PurMa Biologics, LLC

PurMa™ Eukaryotic Cell Culture Suited Antibiotics Booklet

Name of Antibiotic	Function
Amphotericin B	Antifungal and anti-yeast by binding to sterols and causing pores in the cell membrane, causing the cells to leak out (1).
Dihydrostreptomycin sesquisulfate	Dysfunctioning the protein synthesis affecting the 30S ribosomal subunit and the 16s rRNA (2).
Erythromycin	Impairs the transpeptidation step, specifically the process of translocation of aminoacyl from the A-site to P-site by binding to the 50s subunit of the bacterial 70s rRNA complex (3).
G-418	It is used as a selection agent (marker) for prokaryotic and eukaryotic cells transfected with an iNOS promoter construct with neomycin resistance gene (4).
Gentamicin Sulfate	It is an aminoglycoside and prevents protein synthesis (5).
Neomycin Sulfate	Causes miscoding and inhibiting the initiation and elongation of protein synthesis by binding to 30S and 50S subunits. This antibiotic also blocks voltage sensitive Ca^{2+} channels (6).

Name of Antibiotic	Function
Nystatin	Nystatin is a polyene antibiotic and prevents cell culture contamination. Nystatin also induces interleukin (IL)-1, IL-8, and tumor necrosis factor α secretion in TLR2-expressing THP1 cells (7).
Paromomycin Sulfate	Inhibits the initiation and elongation of protein synthesis by binding to 16S ribosomal RNA. Paramomycin causes producing defective polypeptide chains and cell death by binding to the A site (8).
Penicillin-G (potassium salt)	Penicillin G inhibits cell wall synthesis through binding to penicillin binding proteins (PBPs), inhibiting peptidoglycan chain cross-linking (9).
Penicillin-G (Sodium salt)	Penicillin G inhibits cell wall synthesis through binding to penicillin binding proteins (PBPs), inhibiting peptidoglycan chain cross-linking (9).
Phenoxymethylpenicillinic Acid (potassium salt) (Penicillin V)	Penicillin G inhibits cell wall synthesis through binding to penicillin binding proteins (PBPs), inhibiting peptidoglycan chain cross-linking (9).
Polymyxin B Sulfate	Polymyxin B Sulfate disrupts the permeability of the cytoplasmic membrane by binding to the lipid A portion of bacterial lipopolysaccharide. This results in disrupting the cytoplasmic membrane by inducing large pores in bacterial walls (10).

Name of Antibiotic	Function
Spectinomycin dihydrochloride pentahydrate	Dysfunctioning the protein synthesis affecting the 30S ribosomal subunit and the 16s rRNA (11).
Streptomycin sulfate	It inhibits the prokaryote protein synthesis by binding to the S12 protein of the 30S ribosomal subunit. This in turn results in preventing the transition from imitation complex to chain-elongating ribosome (12). .
Tetracycline hydrochloride	Tetracycline binds to 30S ribosomes and inhibits protein synthesis by preventing access of aminoacyl tRNA to the acceptor site on the mRNA-ribosome complex.
	Tetracycline also binds to the bacterial 50S ribosomal subunit causes altering the membrane which results in the leaking of intracellular components to leak from bacterial cells (13).
Tylosin Tartrate	Tylosin inhibits bacterial protein synthesis by binding to the large subunit 50S (14).

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