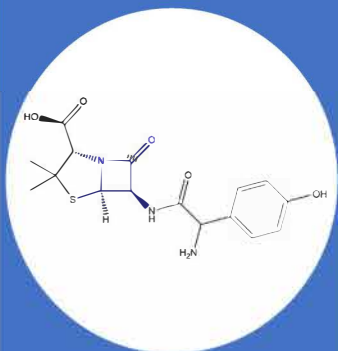
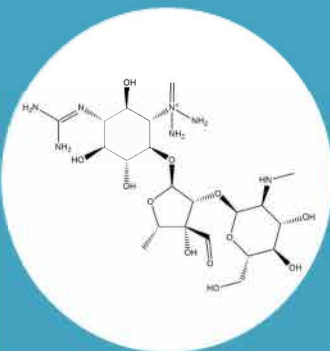


B-lactams



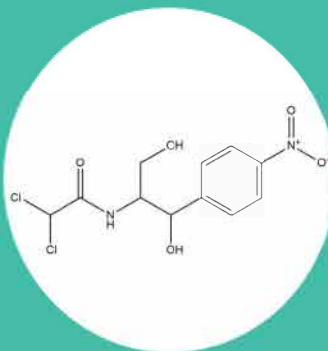
Widely used antibiotics
All contain a beta lactam ring
Ex: penicillins (amoxicillin and flucloxacillin), cephalosporins (cephalexin)
MOA: Prevent bacteria cell wall biosynthesis

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



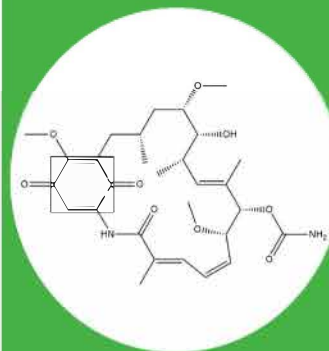
Commonly used in low-income countries
Distinct individual compound
MOA: Inhibit protein synthesis, which prevents growth
Not a first line drug in developed nations anymore due to increased resistance and safety concerns

Glycopeptides



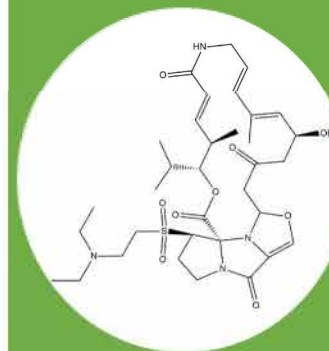
“Drugs of last resort”
Consist of carbohydrate linked to a peptide formed of amino acids
Ex: vancomycin, teicoplanin
MOA: inhibit bacteria cell wall biosynthesis

Ansamycins



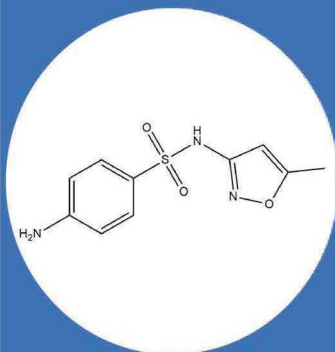
Can also demonstrate antiviral activity
All contain an aromatic ring bridged by an aliphatic chain
Ex: geldanamycin, rifamycin
MOA: Inhibit bacterial synthesis of RNA, leading to cell death

Streptogramins



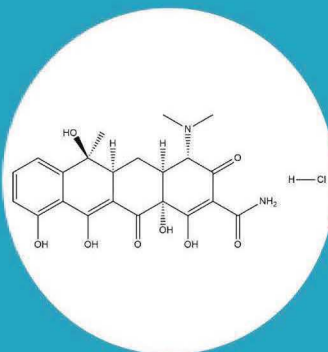
2 groups of antibiotics that act synergistically
Combination of 2 structural differing compounds, from groups denoted A&B
Ex: Pristinamycin IIA & IA
MOA: Inhibit the synthesis of proteins by bacteria, leading to cell death

Sulfonamides



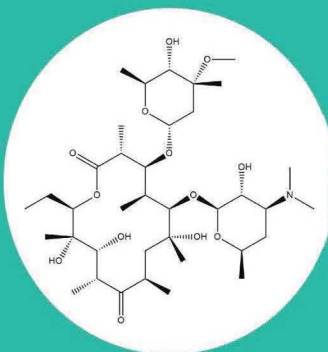
1st commercial antibiotics
 Contain sulfonamide group
 Ex: Prontosil, sulfanilamide, sulfadiazine, sulfisoxazole
 MOA: Prevent bacterial growth and multiplication (do not kill bacteria). Cause allergic reactions in some patients

Tetracyclines



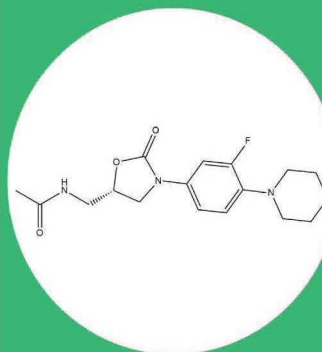
Becoming less popular due to increased resistance
 All contain 4 adjacent cyclic hydrocarbon rings
 Ex: Tetracycline, doxycycline, limecycline, oxytetracycline
 MOA: Inhibit protein synthesis by bacteria, preventing growth

Macrolides



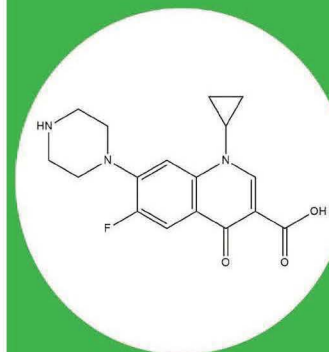
2nd most prescribed antibiotics
 All contain a 14-, 15-, or 16- membered macrolide ring
 Ex: Erythromycin, clarithromycin, azithromycin
 MOA: Inhibit protein synthesis by bacteria, occasionally leading to cell death

Oxazolidinones



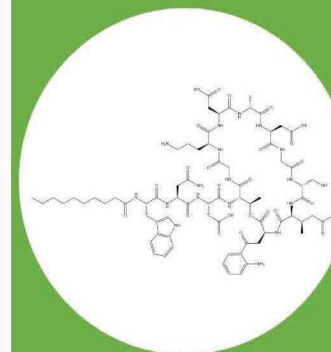
Potent antibiotics, typically used as drugs of last resort
 All contain 2-oxazolidone somewhere in structure
 Ex: Linezolid, posizolid, tedizolid, cycloserine
 MOA: Inhibit synthesis of proteins by bacteria preventing growth

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