Shields and Sang M3 Insect Medium (1X), Liquid

With L-glutamine
With potassium bicarbonate
Insect cell culture tested

Catalog Number **LM 504-01**
Storage Temperature 2~8°C

Product Description

A variety of cell types developed when embryo cells of *Drosophila melanogaster* were cultured in Shields and Sang M3 Insect Medium. Nerve, muscles, fat-body, chitin-secreting, and macrophage-like cells (possibly haemocytes) appeared in this medium. And this medium has been found to support the rapid growth of both primary and established cultures of cells derived from *Drosophila melanogaster*. Drosophila cells have been employed to study a variety of biological processes including genetics, endocrinology, physiology and cell biology as well as recombinant protein expression.
LM 504-01 contains 600 mg/L L-glutamine and 500 mg/L potassium bicarbonate. 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 Shields and Sang M3 Insect Medium are tested in a medium containing 5~20% FBS using an appropriate insect 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 the final cell density 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 504-01
$CaCl_2$ (anhydrous)	760.274
$KHCO_3$	500.00
$MgSO_4$ (anhydrous)	2149.128
NaH_2PO_4	880.00
D-Glucose	10000.00
BIS-TRIS	1050.00
Yeast Extract	100.00
β-Alanine	250.00
L-Alanine	1500.00
L-Arginine	500.00
L-Aspargine (anhydrous)	300.00
L-Aspartic Acid	300.00
L-Cystene·HCl	200.00
L-Glutamic Acid·K	7880.00
L-Glutamic Acid·Na	6530.00
L-Glutamine	600.00
Glycine	500.00
L-Histidine	550.00
L-Isoleucine	250.00
L-Leucine	400.00
L-Lysine·HCl	850.00
L-Methionine	250.00
L-Phenylalanine	250.00
L-Proline	400.00
DL-Serine	350.00
L-Threonine	500.00
L-Tryptophan	100.00
L-Tyrosine·2Na	360.10
L-Valine	400.00
Choline Chloride	50.00
Oxalacetic Acid	250.00

Product Profile	
Appearance	Clear solution
pH at RT	6.2 ~ 6.8
Osmolality	323 ~ 357 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

Shields, G. and Sang, J. H..(1970) Characteristics of five cell types appearing during in vitro culture of embryonic material from Drosophila melanogaster. J. Embryol. Exp. Morphol. Feb;23(1):53-69.
Shields, G., Dubendorfer, A., and Sang, J. H..(1975) Differentiation in vitro of larval cell types from early embryonic cells of Drosophila melanogaster. J. Embryol. Exp. Morphol. Feb;33(1):159-75.
Dubendorfer, A., Shields, G., and Sang, J. H..(1975) Development and differentiation in vitro of Drosophila imaginal disc cells from dissociated early embryos. J. Embryol. Exp. Morphol. Apr;33(2):487-98.

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제품설명

Shields and Sang M3 Insect Medium은 초파리 *Drosophila melanogaster*의 배아세포 (embryo cells)를 배양하여 신경세포, 근육세포, 지방체 세포, 키틴분비 세포, 그리고 혈구세포 등의 다양한 세포로의 분화를 성공시킨 배지로, 초파리 유래의 초대 배양 세포 (primary cell) 와 수립 세포주 (established cell line)의 배양 및 성장 속도를 증가시키는 것으로 알려져 있다. 초파리 유래 세포들은 재조합 단백질의 발현 뿐 아니라 유전학, 내분비학, 생리학, 그리고 세포생물학 등 다양한 생물학 연구 분야에 매우 유용하게 응용되고 있다.

LM 504-01은 600 mg/L의 L-glutamine과 500 mg/L의 potassium bicarbonate을 포함하고 있다. 적절한 배양액을 선택하기 위해서는 (1) 배양할 세포 종류, (2) 배양방법 (monolayer, suspension, or clonal), 그리고 (3) 필수 성분 포함 여부 등을 고려해야 한다. 또한 참고문헌을 기초로 하여 배양액에 혈청, 첨가물, 그리고 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

Shields and Sang M3 Insect medium의 세포 증식 능력은 5~20%의 FBS를 포함하는 액상 배지에 적합한 곤충 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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참고문헌

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