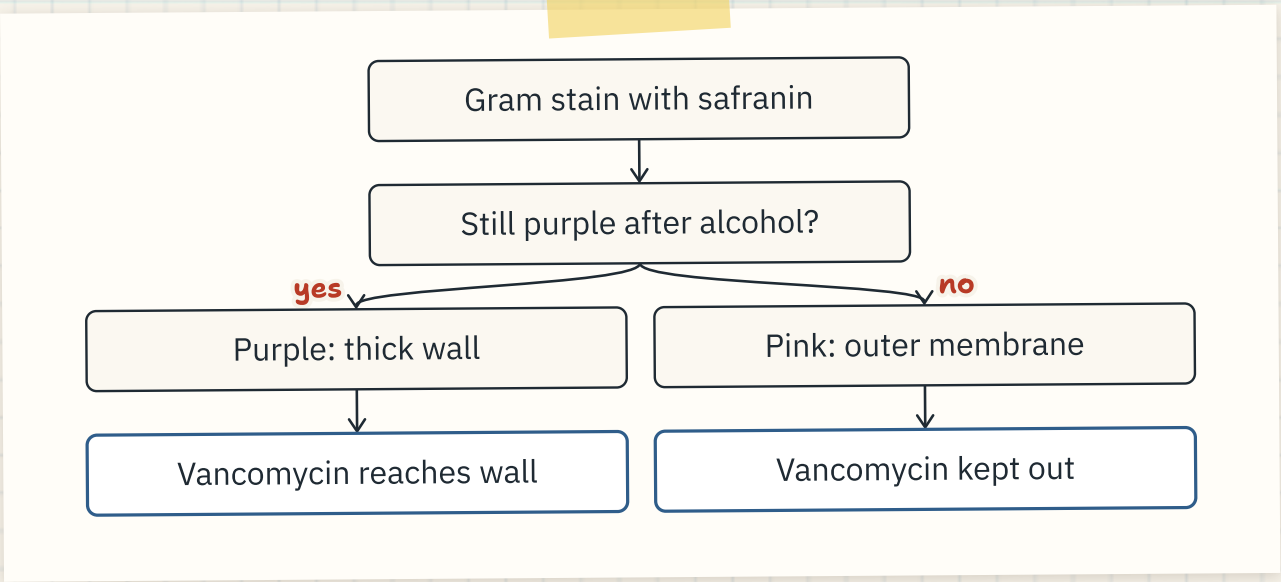
Gram-positive vs gram-negative walls

Predict the Gram stain and vancomycin access



Step by step

1. Crystal violet
2. Iodine locks in the complex
3. Alcohol or acetone decolourises
4. Safranin counterstain (pink)

Feature	Gram-positive	Gram-negative
Peptidoglycan	Thick	Thin
Teichoic acids	Present	Not a feature
Outer membrane (LPS)	No	Yes
Gram stain	Purple	Pink
Vancomycin	Reaches the wall	Kept out

Envelope and consequences

Rule of thumb

Positive: one membrane, thick wall
Negative: two membranes, thin wall
The stain reads the wall, not the dye

Exam traps

- Too much alcohol makes gram-positive cells look pink.
- Shape alone does not decide it; stain colour does.
- Mycobacteria stain poorly; Mycoplasma has no wall.

Gram-positive vs gram-negative cell walls

Video, written lesson, practice question and sources: medservatory.com/usmle-step-1/microbiology/gram-positive-vs-gram-negative-cell-walls

For exam study only, not medical advice. Follow local guidelines and your lab's ranges.
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