

Mycobacterium tuberculosis → enters the lungs and phagocytosed by alveolar macrophages

antigen specific T cells are recruited



Bacterium lives within macrophage due to protection by mycolic acid coat

Infection is temporarily controlled

granuloma formation contains but doesn't cure

Non-infectious but visible on CXR (LATENT)

can reactivate → irreversible lung damage

FIRST LINE

Drug-resistant TB
 Multi-drug → Isoniazid + Rifampin
 Extensively → add 2 classes of 2nd line
 Totally → + others

Cell Wall synthesis INHIBITORS

Ethambutol

-inhibits arabinosyltransferase
 ↳ synthesis of galactan portion of cell wall

reversible optic neuritis

Cycloserine -inhibits enzymes responsible for peptidoglycan synthesis

ATP SYNTHASE INHIBITOR

Bedaquiline

reduces effectiveness when used w/ rifampin

Pyrazinamide

MOA - unclear

• pH trapping within bacteria ↳ disruption of energetics

Hepatotoxicity → drug induced hepatitis

Mycolic Acid Synthesis Inhibitors

Isoniazid

activated by KatG, inhibits InhA

hepatotoxicity (especially w/ alcohol)

peripheral neuropathy (VB6 deficiency)

Delamanid

no CYP-associated drug interactions

Pretomanid

DNA SYNTHESIS INHIBITORS

Fluoroquinolones inhibit DNA gyrase (topoisomerase enzyme required for bacterial DNA synthesis)

avoid in pregnancy

Levofloxacin
Moxifloxacin

RNA POLYMERASE INHIBITORS

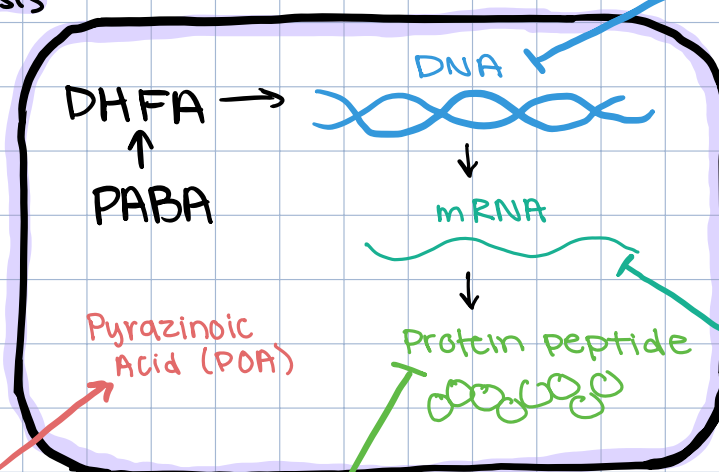
weakens bacterial RNA by inhibiting transcription
 nephrotoxicity/nephritis

Rifampin / Rifampicin

activates cytochromes - reduces effectiveness of other drugs
 ↳ HIV proteases (syndemic)

Rifabutin

orange coloration of skin, urine, feces, saliva, tears



PROTEIN SYNTHESIS INHIBITORS

Aminoglycosides

Streptomycin

Amikacin

Kanamycin

Oxazolidones

Linezolid