Dulbecco's Modified Eagle's Medium / Nutrient Mixture F-12 (DMEM/F-12) 1:1 Mixture (1X), Liquid

With L-glutamine
With trace elements
Without HEPES

Catalog Number **LM 002-07**
Storage Temperature 2~8°C

Product Description

F-12 Nutrient Mixture (Ham's F-12, **LM 010-02**) is used for serum-free cultivation of cell lines. During the past decade, researchers have reported the culture of Leydig cells and Sertoli cells in serum-free medium that contained insulin, transferrin, epidermal growth factor (EGF), leutinizing hormone or follicle stimulating hormone, somatomedin and growth hormone. A 1:1 mixture of Dulbecco's Modified Eagle's Medium (DMEM) and Ham's F-12 Nutrient Mixture is found to be most satisfactory for studies of this type.

LM 002-07 contains, instead of serum, a supplement of nutrients, growth factors, hormones, and 365 mg/L L-glutamine, but no HEPES. Trace elements-V, Mo, Ni, Si, Se, and Sn-are included. The selection of a nutrient medium is strongly influenced by (1) type of cell, (2) type of culture (monolayer, suspension, or clonal) and (3) degree of chemical definition necessary. It is important to review the literature for recommendations concerning medium, supplementation and physiological parameters required for a specific cell line.

Storage/Stability

The liquid medium should be stored at 2~8°C in the dark. Deterioration of the liquid medium may be recognized by (1) precipitate or particulate matter throughout the solution, (2) cloudy appearance, (3) color change, and/or (4) pH change. The nature of supplements added may affect storage conditions and shelf life of the medium. Product label bears expiration date.

Biological Performance Characteristics

The growth-promoting capacities of DMEM/F-12 medium are tested in a medium using an appropriate cell line(s). Growth rates are examined through three subculture generations and compared with parallel cultures grown in standardized control medium. Cells are counted and growth is plotted as a logarithmic function of time in culture, and seeding efficiency, doubling time, and final cell densities are determined. During the testing period cultures are examined microscopically for a typical morphology and evidence of cytotoxicity.

Precautions

For *In Vitro* Use Only

mg/L

Components	LM 002-07
Ammonium Metavanadate	0.00058
$CaCl_2$ (anhydrous)	116.60
$CuSO_4 \cdot 5H_2O$	0.0013
$Fe(NO_3)_3 \cdot 9H_2O$	0.05
$FeSO_4 \cdot 7H_2O$	0.417
KCl	311.80
$MgCl_2$	28.64
$MgSO_4$ (anhydrous)	48.84
NaCl	6996.00
$NaHCO_3$	1200.00
$NaH_2PO_4 \cdot H_2O$	62.50
Na_2HPO_4 (anhydrous)	71.02
$(NH_4)_6(Mo_7O_{24} \cdot 4H_2O)$	0.00618
$NiCl_2$	0.00012
$Na_2SiO_3 \cdot 9H_2O$	0.0142
Sodium selenite	0.00519
Stannous Chloride·$2H_2O$	0.00011
$ZnSO_4 \cdot 7H_2O$	0.432
D-Glucose	3151.00
HEPES	-
Na·Hypoxanthine	2.39
Linoleic Acid	0.042
Lipoic Acid	0.105
Phenol Red	8.10
Sodium Putrescine·2HCl	0.081
Sodium Pyruvate	55.00
Thymidine	0.365
L-Alanine	4.45
L-Arginine·HCl	147.50
L-Asparagine·H_2O	7.50
L-Aspartic Acid	6.65
L-Cysteine·HCl·H_2O	17.56
L-Cystine·2HCl	31.29
Glycine	18.75
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·2Na·$2H_2O$	55.79
L-Valine	52.85
Biotin	0.0035
D-Ca Panto thenate	2.24
Choline Chloride	8.98
Folic Acid	2.65
i-Inositol	12.60
Niacinamide	2.02
Pyridoxine·HCl	2.031
Riboflavin	0.219
Thiamine·HCl	2.17
Vitamin B_{12}	0.68

Product Profile	
Appearance	Red transparent solution
pH at RT	7.1 ~ 7.7
Osmolality	270 ~ 298 mOsm/kg H_2O
Endotoxin	≤ 1.0 EU/ml
Sterility	Sterilized by 0.2 μm filtration system. Sterility tests are performed in accordance with protocols described in USP.

References

Barnes, D. and Sato, G. 1980. Methods for growth of cultured cells in serum-free medium. *Analytical Biochemistry*. 102, 255-270.
Dulbecco, R. and Freeman, G. 1959. Plaque production by the polyoma virus. *Virology*. 8, 396-397.
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Without HEPES

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제품설명

F-12 Nutrient Mixture (Ham's F-12, **LM 010-02**)는 무혈청 배지로 세포를 배양할 수 있도록 개발된 것으로 여러 연구자들은 insulin, transferring, epidermal growth factor (EGF), leutinizing hormone (또는 follicle stimulating hormone), somatomedin, 그리고 성장호르몬 등이 포함된 무혈청 배지에서 Leydig 세포와 Sertoli 세포를 성공적으로 배양할 수 있다고 보고하였다. 특히 F-12 Nutrient Mixture와 Dulbecco's Modified Eagle's Medium (DMEM)을 1:1로 혼합한 배지가 세포를 혈청 없이 배양하는데 매우 효율적이라고 알려져 있다.

LM 002-07는 혈청 대신에 각종 영양분, 성장 인자 및 호르몬들과 365 mg/L의 L-glutamine을 포함하고 있으나 HEPES는 포함하고 있지 않다. 또한 V, Mo, Ni, Si, Se, 그리고 Sn 등의 미량 원소가 포함되어 있다. 적절한 배양액을 선택하기 위해서는 (1) 배양할 세포 종류, (2) 배양방법(monolayer, suspension, clonal), 그리고 (3) 필수 성분 포함 여부 등을 고려해야 한다. 또한 참고문헌을 기초로 하여 배양액에 혈청, 첨가물, 기타 물리적 조건 등을 최적화함으로써 배양하고자 하는 세포의 성장 및 목적 산물의 생산을 최적화할 수 있다.

보관 및 안정성

액상 배지는 차광하여 2~8°C에서 보관하여야 한다. 액상 배지의 변성은 (1) 침전물 또는 부유물, (2) 용액의 탁해짐, (3) 색의 변화, 그리고 (4) pH의 변화 등으로 나타날 수 있다. 추가로 첨가하는 첨가제의 성질에 의해 보관조건 및 배지의 유효기간이 바뀔 수 있으며, 유효기간은 제품 라벨에 표시되어 있다.

생물학적 특성

DMEM/F-12의 세포 증식 능력은 액상배지에 적합한 세포주를 배양하면서 시험한다. 성장 속도는 세 번의 계대 배양을 통하여 측정하고 표준품에서 배양한 것과 비교한다. 시간에 따른 세포수의 변화를 측정하고 seeding efficiency, doubling time, 그리고 최종 세포농도를 결정한다. 시험을 하면서 현미경으로 세포의 형태 변화와 cytotoxicity의 현상이 나타나는지 관찰한다.

주 의

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mg/L

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참고문헌

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