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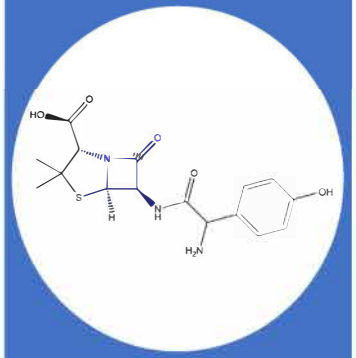
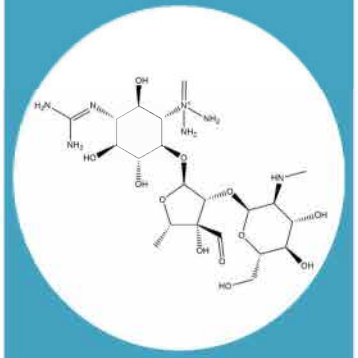
B-lactams



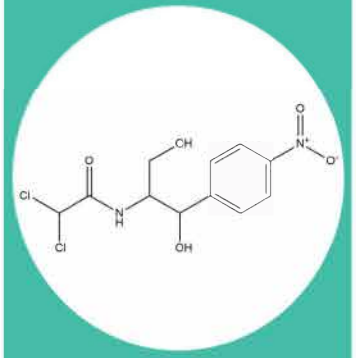
Widely used antibiotics
All contain a beta lactam ring
Ex: penicillins (amoxicillin and flucloxacillin), cephalosporins (cephalexin)
MOA: Prevent bacteria cell wall biosynthesis

Aminoglycosides



Family of over 20 antibiotics
All contain aminosugar substructures
Ex: streptomycin, neomycin, kanamycin, paromycin
MOA: Inhibit the bacterial synthesis of proteins, leading to cell death

Chloramphenicol

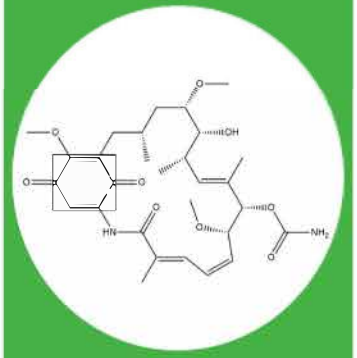


Commonly used in low-income countries
Distinct individual compound
MOA: Inhibit protein synthesis, which prevents growth
Not a first line drug in developed nations anymore due to increased resistance and safety concerns

Glycopeptides

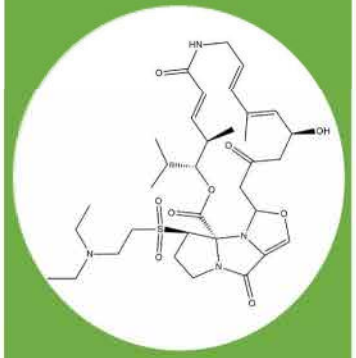
"Drugs of last resort"
Consist of carbohydrate linked to a peptide formed of amino acids
Ex: vancomycin, teicoplanin
MOA: inhibit bacteria cell wall biosynthesis

Ansamycins



Can also demonstrate antiviral activity
All contain an aromatic ring bridged by an aliphatic chain
Ex: geldanamycin, rifamycin, naphthomycin
MOA: Inhibit bacterial synthesis of RNA, leading to cell death

Streptogramins



2 groups of antibiotics that act synergistically
Combination of 2 structural differing compounds, from groups denoted A&B
Ex: Pristinamycin IIA & IA
MOA: Inhibit the synthesis of proteins by bacteria, leading to cell death

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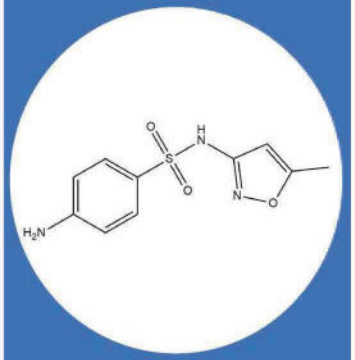
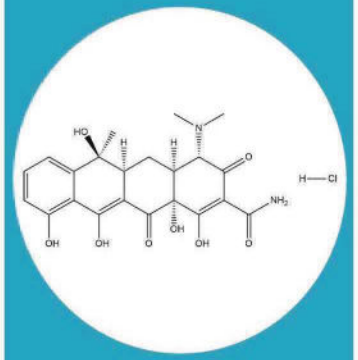
Sulfonamides



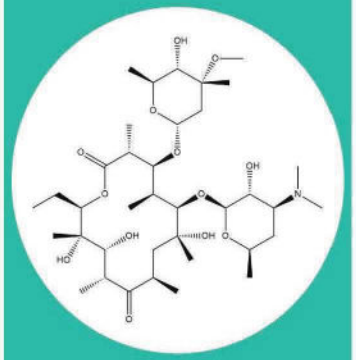
1st commercial antibiotics
Contain sulfonamide group
Ex: Prontosil, sulfanilamide, sulfadiazine, sulfisoxazole
MOA: Prevent bacterial growth and multiplication (do not kill bacteria). Cause allergic reactions in some patients

Tetracyclines



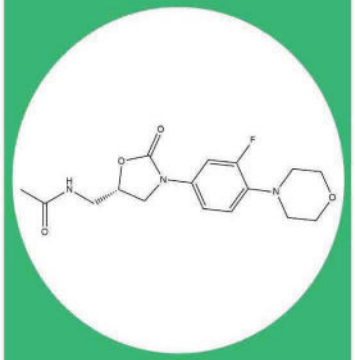
Becoming less popular due to increased resistance
All contain 4 adjacent cyclic hydrocarbon rings
Ex: Tetracycline, doxycycline, limecycline, oxytetracycline
MOA: Inhibit protein synthesis by bacteria, preventing growth

Macrolides



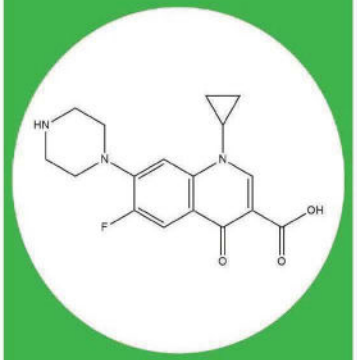
2nd most prescribed antibiotics
All contain a 14-, 15-, or 16- membered macrolide ring
Ex: Erythromycin, clarithromycin, azithromycin
MOA: Inhibit protein synthesis by bacteria, occasionally leading to cell death

Oxazolidinones



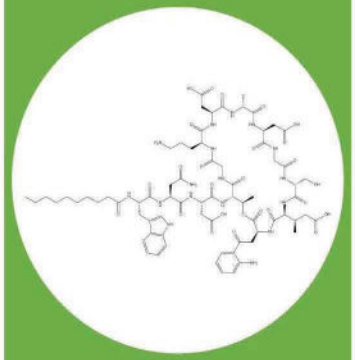
Potent antibiotics, typically used as drugs of last resort
All contain 2-oxazolidone somewhere in structure
Ex: Linezolid, posizolid, tedizolid, cycloserine
MOA: Inhibit synthesis of proteins by bacteria preventing growth

Quinolones



Resistance evolves rapidly
All contain fused aromatic rings with a carboxylic acid group attached
Ex: Ciprofloxacin, levofloxacin, trovafloxacin
MOA: Interfere with bacteria DNA replication and transcription

Lipopeptides



Instances of resistance are rare
All contain a lipid bonded to a peptide
Ex: daptomycin, surfactin
MOA: Disrupt multiple cell membranes functions, leading to cell death

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