

## Penicillin-Streptomycin-Amphotericin B Solution (100X)

### Description:

Penicillin-Streptomycin-Amphotericin B Solution, is a frequently used antibiotic solution in in vitro culture. It is primarily used to prevent microbial contamination in in vitro cultures and is typically prepared as a 100X concentrated stock solution. Penicillin interferes with the synthesis of bacterial cell walls and is effective against Gram-positive bacteria. Streptomycin binds to the 30S subunit of bacterial ribosomes, inhibiting bacterial protein synthesis, and is effective against both Gram-negative and Gram-positive bacteria, especially Gram-negative bacteria. Amphotericin B binds to ergosterol in fungal cell membranes, causing membrane damage, increased permeability, leakage of intracellular substances, and disruption of normal metabolism, thereby exerting an antifungal effect. However, it is ineffective against bacteria. The combination of Penicillin, Streptomycin, and Amphotericin B can prevent the vast majority of bacterial and fungal contamination.

### Usage Instructions and Recommended Concentrations:

This product is prepared using water for injection and sterilized by 0.1  $\mu\text{m}$  filtration.

Recommended working concentrations: Penicillin at 100 U/mL; Streptomycin at 0.1 mg/mL;

Amphotericin B at 0.25  $\mu\text{g}/\text{mL}$ .

Usage instructions: After completely thawing, add to the cell culture medium at a maximum ratio of 1:100 (v/v).

### Product Composition

Component	Concentration
Penicillin G Sodium	10 kU/mL
Streptomycin Sulfate	10 mg/mL
Amphotericin B	25 $\mu\text{g}/\text{mL}$
Solvent	10 mM PBS Buffer

### Properties

Property	Description
Appearance	Colorless clear liquid
pH	4.0-7.0
Osmolality	320 - 380 mOsm/kg
Sterility	Sterile

## Storage and Stability:

Store in a cool, dry, and dark place. Stable for 1 year at 2-8°C and 2 years at -20°C.

Note: Avoid repeated freeze-thaw cycles as this may reduce potency and affect antibacterial efficacy.

## Precautions:

1. Ensure aseptic techniques are used when handling this product to avoid contamination.
2. This product is a concentrated solution; please dilute as needed before use.
3. Do not store at room temperature for extended periods or long-term at 2-8°C.
4. Thaw at 2-8°C, mix well before use. Avoid repeated freeze-thaw cycles. For small quantities, it is recommended to aliquot and freeze. If precipitates form upon thawing, gently mix (do not shake vigorously) and let stand at room temperature for about 1 hour or place in a 37°C incubator for 20-30 minutes to see if the precipitates dissolve. If they dissolve, the product can be used normally.
5. For your safety and health, wear a lab coat and disposable gloves during handling.
6. This product is intended for scientific research use by professionals only. It is not for clinical diagnosis or treatment, not for food or drug use, and should not be stored in residential areas.

