

key

1. *Shigella* & dysentery
2. Non-lactose fermenter. Salmonella, Proteus.
- 3.

also  
non fermenter

4. The hemorrhagic and invasive strains of *E. coli*
5. Blood agar, Macconkey agar, Salmonella-Shigella agar (SS agar), DCA agar: Form non-lactose fermenting, circular, convex, translucent colonies on Macconkey agar.
6. *Shigella*. Less than 10 organisms are required for *Shigella* to cause infection because it is very resistant to stomach acid.
7. Four Fs: fingers, food, flies, feces
8. Treatment includes fluid/electrolyte replacement and antibiotics such as trimethoprim-sulfamethoxazole (TMP-SMX) and ciprofloxacin. Antidiarrhea medications such as loperamide can prolong illness or worsen the severity and should be avoided.
9. It lacks the H antigen/flagellar antigen that codes for motility.

Alkaline slant or  
acidic butt.

*Shigella*

10.

→ Invasive Strains of E. coli  
 → Haemorrhagic Strains of E. coli  
 → Shigella

Imp

Traveler

A photographer for National Geographic returning from Thailand develops a fever and abdominal cramps on the plane. By the time the plane lands, he suffers from bloody diarrhea. His fever peaks at 40°C. The doctor decides to do an endoscopy exam and makes a diagnosis based on the hemorrhagic mucosa and ulcerations observed in the distal colon. Gram staining and TSI showed the following results.



dysentery Shigella

1. Name the disease and the causative agent.
2. Is it a lactose fermenter? Name the lactose fermenters and Lactose non-fermenters.
3. What is the pathogenesis of the disease?
4. Name other organisms causing bloody diarrhea & produce similar toxin? E. coli
5. Name the media used to culture these bacteria and the culture characteristics.
6. Why is the bacterium more virulent than Salmonella?
7. How is the disease transmitted? HF, finger, Food, Feaces, Flies
8. What is the treatment?
9. Why is it non-motile? lack of flagellar Antigen
10. Name the different species of this bacterium and their characteristic maltose fermentation.

Imp

Pathogenesis:

Shiga toxin  
 ↓  
 Invasive mucosal cells of colon and terminal ileum

Species:

- Shigella dysenteriae
- S. flexneri
- S. boydii
- S. sonnei.

Local Inflammation

Ulceration occurs

enter bloodstream → bloody Diarrhea.