GTC45.0500 comprises 500ml of Ham´s F-12 with L-Glutamine.

Applications: Cell Culture.

Appearance: Clear red/orange solution.

Specifications:

pH:	7.0-7.6
Osmolality:	280-320 mOsm/kg
Sterility:	sterile
Endotoxin:	<1.0 EU/ml

Storage: Store at +4ºC, protected from light, for up to 12 months. Once the product has been opened, store at +4ºC and use within 1 or 2 months.

Shipment: Shipment is typically carried out at room temperature as this product can be kept at room temperature for up to 2 weeks without any problem.

Usage: Ham´s F-12 Nutrient Mix was originally developed for serum-free, single-cell plate of Chinese Hamster Ovary (CHO) cells as well as lung cells and mouse L cells. In comparison to other basal media, Ham´s F-12 contains a larger variety of components, including zinc, thymidine, putrescine and hypoxanthine.

Albeit that Ham´s F-12 has also been used for supporting growth of CHO cells in serum-free medium, since it does not contain protein, lipids or growth factors, essential for cell proliferation, long-term viability and robust cell attachment. Therefore, it is often supplemented with 5-10% FBS (Fetal Bovine Serum) in order to support growth of other mammalian cell lines such as chondrocytes and rat epithelial cells. To maintain physiological pH, Ham´s F-12 contains sodium bicarbonate and therefore must be kept in a controlled CO_2-environment (5-10%). The pH indicator (phenol red) allows for monitoring pH changes from 6.2 (yellow) to 8.2 (red).

Detailed Formulation:

Table 1. Composition of #GTC45 Ham´s F-12 Nutrient Mix with L-Glutamine.

Amino Acids	(mg/L)
Glycine	7.51
L-Alanine	9.00
L-Arginine HCl	211.00
L-Asparagine H_2O	15.01
L-Aspartic Acid	13.30
L-Cysteine HCl H_2O	35.00
L-Glutamine	146.00
L-Histidine HCl H_2O	20.96
L-Isoleucine	3.94
L-Leucine	13.10
L-Lysine HCl	36.50
L-Methionine	4.48
L-Phenylalanine	4.96
L-Proline	34.50
L-Serine	10.50
L-Threonine	11.90
L-Tryptophan	2.04
L-Tyrosine 2Na $2H_2O$	7.78
L_Valine	11.70
Others	(mg/L)
D-Glucose	1802.00
Phenol Red (Na)	1.3
Hypoxanthine	4.08
Linoleic Acid	0.084
Lipoic Acid	0.210
Putrescine 2 HCl	0.151
Sodium Pyruvate	110.00
Thymidine	0.70

Vitamins	(mg/L)
D-Biotin	0.0073
Choline chloride	13.96
D-Calcium pantothenate	0.48
Folic Acid	1.32
Myo-Inositol	18.00
Nicotinamide	0.037
Pyridoxine HCl	0.062
Riboflavin	0.038
Thiamine HCl	0.34
Vitamin B12	1.36
Salts	(mg/L)
$CaCl_2.2H_2O$	44.10
$CuSO_4.5H_2O$	0.0025
$FeSO_4.7H_2O$	0.834
KCl	224.00
$MgCl_2.6H_2O$	123.00
NaCl	7599.00
$NaHCO_3$	1176.00
Na_2HPO_4	142.04
$ZnSO_4.7H_2O$	0.863