Antibiotic Antimycotic Solution (100X)

Contains 10,000 units/mL of penicillin
10 mg/mL streptomycin sulfate
25 μg/mL amphotericin B
in 0.85% sodium chloride
For gram-positive, gram-negative bacteria, yeasts, and molds

Catalog Number **LS 203-01**
Storage Temperature -5~-20°C

Product Description

Microbial contamination results in the lethal errors in cell and tissue culture. Animal cell divides into two daughter cells in several hours to days, however microbes such as bacteria, fungi, or yeasts are doubled in decades of minute to hours. Hence, overgrowing of these microbes inhibits the growth, proliferation, and function of animal cells. Microbial components or products can result the toxic effect to animal cells. Generally, in culture medium, antibiotics are added for inhibition of microbial growth. Though there are many types of antibiotics used in cell culture media, penicillin G, streptomicin, and ampho- tericin B are widely used.

LS 203-01 may be used as the antibiotic and antimycotic solution for preventing the contamination of bacteria, yeasts, and molds. The generally used concentrations of these antibiotic and antimycotic materials are 100,000 units/L for penicillin, 100 mg/L for streptomicin, and 0.25 mg/L for amphotericin B. Each concentration of antibiotic and antimycotic materials can be obtained by 1/100 dilution of this solution in medium.

Antibiotics	Target Microbes*	Actions
Penicillin	G (+)	Interferes with the final stage of synthesis of the bacterial cell wall
Streptomycin	G (+ , -)	Binds to 30S subunit to cause misreading
Amphotericin B	Y, M	Interferes with the permeability of cell membrane of sensitive fungi by binding sterols

* G (+), Gram-positive bacteria
G (+, -), Gram-positive and Gram-negative bacteria
Y, Yeasts
M, Molds

Storage/Stability

Antibiotic antimycotic solution should be stored at -5~-20°C in the dark and can be stable for 3 days during cultivation of cells at 37°C. After 3 days, medium should be refreshed to a new medium. Deterioration of the liquid 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 capacity of the antibiotics is tested in a medium containing 10% FBS 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 efficiencies, doubling time, and final cell densities are determined. During the testing period, cultures are examined microscopically for a typical morphology and evidence of cytotoxicity.

The concentration of the antibiotics should be reduced to 1/2~1/10 for cell culture using serum free media.

Precautions

For *In Vitro* Use Only

Product Profile	
Appearance	Clear colorless solution
pH	6.1 ~ 6.7
Osmolality	299 ~ 347 mOsm/kg H_2O
Endotoxin	≤ 10 EU/ml
Sterility	Sterilized by 0.2 μm filtration system. Sterility tests are performed in accordance with protocols described in USP.

References

Perlman, D., Use of antibiotics in cell culture media, in Methods in Enzymology, Jakoby, W. and Pastan, I. H., eds, Academic Press, New York, NY, 1979, Vol. LVIII, 112.
Data for Biochemical Research, 3rd Edition, Dawson, R. M. C. *et. al.*, eds., Oxford University Press, Inc. New York, 1986, p 297.
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제품설명

세균이나 진균 등의 미생물 오염은 세포배양에 치명적인 결과를 초래한다. 동물세포가 한번 분열하는데 걸리는 시간은 수시간에서 수일인 것에 비해 미생물은 수십 분만에 한번씩 분열, 증식하므로 결국은 배양하고자 하는 동물세포가 제대로 성장을 하지 못하게 된다. 또한 이러한 미생물들이 생산 또는 분비하는 물질이 동물세포에 독소로 작용할 수도 있으므로 세포배양 배지에는 미생물의 증식을 막아주는 항생제를 첨가하여야 한다. 항생제에는 다양한 종류가 있으나 세포배양에서 가장 널리 사용하는 것은 페니실린, 스트렙토마이신, 그리고 암포테리신 B이다.

LS 203-01은 세균, 효모, 몰드 등의 오염 방지용 항생제 용액이다. 일반적으로 사용하는 항생제의 농도는 100,000 units/L의 페니실린, 100 mg/L의 스트렙토마이신, 그리고 0.25 mg/L의 암포테리신 B이며, 배지에 1/100로 희석하면 각 항생제의 농도를 얻을 수 있다.

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보관 및 안정성

Antibiotic antimycotic solution은 -5~-20°C에서 보관하여야 하며, 배지에 첨가하여 사용 하는 경우 (37°C) 에는 3일 정도 안정성이 유지되므로 3일 후에는 새로운 배지를 사용 하여야 한다. 용액 시약의 변성은 (1) 침전물 또는 부유물, (2) 용액의 탁해짐, (3) 색의 변화, 그리고 (4) pH의 변화 등으로 나타날 수 있다. 무균적으로 첨가하지 않게 되면 배지의 오염에 의한 변성이 일어날 수 있다. 유효기간은 제품 라벨에 표시되어있다.

생물학적 특성

Antibiotic antimycotic solution의 세포 배양 능력은 10%의 FBS를 포함하는 액상 배지에 적합한 세포주를 배양하여 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.

혈청을 사용하지 않는 무혈청배지에는 보통 혈청 첨가 배지의 1/2~1/10 농도를 사용하여 세포에 미치는 영향을 최소화할 수 있다.

주의

For *In Vitro* Use Only

Product Profile	
Appearance	Clear colorless solution
pH	6.1 ~ 6.7
Osmolality	299 ~ 347 mOsm/kg H_2O
Endotoxin	≤ 10 EU/ml
Sterility	Sterilized by 0.2 μm filtration system. Sterility tests are performed in accordance with protocols described in USP.

참고문헌

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