Shigella

Species:

1- Shigella dysenteriae
2- Shigella flexneri
3- Shigella sonnei
4- Shigella boydii

Morphology and staining

- Short rods
- capsulated
- Non-motile
- Non-spore former
- Gram negative

Cultural Characterestics:

All members of shigella are aerobic and facultative anaerobes. Grow readily in culture media at PH 6.4 to 7.8 at 10 C^{o} – 40 C^{o}. with optimum of 37 C^{o}. After 24 hours incubation, Shigella colonies reaches a diameter of about 2 mm. The colonies are circular, convex, colorless, but moderately translucent with smooth surface. And entire edges.

In XLD they appear pinkish to reddish colonies white in Hiktoen Enteric Agar (HEA). They give green to blue green colonies.

Biochemical characteristics

- All ferment glucose, some ferments mannitol
- Dose not hydrolyze urea or liquefy gelatin
- TSI ALK / A
- IMViC V+ - -

Laboratory Diagnosis

1- Cultivation of the bacilli from stool specimen during the first 4-5 days of the disease
2- Smears, Gram-negative bacilli appearing singly
3- TSI ALK / A (no gas no H_2S)
4- IMViC reaction V + - -

Pseudomonas

The genus Pseudomonus is rather a heterogeneous group of microorganisms, with few phenotypic characteristics to clearly distinguish it from other genera.

Pathogenic species:

1- Pseudomonas aerogenosa
2- Ps. Pseudomallei
3- Ps. Mallei

Pseudomonas aerogenosa

1- Obligate aerobic, gram negative bacilli
2- Non-lactose fermenter
3- Oxidase positive
4- Glucose oxidizer
5- Catalase positive
6- Citrate positive
7- Motile by a polar flagella
8- It producer pigment
- Pyocyanin = blue green pigment
- Pyoveridin = yellow-fluorescence

Identification:

1- Gram staining:

Ps. Aerogenosa is indistinguishable from other gram negative bacilli. Therefore there is a little significance for gram staining.

2- Culture:

Ps. Aerogenosa grow well on ordinary media such as blood agar. Nutrient agar and macConkey agar.

Colonies are 2-4 mm in diameter, slightly convex, grayish the smell like grape and and often hemolytic.

On nutrient agar. Ps. Aerogenosa is easily recognized by the diffused blue-green pigmentation.

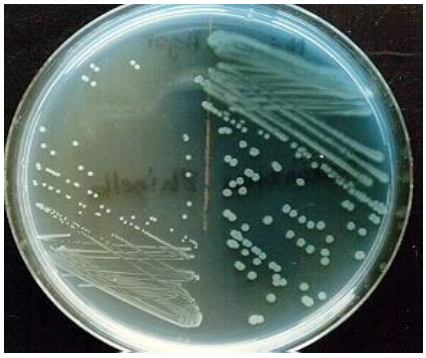
Biochemical tests:

1- Oxidase positive

2- TSI no change

3- Do not ferment glucose

4- Produces a characteristics fruity or grape juice-like aroma



Pyoverdin (green)

pyocyanin(blue)