

Salmonella

Salmonella (*typhi*, *paratyphi*, *enteritidis*, *cholerasuis* and *typhimurium*)

Microscopically:

Rod-shaped, G – ve, no spore, motile (flagella)



Macroscopically: Shiny, convex colonies

Mac Conkey

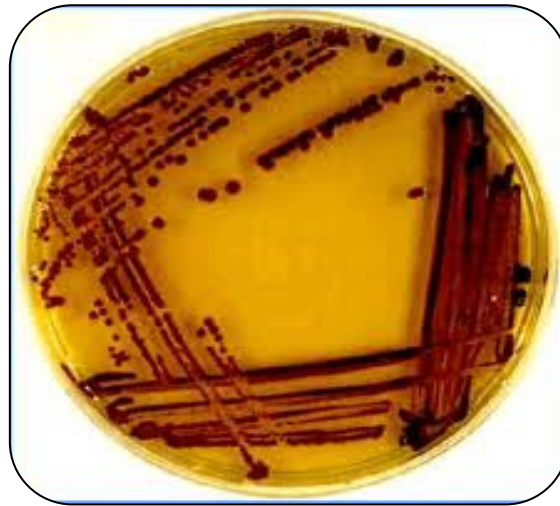
Transparent with dark center

SS agar

Clear, transparent + black center if H₂S

Hektoen enteric (HE)

Blue-green to blue colonies



Biochemical tests:

TSI (Kliglar Iron)	S.typhi	K/A	no gas /H ₂ S	} glucose fermenter
	S.paratyphi	K/A	gas /H ₂ S	

I M V C

– + – + Urease - ve Oxidase - ve Catalase + ve

Pathogenesis:

1) Salmonellosis:

Diarrhea → muco-purulent and bloody May develop → Reiter's syndrome

2) Typhoid fever:

Inhibit in gall bladder + inflame lymphoid tissue of intestine (Peyer's patch) → perforation at distal ileum.

Meningitis in children, osteitis, etc.

Dx:

Clinical: High fever + anorexia + vomiting + abdominal pain .

Malaise, headache, cough and **Rose spots** on abdomen (hepatosplenomegaly)

Blood test: leukopenia, lymphocytosis.

Blood, bone marrow or stool **cultures** .

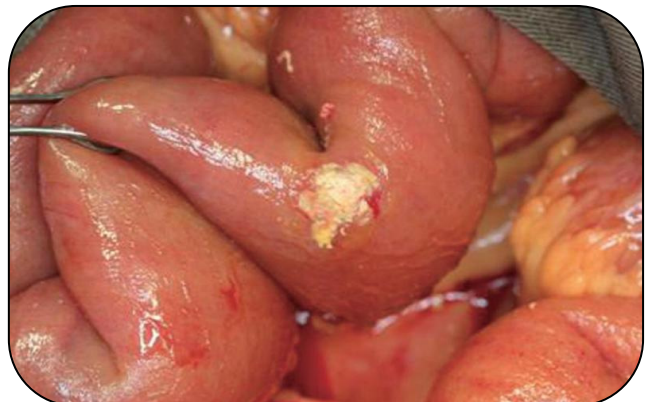
Widal test

Rx:

Oral rehydration + antibiotic (ceftriaxone or cefotaxime ,ampicillin, chloramphenicol) + antipyretic ...

Cholecystectomy for carriers

Surgery – immediate for perforated viscus.



Shigella

- Serogroup A: [S. dysenteriae](#)
- Serogroup B: [S. flexneri](#)
- Serogroup C: [S. boydii](#)
- Serogroup D: [S. sonnei](#)

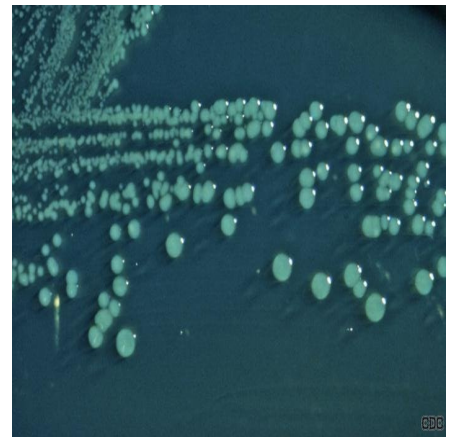
Under microscope: Rod shape (bacilli), G –ve (pink color), non-motile, no spore, no capsule.

Grossly: regular moist colonies

Mac Conkey & SS agar → colorless colonies

HE agar → green colonies

DCA agar → colorless



Biochemical reactions:

TSI K/A no gas / no H₂S } Glucose fermenter except *S. sonnei* A/A

I M V C

– + – –

Urease – ve

Oxidase –ve

Pathogenesis:

(Shiga or enterotoxin)

Shigella ⇒ **Shigellosis** (bacillary dysentery – bloody diarrhea)

⇒ **HUS** – Hemolytic Uremic syndrome

Dx:

Dehydration, ↑ H.R, ↓ B.P, Abdominal tenderness, ↑ W.B.C, Stool culture.

Rx:

- 1- Replacing fluids and salts and palliative care.
- 2- Co-Trimoxazole, ciprofloxacin, or furazolidone

Dr.Safeen O.M.

School Of Medicine

Salmonella

Motile

K/A H₂S

Colonies +black center

Shigella

Non-motile

K/A no H₂S

No black center