

# Antibiotics in Cell Culture

## Best Practices & Quick Reference Guide

**When to use them, when to avoid them**








**and how to protect your cells without compromising data quality.**



# PATHOGENS & RECOMMENDED ANTIBIOTICS

PATHOGEN TYPE	RECOMMENDED ANTIBIOTIC(S)	NOTES ON EFFECTIVENESS / CYTOTOXICITY
Gram-positive bacteria	» Penicillin-Streptomycin (Pen-Strep)	» Synergistic combo; effective against most Gram-positives. Low cytotoxicity at standard 1× concentration.
Gram-negative bacteria	» Streptomycin, Gentamicin	» Gentamicin offers broader Gram-negative coverage. Can stress sensitive cell lines.
Mixed bacterial flora	» Pen-Strep + Gentamicin	» Covers a wider bacterial spectrum. Monitor for resistance with long-term use.
Fungal contamination	» Amphotericin B	» Effective antifungal. Higher doses can harm mammalian cells. Poorly water-soluble; typically formulated with deoxycholate to increase solubility. Light-sensitive — protect from light. Store at -20 °C.
Mixed fungus + bacteria	» Antibiotic-Antimycotic solution (Pen-Strep + Amphotericin B)	» Convenient mix of Pen-Strep and Amphotericin B. For usage, cytotoxicity, and storage details, see individual components above.
Mycoplasma	» — (Requires targeted treatment) <a href="#">Learn more here.</a>	» Lacks a cell wall — unaffected by typical antibiotics. Use PCR-based detection and <a href="#">Mycoplasma-specific elimination reagents.</a>

📌 Not all contaminants behave the same way — and no single antibiotic fits every threat. Use this table to quickly match pathogen types with suitable antibiotics – and know their limitations.

 PATHOGEN	 SUGGESTED AGENT	 NOTES
 <b>Gram-positive bacteria</b>	Pen-Strep (PS-B)	Low toxicity
 <b>Gram-negative bacteria</b>	Gentamicin (GEN-10B)	May stress sensitive cells
 <b>Mixed bacterial flora</b>	Pen-Strep + Gentamicin (PS-B, GEN-10B)	Short-term only
 <b>Fungi</b>	Amphotericin B (AMP-B)	Light-sensitive
 <b>Mixed (bacteria + fungi)</b>	A/A solution (AAS-B)	Broad but potentially harsh, light-sensitive
 <b>Mycoplasma</b>	MycoXpert (MYX-B)	Requires PCR + targeted reagent

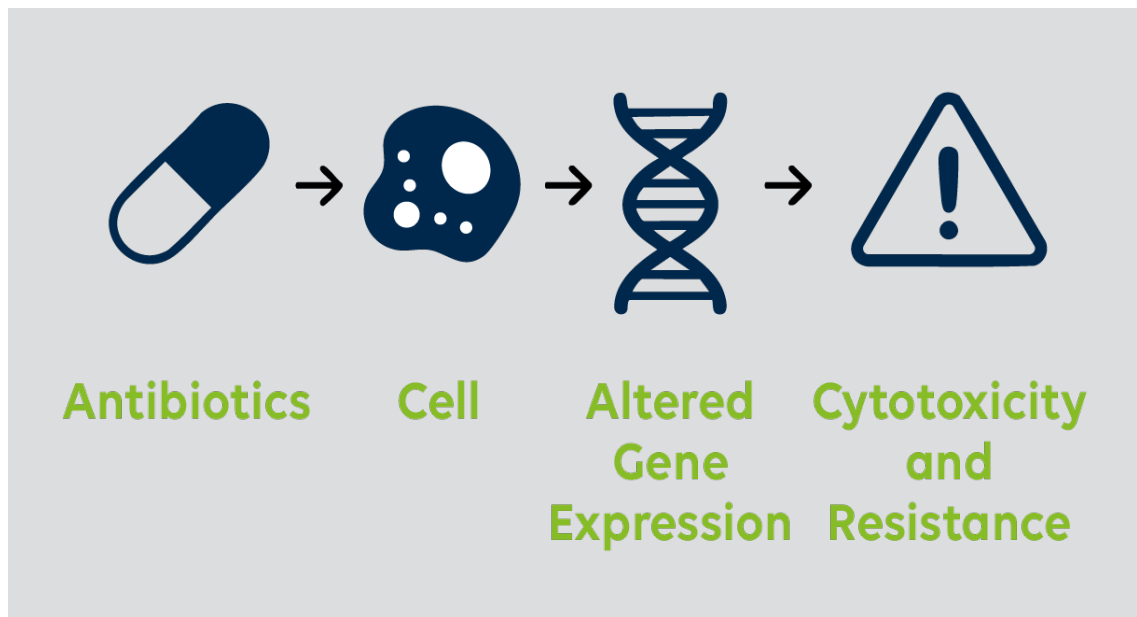


Learn More in Our Knowledge Center

» [Mycoplasma Contamination in Cell Culture](#)

**Note:** Always refer to the product information and safety data sheet for exact concentrations, instructions, and handling tips.

## RISKS OF ANTIBIOTIC USE



### Why relying on antibiotics can backfire:

- » Alters gene expression
- » Can be cytotoxic for sensitive cells
- » Encourages resistance
- » Masks contamination instead of solving it

## COMMON ANTIBIOTICS: CONCENTRATIONS & STORAGE

ANTIBIOTIC	STOCK	WORKING CONC.	NOTES	SOLVENT & STORAGE
<b>Pen-Strep (PS-B)</b>	100× (10,000 U/mL)	1× (100 U/mL / 100 µg/mL)	» Synergistic; lab standard	» Water-soluble; store at -20 °C; avoid repeated freeze-thaw cycles
<b>Gentamicin (GEN-10B)</b>	50 mg/mL	10–50 µg/mL	» Broad-spectrum; dose-dependent toxicity	» Water-soluble; store at -20 °C; stable in aqueous solution
<b>Amphotericin B (AMP-B)</b>	250 µg/mL	0.25–2.5 µg/mL	» Light-sensitive; impacts viability	» Poorly water-soluble; typically formulated in colloidal suspensions with deoxycholate to increase its solubility. Light-sensitive — protect from light; store at -20 °C
<b>MycoXpert (MYX-B)</b>	—	As directed	» Mycoplasma-specific treatment	» Typically stored frozen; may require aliquoting and light-sensitive handling. Always follow manufacturer instructions.









# WHEN TO USE – AND WHEN TO AVOID – ANTIBIOTICS



**USE**



**AVOID**

 Thawing frozen cells	 Sensitive cell lines
 Primary cell culture	 Gene studies
 Shared incubators	 Mycoplasma not ruled out
 Suspected fungal contamination	 Long-term maintenance

Further Resources  
& Quick Links 

## RELATED KNOWLEDGE CENTER ARTICLES

- » [Mycoplasma Contamination in Cell Culture](#)
- » [Cell Culture Contamination: 5 Common Sources](#)

## PRODUCTS IN THIS GUIDE

- » [Penicillin/Streptomycin \(PS-B\)](#)
- » [Gentamicin Solution \(GEN-10B\)](#)
- » [Amphotericin B \(AMP-B\)](#)
- » [Antibiotic/Antimycotic Solution \(AAS-B\)](#)
- » [MycoXpert, Mycoplasma Removal Reagent \(MYX-B\)](#)

**STAY CONTAMINATION-FREE — ONE EMAIL AT A TIME.**

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and smart prevention tools delivered straight  
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