

Bacterial Metabolic Tests

1. Starch Hydrolysis

Purpose: detect the ability to externally metabolize starch.

Media: Starch Agar

Procedure:

- Perform a crude smear.
- After incubation, flood agar in iodine.

Reaction:

- Positive: Area around colony will have a “halo” of clear, unstained agar amid the black/purple of the rest of the plate.

2. Oxidation / Fermentation of Carbohydrates

Purpose: detect the ability to use specific carbohydrates with and without oxygen.

Media: Oxidation / Fermentation Basal Media (with addition of Sucrose, Glucose or Lactose)

Procedure:

- Do a needle stab of each pair of carb tubes.
 - Layer 1 with 5mm of sterile mineral oil. Cover with Parafilm and recap.
 - Leave other exposed and lightly capped.

Reaction:

Oxidation & Fermentation results are read the same



3. Hydrogen Sulfide Production / Lactose Fermentation

Purpose: detect the ability to:

- Ferment Lactose
 - Produce Hydrogen Sulfide (H₂S)

Media: Klingler Iron Agar

Reaction:

- H₂S
 - + test = agar will turn black around growth.
 - test = agar will remain orangeish



- Lactose Fermentation
- Perform by doing a Stab with a wire needle

4. Citrate Test

Simmons Citrate Agar

Tests for fermentation of Citrate.



Cont.

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- Perform by streaking surface of slant with wire loop