Biochemical Tests for the Identification of Bacteria (Enterobacteriaceae)

Carbohydrate Fermentation



UC No Ferm Ferm Ferm+Gas

Triple Sugar Iron



A B C D E F G

• From left to right:

- A. Uninoculated control
- B. Red slant and red butt, no black color= no fermentation of glucose, sucrose or lactose. No Hydrogen sulfide produced
- C. Red slant and black butt= no lactose or sucrose fermentation, H₂S has been produced
- D. Red slant with yellow butt= no lactose or sucrose fermentation, glucose is fermented, no H₂S has been produced
- E. Yellow slant, yellow butt and black coloration = Lactose, sucrose and glucose fermented, and H₂S has been produced
- F. Yellow slant, yellow butt and lifting and/or cracking of media, no black coloration= Lactose, sucrose and glucose fermented, H₂S has not been produced but gas has been produced
- G. Yellow slant, yellow butt and no lifting and/or cracking of media, no black coloration= Lactose, sucrose and glucose fermented, H₂S has not been produced nor has gas been produced

Indole



Add Kovac's Reagent

Positive Negative



Simmon's Citrate



Urease



Pos Neg UC

Phenylalanine Deaminase (PAD)



Add Ferric Chloride

Positive

Negative

Lysine Decarboxylase



Non-Enteric

Positive

Negative

Motility Indole Ornithine (MIO)



MNegativePositiveIIPositiveNegativeFONegativePositiveF

Positive Positive Positive

Add Kovac's Reagent

MR-VP



Add Methyl Red

Add Alpha-naphthol and KOH

Starch Hydrolysis



Add Iodine

Negative Positive

Gelatinase



Positive



Negative





Photo Credits

- web.fccj.edu/~lnorman/unknowns.htm?index=2
- inst.bact.wisc.edu/inst/index.php?module=Book
- -http://www.austincc.edu/microbugz/gelatinase_test.php