

Cell  
Culture  
Tested

# Antibiotics

## Features / Benefits

Wide range of products suitable for a variety of applications.

Many products available as  $\gamma$ -irradiated, sterile-filtered, aseptically processed, and/or lyophilized.

Each antibiotic is tested for toxicity in a cell culture application at a recommended concentration.

◀ PtK2 cell. Photo courtesy of Claude Chamberland and Natalie Sevier, Center de Recherche de L'Hotel Dieu, Quebec, CANADA



## Cell Culture Tested Antibiotics

Antibiotics, combined with good sterile technique, help prevent microbial contamination. Although they do not meet any of the cell's metabolic needs, they can be an important supplement to cell culture media.

The following table is a guide to selecting appropriate antibiotics and working concentrations. Care should be exercised when using two or more antibiotics in the same culture system. Combined antibiotics frequently exert cytotoxic effects at lower

concentrations than those indicated as appropriate for the individual antibiotics. Refer to a comprehensive pharmacology guide for more information on antibiotic incompatibilities, as well as other properties of antibiotics not included in this table.

Product Name	Product Number	Form <sup>A</sup>	Storage	Solubility	Stability at 37°C <sup>B</sup>	Gram (+) Bacteria	Gram (-) Bacteria	Yeasts	Molds	Mycoplasma	Mode of Action	Suggested Working Conc.
<b>Amphotericin B</b>	<b>A 2411</b>	CT	2-8°C	DMSO, DMF	3 days			■	■		Interferes with the permeability of cell membrane of sensitive fungi by binding sterols	2.5 mg/L
<b>Amphotericin B-Solubilized (Approx. 45%)</b>	<b>A 9528</b>	G	2-8°C	H <sub>2</sub> O	3 days			■	■			5.6 mg/L (of solid)
<b>Amphotericin B-(250 µg/ml solution)</b>	<b>A 2942</b>	AF	-20°C		3 days			■	■			10 ml/L
<b>Ampicillin</b>	<b>A 0166</b>	CT	2-8°C	H <sub>2</sub> O	3 days	■	■				Interferes with the final stage of synthesis of bacterial cell wall	100 mg/L
<b>Ampicillin</b>	<b>A 0797</b>	L,G	2-8°C	H <sub>2</sub> O	3 days	■	■					10 ml/L
<b>Antibiotic-Antimycotic Solution (100X)</b> (10,000 units penicillin, 10 mg streptomycin, and 25 µg amphotericin B per ml)	<b>A 9909</b> <b>A 4668</b> <b>A 5955</b>	AF	-0°C		3 days	■	■	■	■		See action of Amphotericin B, Penicillin and Streptomycin	10 ml/L
<b>Antibiotic-Antimycotic (100X)</b>	<b>A 7292</b>	L,G	-0°C	H <sub>2</sub> O	3 days	■	■	■	■			10 ml/L
<b>Cephalothin</b>	<b>C 3050</b>	CT	2-8°C	H <sub>2</sub> O	3 days	■	■				Inhibits synthesis of cell wall	100 mg/L
<b>Dihydrostreptomycin</b>	<b>D 5155</b>	CT	2-8°C	H <sub>2</sub> O	5 days	■	■				Interferes with bacterial protein synthesis by binding to 30S subunit of ribosomes	100 mg/L
<b>Erythromycin</b>	<b>E 5389</b>	CT	RT	2M HCl, Alcohol	3 days	■	■				Inhibits elongation at transpeptidation step	100 mg/L
<b>Gentamicin Sulfate</b>	<b>G 1264</b>	CT	2-8°C	H <sub>2</sub> O	5 days	■	■			■	Interferes with bacterial protein synthesis by binding to 30S subunit of ribosomes	50 mg/L
<b>Gentamicin Sulfate (10 mg/ml solution)</b>	<b>G 1272</b>	AF	2-8°C		5 days	■	■			■		5 ml/L
<b>Gentamicin Sulfate (50 mg/ml solution)</b>	<b>G 1397</b> <b>G 1522</b>	AF	2-8°C		5 days	■	■			■		1 ml/L
<b>Gentamicin-Glutamine Solution</b> (200 mM L-glutamine, 5 mg gentamicin per ml)	<b>G 9654</b>	AF	-0°C		5 days	■	■			■	See action of Gentamicin sulfate	10 ml/L
<b>L-Glutamine-Penicillin-Streptomycin Solution</b> (200 mM L-glutamine, 10,000 units penicillin, and 10 mg streptomycin per ml)	<b>G 1146</b> <b>G 6784</b>	AF	-0°C		3 days	■	■				See action of Penicillin and Streptomycin	10 ml/L
<b>Kanamycin Monosulfate</b>	<b>K 1377</b>	CT	RT	H <sub>2</sub> O	5 days	■	■			■	Interferes with bacterial protein synthesis by binding to 30S subunit of ribosomes	100 mg/L
<b>Kanamycin Sulfate (10 mg/ml solution)</b>	<b>K 0129</b>	AF	2-8°C		5 days	■	■			■		10 ml/L
<b>Kanamycin Sulfate (50 mg/ml solution)</b>	<b>K 0254</b> <b>K 0379</b>	AF	2-8°C		5 days	■	■			■		2 ml/L
<b>Lincomycin HCl</b>	<b>L 2774</b>	CT	2-8°C	H <sub>2</sub> O	4 days	■					Alters 50S subunit of bacterial ribosomes	100 mg/L
<b>Neomycin Sulfate</b>	<b>N 6386</b>	CT	RT	H <sub>2</sub> O	5 days	■	■				Causes miscoding and inhibits initiation and elongation	50 mg/L
<b>Neomycin Sulfate (10 mg/ml solution)</b>	<b>N 1142</b>	AF	2-8°C		5 days	■	■					5 ml/L
<b>Nystatin</b> (5,000 units nystatin per mg)	<b>N 6261</b>	CT	-0°C	Suspension in H <sub>2</sub> O	3 days			■	■		Interferes with the permeability of the cell membrane of sensitive fungi by binding to sterols	2.5 x 10 <sup>5</sup> U/L (50 mg/L)
<b>Nystatin</b> (240,000 units nystatin per vial)	<b>N 4014</b>	G	-0°C	Suspension in H <sub>2</sub> O	3 days			■	■			2.4 x 10 <sup>5</sup> U/L
<b>Nystatin Suspension</b> (10,000 units nystatin per ml)	<b>N 1638</b>	AF	-0°C		3 days			■	■			24 ml/L
<b>Paromomycin Sulfate</b>	<b>P 5057</b>	CT	RT		5 days	■					Inhibits initiation	100 mg/L
<b>Penicillin-G (potassium salt)</b>	<b>P 7794</b>	CT	RT	H <sub>2</sub> O	3 days	■					Interferes with the final stage of synthesis of the bacterial cell wall	100,000 U/L
<b>Penicillin-G (sodium salt)</b>	<b>P 3032</b>	CT	RT	H <sub>2</sub> O	3 days	■						100,000 U/L
<b>Penicillin-G (sodium salt)</b>	<b>P 3414</b>	L,G	2-8°C	H <sub>2</sub> O	3 days	■						100,000 U/L
<b>Penicillin-Streptomycin Solution</b> (5,000 units penicillin-G and 5 mg streptomycin per ml)	<b>P 0906</b> <b>P 4458</b>	AF	-0°C		3 days	■	■				See action of Penicillin and Streptomycin	20 ml/L
<b>Penicillin-Streptomycin Solution</b> (10,000 units penicillin-G and 10 mg streptomycin per ml)	<b>P 0781</b> <b>P 7539</b> <b>P 4333</b>	AF	-0°C		3 days	■	■					10 ml/L
<b>Penicillin G-Streptomycin</b>	<b>P 3539</b>	L,G	2-8°C	H <sub>2</sub> O	3 days	■	■					10 ml/L
<b>Penicillin-Streptomycin-Neomycin Solution</b> (5,000 units penicillin-G, 5 mg streptomycin, and 10 mg neomycin per ml)	<b>P 9032</b> <b>P 4083</b>	AF	-0°C		3 days	■	■				See action of Penicillin, Streptomycin and Neomycin	10 ml/L
<b>Penicillin G-Streptomycin-Neomycin</b>	<b>P 3664</b>	L,G	2-8°C	H <sub>2</sub> O	3 days	■	■					10 ml/L
<b>Phenoxymethylpenicillinic Acid (potassium) Penicillin V</b>	<b>P 4807</b>	CT	RT	H <sub>2</sub> O	3 days	■					Interferes with final stage of synthesis of the bacterial cell wall	100,000 U/L
<b>Polymyxin B Sulfate</b>	<b>P 4932</b>	CT	2-8°C	H <sub>2</sub> O	5 days		■				Binds to and interferes with the permeability of the bacterial cytoplasmic membrane	50 mg/L
<b>Spectinomycin Dihydrochloride</b>	<b>S 4014</b>	CT	2-8°C	H <sub>2</sub> O		■ <sup>C</sup>	■				Inhibits elongation at transpeptidation step	7.5-20 mg/L
<b>Streptomycin Sulfate</b>	<b>S 9137</b>	CT	2-8°C	H <sub>2</sub> O	3 days	■	■				Binds to 30S subunit to cause misreading	100 mg/L
<b>Streptomycin Sulfate</b>	<b>S 0890</b>	L,G	2-8°C	H <sub>2</sub> O	3 days	■	■					10 ml/L
<b>Tetracycline Hydrochloride</b>	<b>T 7660</b>	CT	-0°C	H <sub>2</sub> O	4 days	■	■				Inhibits elongation by blocking binding of aminoacyl-tRNA to the A-site on the 30S subunit	10 mg/L
<b>Tylosin Tartrate</b>	<b>T 6271</b>	CT	2-8°C	H <sub>2</sub> O	3 days	■				■	Interferes with bacterial protein synthesis by binding to the 50S subunit	8 mg/L
<b>Tylosin Tartrate (8 mg/ml solution)</b>	<b>T 3397</b>	AF	2-8°C		3 days	■				■		1 ml/L

<sup>A</sup> All products are cell culture tested and offered either as a powder (CT); γ-irradiated powder (G); membrane-filtered and aseptically filled solution (AF); or lyophilized (L).

<sup>B</sup> Data from TCA Manual

<sup>C</sup> Gonococcus

## Antibiotic Selection Agents

Product Name	Product Number	Form <sup>A</sup>	Storage	Solubility	Stability at 37°C	Mode of Action	Suggested Working Conc.
Actinomycin D	A 9415	CT	2-8°C	DMSO		Complexes with DNA and interferes with RNA synthesis	1 µg/ml
Bleomycin Sulfate	B 8416	CT	2-8°C	H <sub>2</sub> O		Complexes with DNA, causing strand scissions	10-100 µg/ml
Chloramphenicol	C 3175	L	RT	H <sub>2</sub> O + NaOH	5 days	Inhibits elongation at peptidyl transferase	5 µg/ml
Cycloheximide	C 0934	CT	2-8°C	Ethanol		Inhibits protein synthesis	10 µg/ml
Geneticin <sup>B</sup>	G 9516	CT	2-8°C	H <sub>2</sub> O	8 days	Blocks polypeptide synthesis and inhibits chain elongation	100 - 800 µg/ml
Geneticin <sup>B</sup> (50 mg/ml solution)	G 7034						100 - 800 µg/ml
Hygromycin B	H 3274	L	2-8°C	H <sub>2</sub> O			200 - 400 µg/ml
Mitomycin C	M 4287	CT	2-8°C	H <sub>2</sub> O		Inhibits nucleic acid synthesis	10-50 µg/ml
Mycophenolic Acid	M 3536	CT	2-8°C	Methanol		Blocks inosine monophosphate dehydrogenase in guanosine monophosphate pathway	25 µg/ml
Puromycin•HCl	P 8833	CT	-0°C	H <sub>2</sub> O		Inhibits protein synthesis	10-100 µg/ml

<sup>A</sup> All products are cell culture tested and offered as either a powder (CT); membrane-filtered and aseptically filled solution (AF); or lyophilized (L).

<sup>B</sup> Geneticin is a registered trademark of the GIBCO Division of Life Technologies Inc.

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
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