

Clinical Microbiology: Streptococcus and Enterococcus

Microbiology · Answer Key · 15 Questions

1. What is the primary characteristic of the Gram stain for the genus Streptococcus?

- A) Gram-negative rods
- B) Gram-positive cocci in chains**
- C) Gram-positive diplococci
- D) Gram-negative spirilla

2. Which test is used to differentiate Streptococcus and Enterococcus from the catalase-positive Staphylococci?

- A) Oxidase test
- B) Coagulase test
- C) Catalase test**
- D) Urease test

3. What does the Lancefield grouping system classify based on?

- A) Hemolysis pattern
- B) Cell-wall carbohydrate antigens**
- C) Morphology
- D) Sugar fermentation

4. Which type of hemolysis is characterized by complete lysis of red blood cells and a clear area around the colony?

- A) Alpha
- B) Beta**
- C) Gamma
- D) Alpha-prime

5. Which organism is the primary cause of neonatal sepsis and meningitis?

- A) *S. pyogenes*
- B) *S. pneumoniae*
- C) *S. agalactiae***
- D) *E. faecalis*

6. Which virulence factor of *S. pyogenes* is responsible for its antiphagocytic properties and is a major determinant of virulence?

- A) M protein**
- B) Hyaluronidase
- C) Streptokinase
- D) DNase

7. Which test demonstrates the synergistic effect of the CAMP factor produced by *S. agalactiae*?

- A) Optochin test
- B) CAMP test**
- C) Bile-esculin test
- D) Bacitracin test

8. Which species is known for being lancet-shaped diplococci and is optochin-susceptible?

- A) *S. pyogenes*
- B) *S. agalactiae*
- C) *S. pneumoniae***
- D) *E. faecium*

9. What is the key distinguishing feature of *Enterococcus* regarding its environment?

- A) Strict aerobe
- B) Salt tolerant (6.5% NaCl)**
- C) Requires high CO₂
- D) Acidophile only

10. Which test is positive for both *S. pyogenes* and *Enterococcus*?

- A) PYR hydrolysis**
- B) Hippurate hydrolysis
- C) Optochin sensitivity
- D) Bacitracin sensitivity

11. What does the Neufeld (Quellung) reaction confirm?

- A) Hemolysis
- B) Capsular swelling**
- C) Catalase production
- D) Salt tolerance

12. Which toxin is associated with the skin rash of scarlet fever?

- A) Streptolysin O
- B) Streptokinase
- C) Streptococcal pyrogenic exotoxin**
- D) Hyaluronidase

13. Which organism is intrinsically resistant to vancomycin?

- A) *S. pyogenes*
- B) *E. faecalis*
- C) *Pediococcus***
- D) *S. agalactiae*

14. What is the primary clinical significance of the Viridans streptococci group?

- A) Neonatal meningitis
- B) Subacute bacterial endocarditis**
- C) Toxic shock syndrome
- D) Impetigo

15. Which enzyme, produced by *S. pyogenes*, acts as a spreading factor by breaking down hyaluronic acid?

- A) Streptodornase
- B) Hyaluronidase**
- C) Protease
- D) Neuraminidase