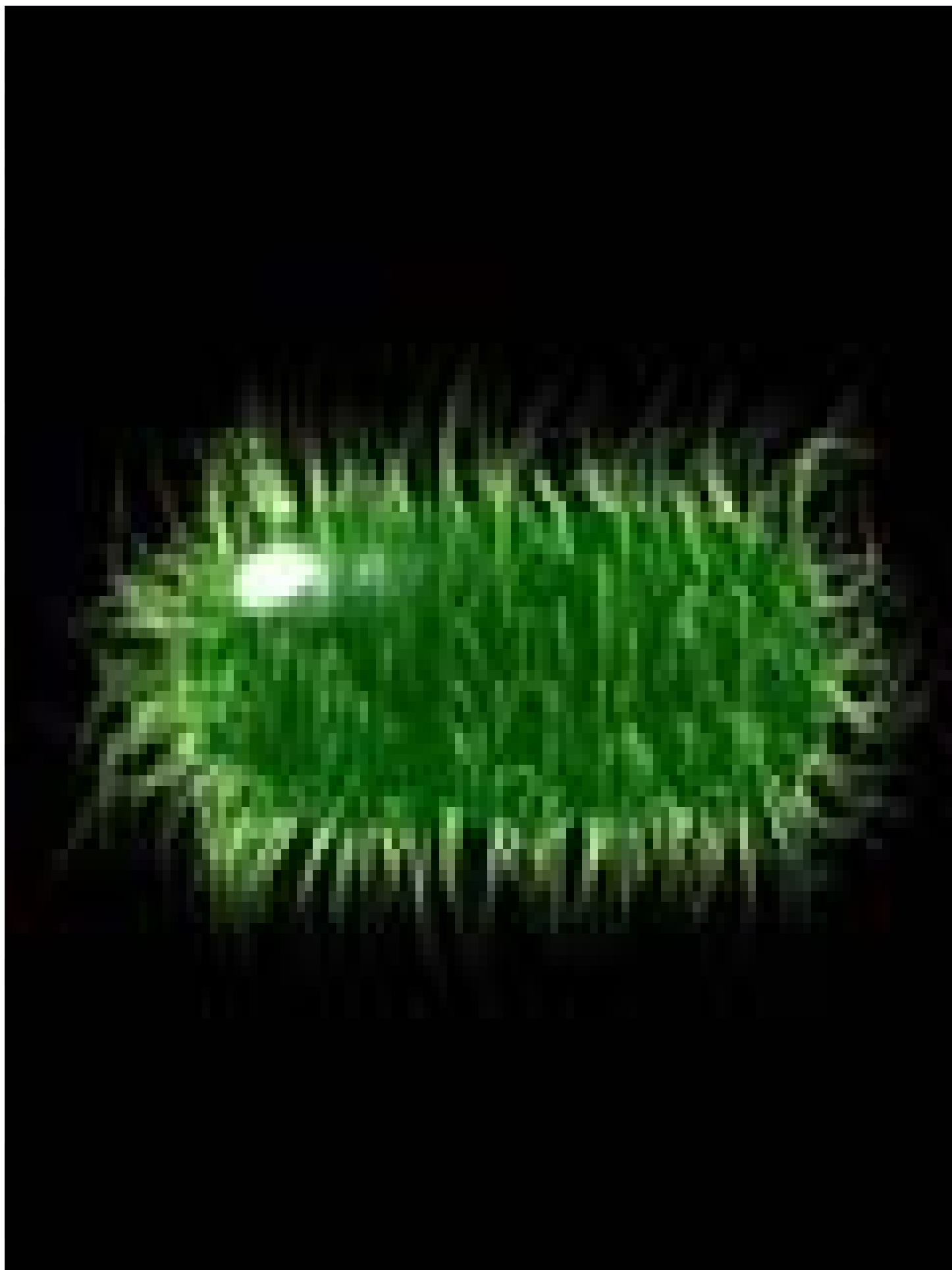


**SHIGELLA**

**BACILLARY  
DYSENTERY  
SHIGELLOSIS**



# CHARACTRE

- ENTEROBACTERIACIAE
- GRAM – NEGATIVE BACILLI
- NON – MOTILE
- NON – LACTOSE FERMENTER
- H<sub>2</sub>S – NEGATIVE
- CAPSULE (K-ANTIGEN)
- O – SOMATIC ANTIGEN

# SPECIES

- SH. DYSENTERIAE . → 10 – SEROTYPE  
(MOST SERIOUS)
- SH. FLEXENRI . → 6 – SERO.  
(DEV. NATIONS)
- SH. BOYDII . → 15 - SERO.
- SH . SONNEI . → 1 - SERO  
(UNITED STATES)

# BACILLARY DYSENTERY

- ACUTE BACTERIAL INFECTION OF THE INTESTINE (COLON)
- CAUSED BY ALL SPECIES
- VARY IN INTENSITY
- MAJOR CAUSE OF DIARRHEAL DISEASE AND MORTALITY
- DEVELOPED COUNTRIES
  - (POOR HYGIENE , NUTRITION)
  - (CONTAMINATED FOOD , WATER)

# EPIDEMIOLOGY

- HUMAN
- FECAL – ORAL ROUTE  
( water , food , feces , flies )
- PERSON – PERSON CONTACT
- CHILDHOOD
- ID : 10 - 100 ORGANISMS
- HIGH INFECTIVITY
- IP - 1–4 DAYS
- SOURCE - CASES , CARRIERS
- DAYCARE CENTERS, MENTAL INST.  
TRAVEL , HOMOSEXUEAL

# CLINICAL PICTURE

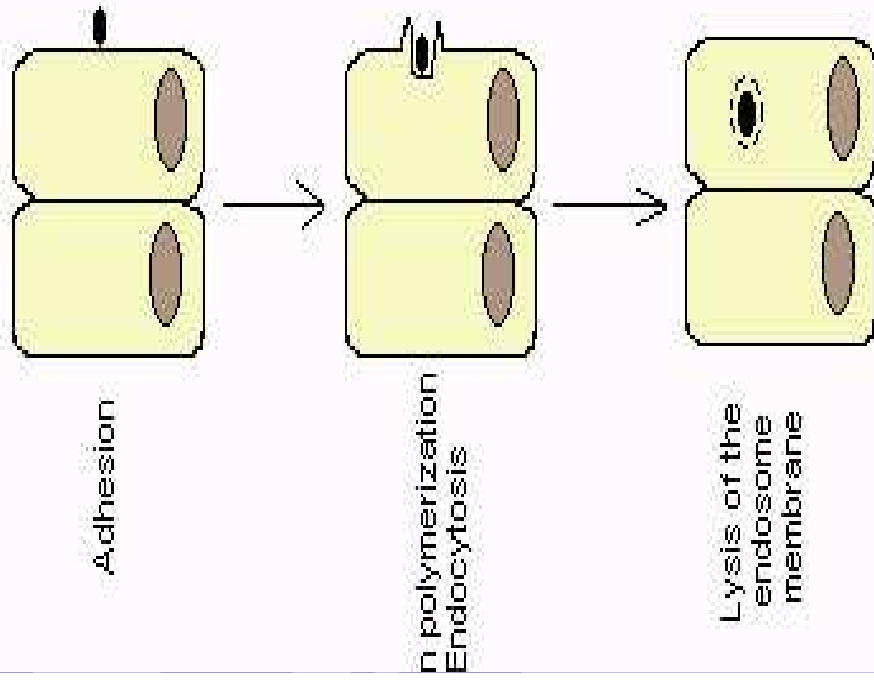
- FEVER
- BLOODY DIARRHOEA
- ABDOMINAL CRAMPS
- TENESMUS
- MUCUS , PUS
- CONVULSIONS
- MILD INFECTION :WATERY STOOL
- BACTEREMIA - RARE
- REITER,S SYNDROME
- HEMOLYTIC – UREMIC SYNDROME

# PATHOGENESIS

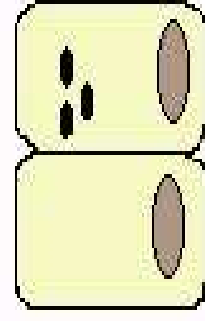
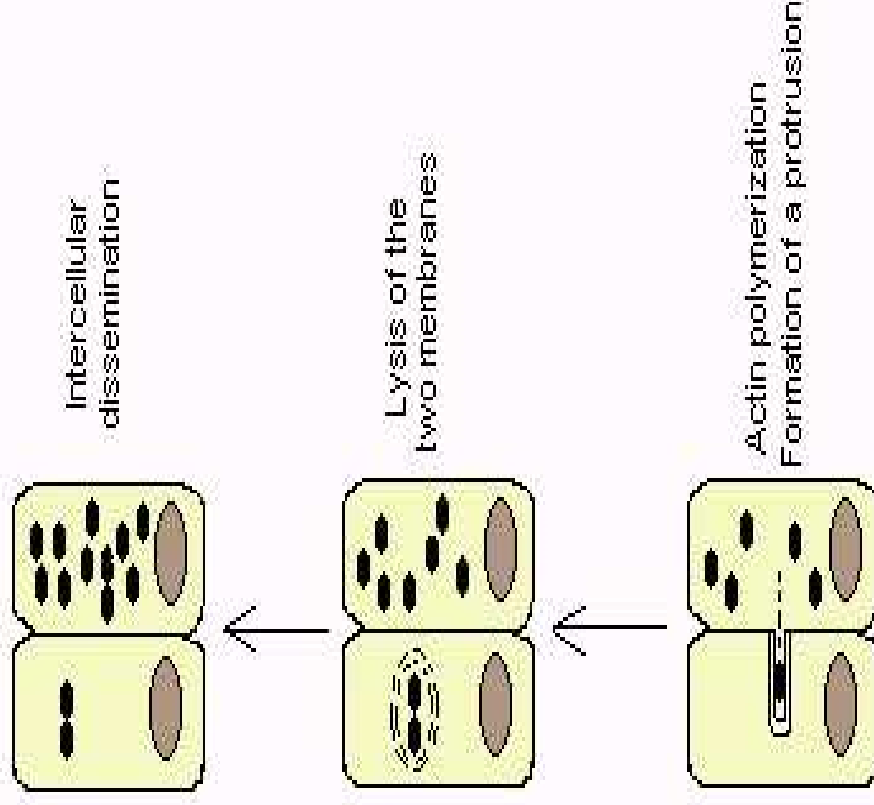
- ENTEROINVASIVE
  - COLONIC MUCOSA
  - TISSUE DAMAGE → ULCERS
- EXOTOXIN (SHIGA TOXIN) – sh. dysenteriae
  - ENTEROTOXIN (ABSORPTION)
  - CYTOTOXIN ( A – 5 B)
  - NEUROTOXIN (NERVE DAMAGE)
- B - SUBUNIT → GLYCOLIPIDS
- A – SUBUNIT → 60S RIBOSOMAL SUBUNIT. INACTIVATION → INHIBITION OF PROTEIN SYNTHESIS . – CELL DEATH

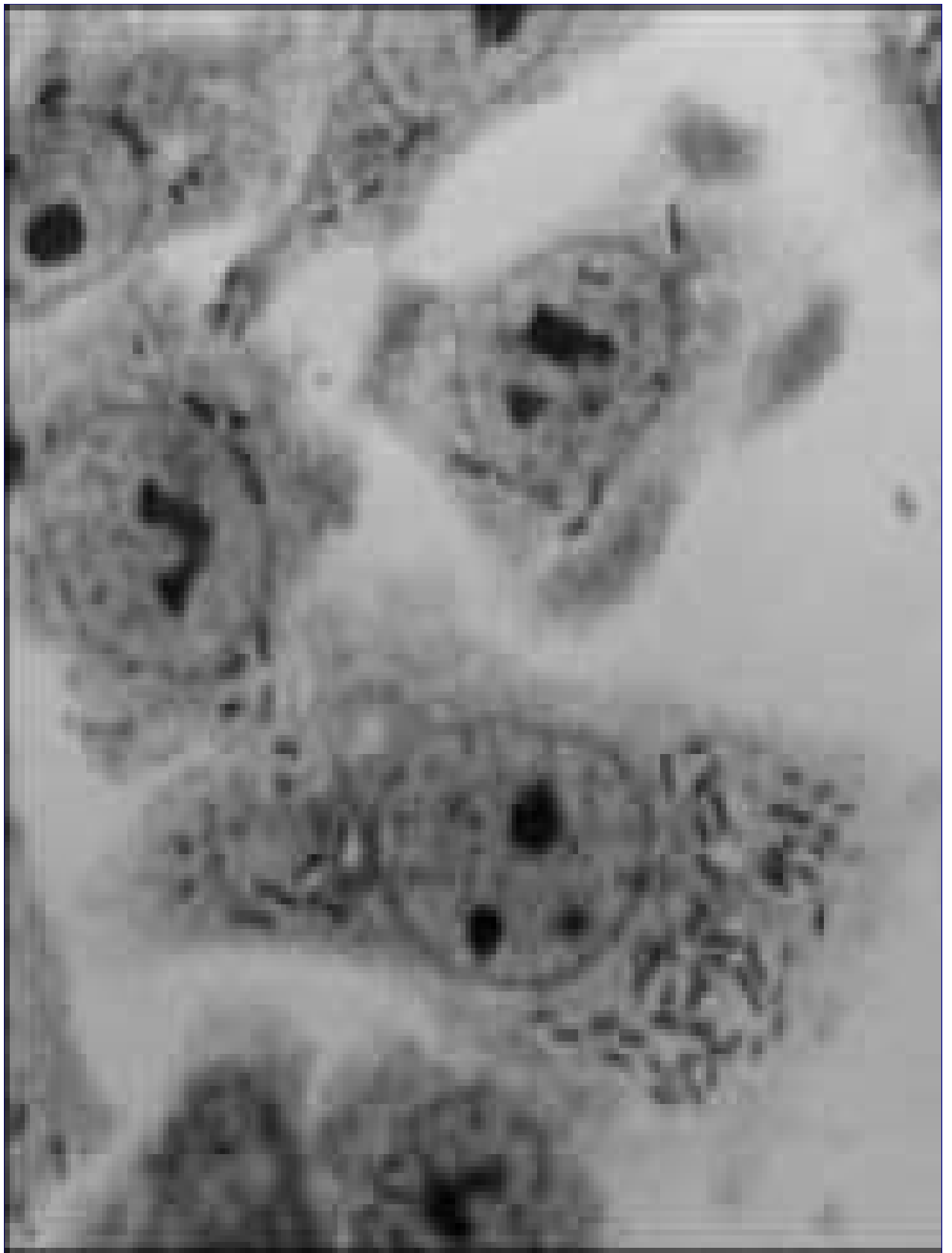


## Entry



## Dissemination





# DIAGNOSIS

1 - CULTUR

STOOL

RECTAL SWBS

–MACCONKEY AGAR → NLF

–DCA , XLD

–SELENITE F BROTH

2- MICROSCOPY : LEUCOCYTES , RBC

3- BIOCHEMICAL : TSI - NO GAS, H<sub>2</sub>S ,  
ACID

4- NON MOTILE

5- SEROLOGY TEST : SLID

uninoculated control

*Pseudomonas aeruginosa*

*Shigella sonnei*

*Salmonella typhi*

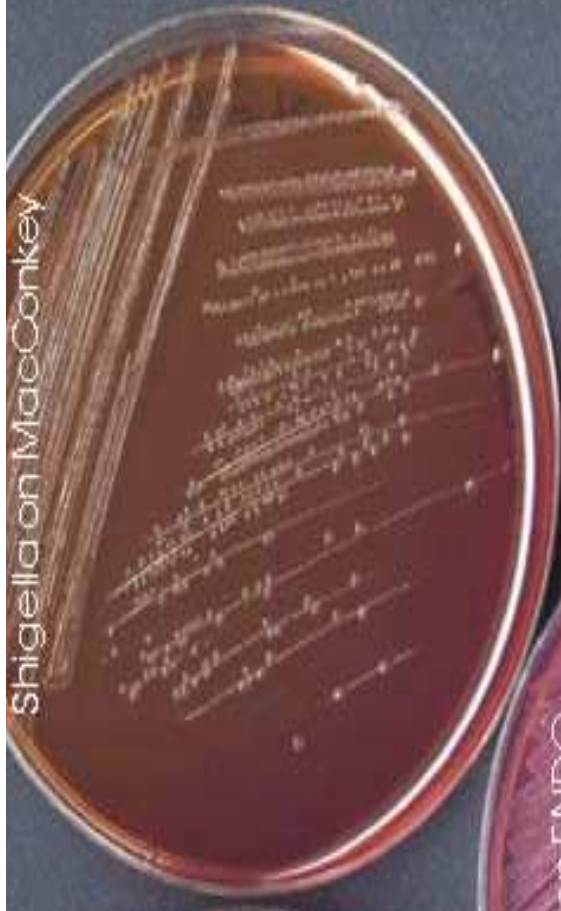
*Escherichia coli*

*Proteus mirabilis*

Shigella on EMB



Shigella on MacConkey



Shigella on ENDO



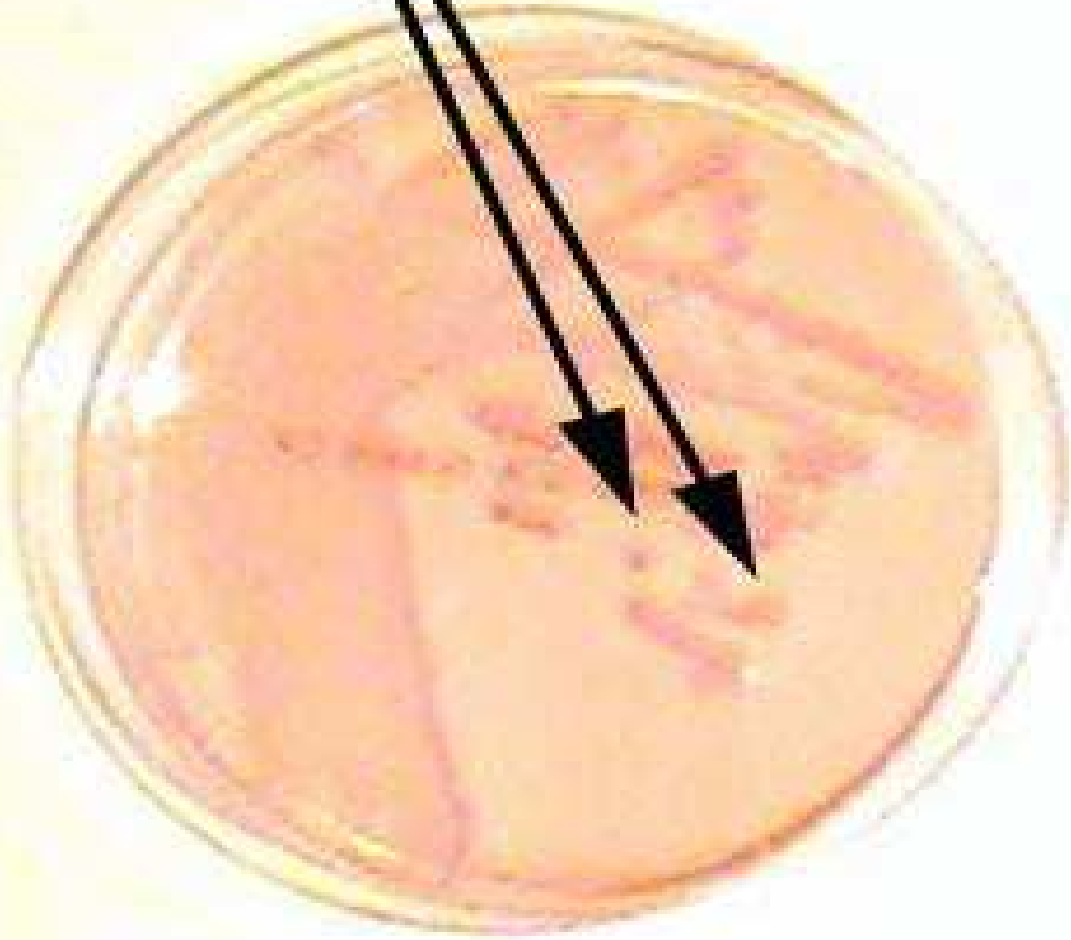
Shigella on S-S agar



Shigella on Hektoen



Colonies of non-lactose  
fermenter



ASM MicrobeLibrary.org © Johnson

# TREATMENT

- MILD ILLNESS → REHYDRATION
  - SHORT ( 48 – 72 h)
  - SH . SONNEI
- BACILLARY DYSENTERY
  - ANTIMICROBIAL THERAPY ( SHORTEN THE DURATION , PREVENT SPREAD)
    - AMPICILLIN (PLASMID RESISTANCE)
    - COTRIMOXAZOLE (RES.)
    - CIPROFLOXACIN
    - CEFTRIAXONE



# PREVENTION

- SUPPLY OF PURE WATER
- PERSONAL HYGIENE ( HANDS)
- SEWAGE DISPOSAL
- FOOD HYGIENE
- INSECT CONTROL (FLIES)
- VACCINE (ORAL) - 6 MONTHS



# food poisoning

plant toxin

chemical

microorganism

# FOOD POISONING

- OUTBREAKS
- SEVERAL PERSONS – SIMILAR ILLNESS
- COMMON FOOD
- GASTROENTERITIS

# PATHOGENESIS

## ■ INGESTION OF LIVING ORGANISMS (MUCOSAL INVASION)

E.g

- SALMONELLA SPECIES
- CAMPYLOBACTER JEJUNI
- VIBRIO PARAHAEMOLYTICUS

Table 14.2. Bacterial causes, pathogenesis and characteristic clinical features of food poisoning\*

Organism	Incubation period, h	Vomiting	Diarrhoea	Clinical features			
				Abdominal pain	Types of Food	Pyrexia	Other
Salmonellae	16-48	Slight	Moderate	Frequently present	Meat, Egg Poultry	Often present	Bloodstained faeces in up to 25% cases
Staph. aureus	* 1-6	Profuse	Slight	Absent	Milk products	Absent	
Clostridium perfringens	* 12-24	Absent	Moderate	Colicky pains commonly present	Meat	Absent	
Campylobacter jejuni	16-48	Slight	Often profuse	Often severe	Chicken	Often present	Bloodstained faeces often
Vibrio parahaemolyticus	6-36	Moderate	Moderate	Frequently present	Sea food e.g. Shell fish skrimps	Absent	
Bacillus cereus	* 0.5-6	Profuse	Slight	Absent	Rice	Absent	
Clostridium botulinum	* 12-72	Slight	Absent	Absent	Canned food e.g. salmon fish	Absent	Nausea, vertigo, aphonia, respiratory paralysis and death can occur

\* toxin mediated

Note: Botulism caused by Clostridium botulinum → No diarrhoea

## ■ TOXIN MEDIATED

### ■ PREFORMED TOXIN)

➔ STAPH. AUREUS

➔ CLOSTRIDIUM BOTULINUM

➔ BACILLUS CEREUS

### ■ ENTEROTOXIN

– CL. PERFRINGENS

# LABORATORY DIAGNOSIS

## ■ SPECIMEN

- STOOL
- VOMITUS
- FOOD

## ■ MICROSCOPY - WBC. RBC. MUCUS (NOGRAM STAIN )

## ■ CULTURE

## ■ IDENTIFICATION

# PREVENTION

- PROPER FOOD HANDLING
- PERSONAL HYGIENE
- ADEGATE COOKING OF FOOD
- REFRIGERATION
- PROPER CANNING
- PUBLIC EDUCATION

# TREATMENT

- WATER ELECTROLYTES
- NO ANTIBIOTICS
  - SEVRE INFECTION
  - SYSTEMIC INVOLVEMENT
- CAMPYLOBACTER JEJUNI-  
ERYTHROMYCIN
- SALMONELLA - AMPICILLIN – COTRIM.  
CIPRO. CEFTRIAXNE