

Practical 8: Lactose fermenting Gram negative bacilli

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Gram negative bacteria

are naturally found in the intestinal tract, in soil and water. Those that cause primary and opportunistic infections in humans belong mainly to the following genera:

Oxidase negative: Enterobacteria :

Lactose fermenting: Escherichia, Klebsiella... etc.

Non-lactose fermenting: Salmonella, Proteus...etc.

Oxidase positive: Pseudomonas aeruginosa

Gram Reaction: These are the Oxidase negative Gram-negative bacilli in chains, pairs or singles.

***Sample Collection:** Depending on the site of infection, specimens include urine, pus, feces, cerebrospinal fluid (infants), and blood for culture.

***Growth Conditions:** - Facultative anaerobe 35–37°C .

*Culture Media for Isolation:

Colony Morphology	Escherichia coli	Klebsiella spp.	Proteus mirabilis	Pseudomonas aeruginosa
Nutrient Agar	Circular, moist, smooth, gray-white colonies	Large, mucoid (due to capsule), grayish-white colonies	Circular, translucent, spreading colonies with a "swarming" pattern	Irregular, flat colonies with metallic sheen; often greenish or blue-green pigment
MacConkey Agar	Pink colonies (lactose +ve)	Large, pink mucoid colonies (lactose +ve)	Colorless colonies (lactose -ve), swarming may be suppressed	Colorless colonies (lactose -ve); sometimes produce greenish discoloration
EMB Agar	Green metallic sheen (strong lactose fermenter)	Purple mucoid colonies	Colorless to light purple colonies (non-lactose fermenter)	Colorless colonies; may produce greenish pigment



bio test for Enterob

- ① Indole → media: tryptone water → after reagent
- ② Dureus → urea broth → after reagent
- ③ VP-MR
- ④ motile
- ⑤ citrate
- ⑥ KIA vs TST →