

TOPIC:INHIBITORS OF CELL WALL SYNTHESIS: POLYPEPTIDE ANTIBIOTICS & ISONIAZID

Polypeptide Antibiotics & Isoniazid

◆ Some antibiotics that target cell wall synthesis do _____ contain β -lactam ring.

◆ **Polypeptide Antibiotics:** bactericidal drugs that target cell walls.

Bacitracin: available in _____ first aid ointment. **Gram (+)** _____ **Gram (-)** _____

Vancomycin: _____ type. **Gram (+)** _____ **Gram (-)** _____

- Very narrow spectrum but effective against _____.

◆ **Antimycobacterial Antibiotics:** block the synthesis of the mycolic acid component of the cell wall.

Isoniazid (INH):

- _____ spectrum \rightarrow _____ effective on mycobacteria.
- Treats _____.

EXAMPLE

Indicate whether these statements apply to β -lactams (B), polypeptide antibiotics (P), or both (BP):

1	Contain a central ring structure that disrupts the cross-linking of NAM subunits in cell walls:	_____
2	Are bactericidal because they disrupt the cell wall, leading to cell lysis:	_____
3	Are large peptide molecules that do not have a ring structure as their core structural feature:	_____
4	Prevents the synthesis of cell walls (instead of destroying them once already produced):	_____

PRACTICE

Which of the following drugs is available without a prescription in the US and targets cell wall synthesis?

- a) Vancomycin.
- b) Bacitracin.
- c) Neomycin.
- d) Isoniazid.

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PRACTICE

A patient presents with a cough that has lasted 5 weeks, accompanied by blood in the sputum and fever.

The pathogenic microbe is determined to be bacterial and is only visible with an acid-fast stain. Based on your knowledge of staining techniques and bacterial cell structure, which antibacterial drug would be appropriate?

- a) Vancomycin.
- b) Bacitracin.
- c) Monobactam.
- d) Isoniazid.