

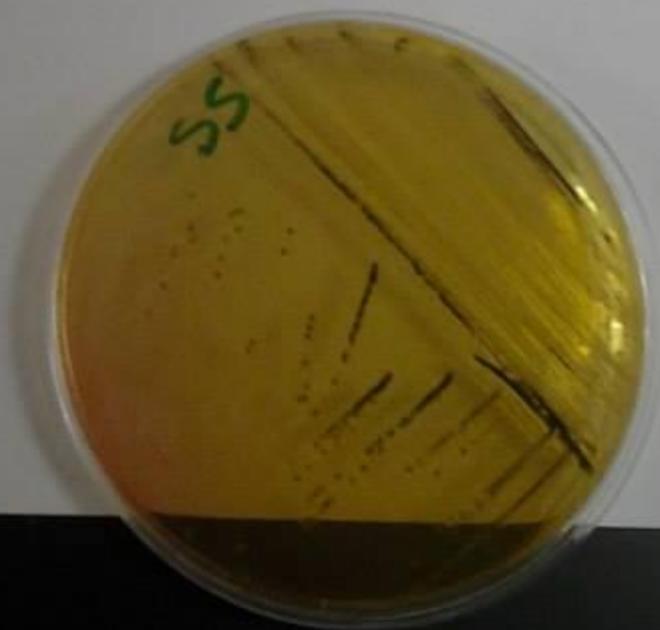
# GI Microbiology Lab 1

Thanks To Alaa' Al-Qudah

# Salmonella

ON Hekton Enteric Agar  
and S-S Agar

H<sub>2</sub>S (+ve) Black spots.



Vibrio      cholera

ON TCBS Medium

Yellow-golden colonies



Tentative differentiation of commonly isolation clinical aerobic enteric bacilli by means of Kligler's iron agar and other biochemical tests during 24-hours incubation at 37°C

Organisms	Slant	Butt	Gas	H <sub>2</sub> S	Urease	Citrate	Indole	Motility	Oxidase
<i>E. coli</i>	Y*	Y	±	-	-	-	+	±	-
<i>Citrobacter spp.</i>	Y*	Y	+	±	W	+	-	±	-
<i>Enterobacter- serratia</i>	Y*	Y	±	-	-	+	±	±	-
<i>Klebsiella spp.</i>	Y*	Y	±	-	±	+	-	-	-
<i>Proteus spp.</i>	R	Y	+	+	+	±	±	+	-
<i>Morganella spp.</i>	R	Y	-	-	+	-	+	+	-
<i>Providencia spp.</i>	R	Y	±	±	+	+	+	+	-
<i>Salmonella spp.</i>	R	Y	+	+	-	+	-	±	-
<i>Shigella spp.</i>	R	Y	-	-	-	-	±	-	-
<i>Pseudomonas spp.</i>	R	R	-	-	-	-	-	+	+
<i>Vibrio cholera</i>	R	Y	-	-	-	±	+	+	+
<i>Cinetobacter</i>	R	R	-	-	-	+	-	-	-

Y\* - Few strains may be fermented after 24 hours, R= RED, W= WEAK.



Salmonella

Shigella



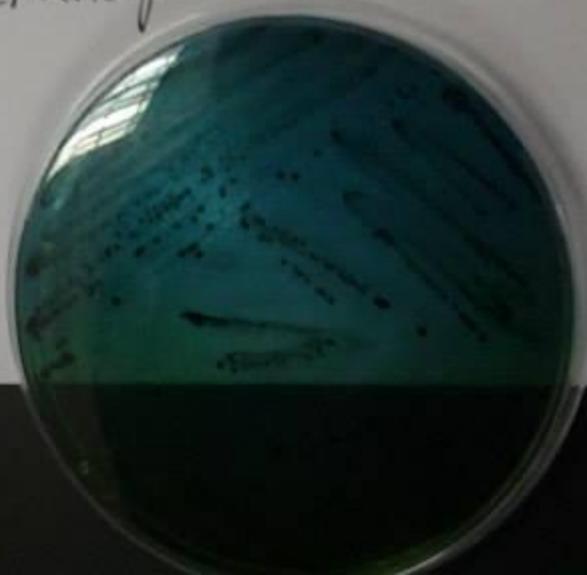
Biochemical  
Identification

Salmonella  
~~Shigella~~

Hekton-Enteric Agar

S-S Agar

clear transparent colony



E. coli

ON MacConkey Agar media

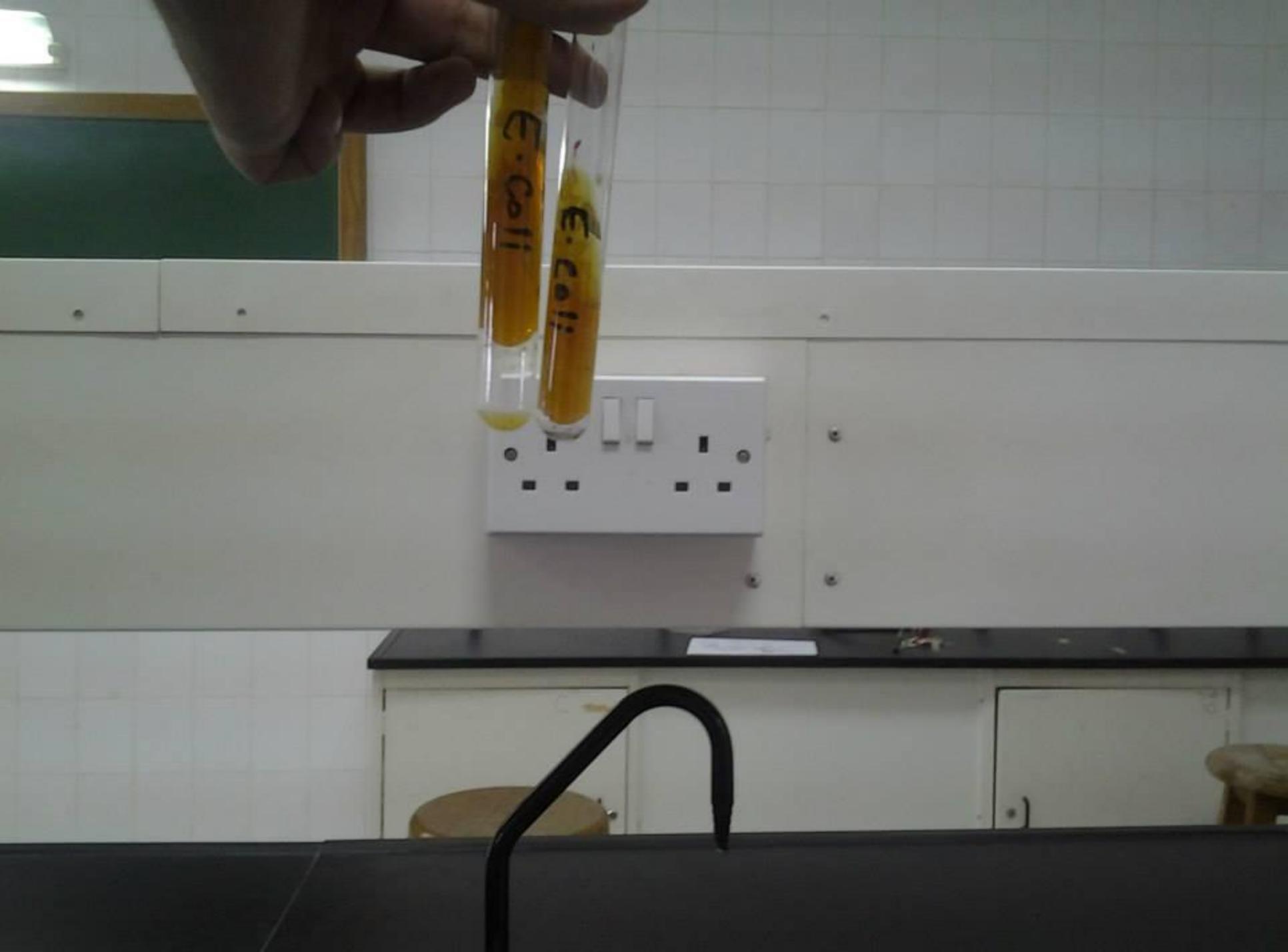
pink colony



Pink Colony





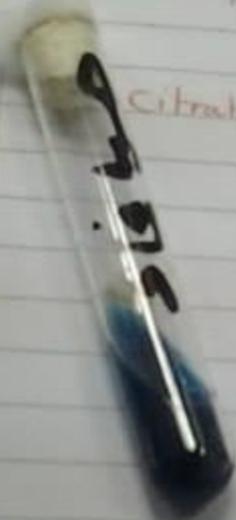


E. coli

E. coli

No. \_\_\_\_\_

Citrate test



+ve



-ve

E. Coli

Biochemical identification  
yellow / yellow

Kligler iron Agar,

Citrate Test, Blue (+), Green (-ve)

Urease Test, pink (+), orange (-ve)

SIM Test,

Turbid

H<sub>2</sub>S +ve (Black)

clear (-ve)

No. \_\_\_\_\_

### Indole test



+



-

YELLOW, Y<sup>+</sup> - Few strains may be fermented after 24 hours, R = RCD

R	Y	-	-
R	R	-	-
		-	-



Tentative differentiation of commonly isolation clinical aerobic enteric bacilli by means of Kligler's iron agar and other biochemical tests during 24-hours incubation at 37°C

Organisms	Slant	Butt	Gas	H <sub>2</sub> S	Urease	Citrate	Indole	Motility	Oxidase
<i>E. coli</i>	Y <sup>+</sup>	Y	±	-	-	-	+	±	-
<i>Citrobacter spp.</i>	Y <sup>+</sup>	Y	+	±	<b>W</b>	+	-	±	-
<i>Enterobacter-serratia</i>	Y <sup>+</sup>	Y	±	-	-	+	±	±	-
<i>Klebsiella spp.</i>	Y <sup>+</sup>	Y	±	-	±	+	-	-	-
<i>Proteus spp.</i>	R	Y	+	+	+	±	±	+	-
<i>Morganella spp.</i>	R	Y	-	-	+	-	+	+	-
<i>Providencia spp.</i>	R	Y	±	±	+	+	+	+	-
<i>Salmonella spp.</i>	R	Y	+	+	-	+	-	±	-
<i>Shigella spp.</i>	R	Y	-	-	-	-	±	-	-
<i>Pseudomonas spp.</i>	R	R	-	-	-	-	-	+	+
<i>Vibrio cholera</i>	R	Y	-	-	-	±	+	+	+
<i>Acinetobacter</i>	R	R	-	-	-	+	-	-	-

Y = YELLOW, Y<sup>+</sup> = Few strains may be fermented after 24 hours, R = RED, W = WEAK.

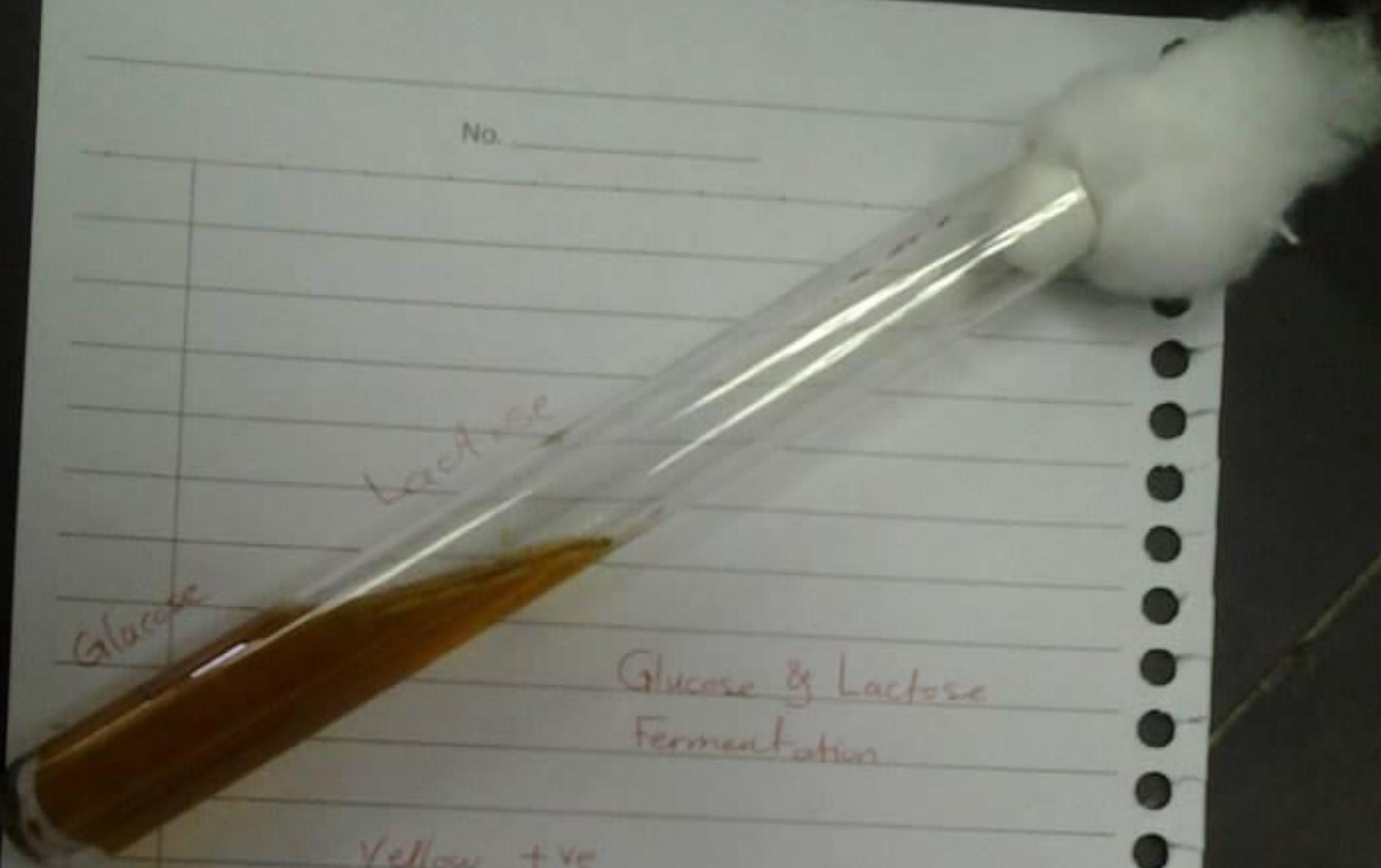
No. \_\_\_\_\_

Lactose

Glucose

Glucose & Lactose  
Fermentation

Yellow +ve  
Red -ve



Urease test



-ve



+ve

E. Coli

Biochemical identification

Kligler iron Agar,

yellow / yellow  
glucose fermentation      lactose fermentation

Citrate Test, Blue (+), Green (-ve)

Urease Test, pink (+), orange (-ve)

SIM Test,

Turbid  
H<sub>2</sub>S +ve (Black)  
clear (-ve)

No. \_\_\_\_\_

Indole test



Indole Ring (Pink Ring)  
+ve

+ve



-ve

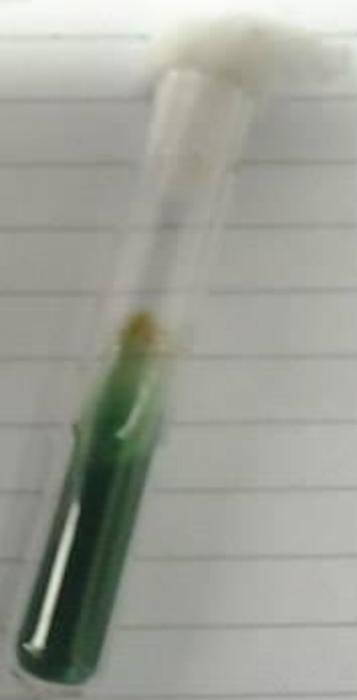
Turbidity → Motility

No. \_\_\_\_\_

Citrate test



+ve



-ve