Product sheet

DMEM:Ham's F12 (1:1), w: 3.1 g/L Glucose, w: 2.5 mM L-Glutamine, w: 15 mM HEPES, w: 0.5 mM Sodium pyruvate, w: 1.2 g/L NaHCO3 | 820400a

DMEM:Ham's F12 is a widely recognized and extensively utilized basal medium in cell culture for biological research. It serves as a fundamental source of nutrients for the growth of various mammalian cell lines, particularly when supplemented with Fetal Bovine Serum (FBS).

This unique formulation combines Dulbecco's Modified Eagle Medium (DMEM) and Ham's F-12 (Ham's Nutrient Mixture F-12) in a precise 1:1 ratio. The addition of L-glutamine further enhances its composition.

DMEM, derived from Eagle's Minimal Essential Medium (EMEM), offers an increased concentration of amino acids and vitamins compared to its predecessor. In contrast, Ham's F-12 is based on Ham's F-10 medium, providing a complementary set of essential components.

To support optimal cell growth, it is common practice to supplement DMEM:Ham's F12 with FBS at a typical concentration of 5-10%. This addition is necessary as the medium lacks growth hormones, lipids, and proteins crucial for cellular development.

DMEM:Ham's F12 incorporates a pH buffer system and is often supplemented with phenol red, a pH indicator. Cultured cells in DMEM:Ham's F12, or any medium utilizing the bicarbonate buffer system, require a controlled CO2 environment of 5-10% to maintain appropriate pH levels.

Quality Control

- Sterile-filtered

Storage and Shelf Life

- Store at +2°C to +8°C, protected from light.
- Once opened, store at 4°C and use within 6–8 weeks.

Shipping Conditions

- Ambient temperature

Maintenance

- Keep refrigerated at +2°C to +8°C in the dark. Avoid freezing and frequent warming to +37°C, as it reduces product quality.
- Do not heat the medium beyond 37°C or use uncontrolled heat sources such as microwave appliances.
- If only part of the medium is to be used, remove the required amount and warm it to room temperature before use.

Composition

Category	Components	Concentration (mg/L)
Amino Acids	Glycine	18.75
	L-Alanine	4.45
	L-Arginine HCl	147.50
	L-Asparagine H_2O	7.50
	L-Aspartic Acid	6.65

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L-Cysteine HCl H_2O	17.56	
L-Cystine 2 HCl	31.29	
L-Glutamic Acid	7.35	
L-Glutamine	365.00	
L-Histidine HCl H_2O	31.48	
L-Isoleucine	54.47	
L-Leucine	59.05	
L-Lysine HCl	91.25	
L-Methionine	17.24	
L-Phenylalanine	35.48	
L-Proline	17.25	
L-Serine	26.25	
L-Threonine	53.45	
L-Tryptophan	9.02	
L-Tyrosine 2 Na 2 H_2O	55.79	
L-Valine	52.85	
Vitamins	D-Biotin	0.0035
	Choline Chloride	8.98
	D-Calcium Pantothenate	2.24
	Folic Acid	2.66
	myo-Inositol	12.60

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Nicotinamide	2.02	
Pyridoxine HCl	0.031	
Pyridoxal HCl	2.00	
Riboflavin	0.219	
Thiamine HCl	2.17	
Vitamin B_{12}	0.68	
Inorganic Salts	$CaCl_2$ 2 H_2O	154.50
	$CuSO_4$ 5 H_2O	0.0013
	$Fe(NO_3)_3$ 9 H_2O	0.05
	$FeSO_4$ 7 H_2O	0.417
	KCl	311.80
	$MgCl_2$ 6 H_2O	61.20
	$MgSO_4$ 7 H_2O	100.00
	NaCl	6996.00
	$NaHCO_3$	1200.00
	Na_2HPO_4	71.02
	NaH_2PO_4 2 H_2O	70.87
	$ZnSO_4$ 7 H_2O	0.432
Other Components	D-Glucose	3151.00
	Hypoxanthine	2.40

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HEPES	3574.50
Linoleic Acid	0.042
Lipoic Acid	0.105
Phenol Red Sodium Salt	8.63
Putrescine 2 HCl	0.081
Sodium Pyruvate	55.00
Thymidine	0.365