

What is the role of efflux pumps in bacterial resistance?

- A. Enzymatically degrade antibiotics
- B. Prevent antibiotic entry into the cell
- C. Actively transport antibiotics out of the cell
- D. Modify antibiotic binding sites

A young child presents with meningitis caused by *Streptococcus pneumoniae*. The strain is resistant to penicillin. What is the most likely resistance mechanism?

- A. Alteration of the 30S ribosomal subunit
- B. Beta-lactamase production
- C. Modification of penicillin-binding proteins
- D. Decreased membrane permeability

remember:

β -lactamase production is most common for gram -ve bacteria
PBP modification is nearly exclusive to gram +ve bacteria

Which of the following strategies is most effective in reducing the development of antimicrobial resistance?

- A. Using broad-spectrum antibiotics for all infections
- B. Encouraging over-the-counter antibiotic access
- C. Completing prescribed antibiotic courses and limiting unnecessary use
- D. Relying solely on vaccines to control bacterial infections

What is the primary mechanism of resistance to fluoroquinolones in bacteria?

- A. Production of efflux pumps
- B. Modification of topoisomerase and DNA gyrase enzymes
- C. Enzymatic inactivation of the antibiotic
- D. Alteration of the 30S ribosomal subunit

remember from pharma:

fluoroquinolones inhibit topoisomerase

Which of the following bacteria is commonly associated with extended-spectrum beta-lactamase (ESBL) production?

- A. *Escherichia coli*
- B. *Streptococcus pneumoniae*
- C. *Mycobacterium tuberculosis*
- D. *Clostridium difficile*

Not mentioned outright, but we conclude this answer because E. coli is part of ESKAPEE

* I double checked this from GPT

Which of the following is NOT part of the ESKAPEE group of pathogens?

- A. *Enterococcus faecium*
- B. *Escherichia coli*
- C. *Klebsiella pneumoniae*
- D. *Salmonella Typhi*

↓
S. aureus