

THROAT SWAB

**Gram Positive
Coccus**

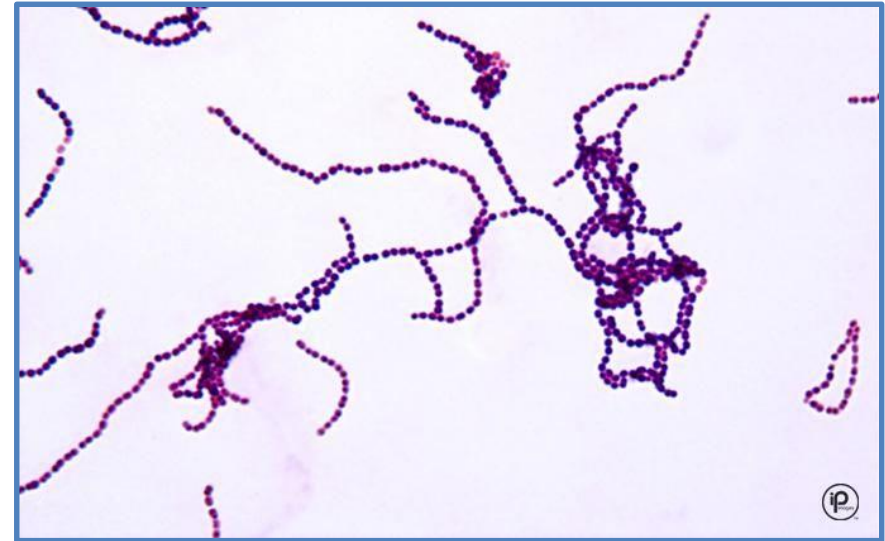
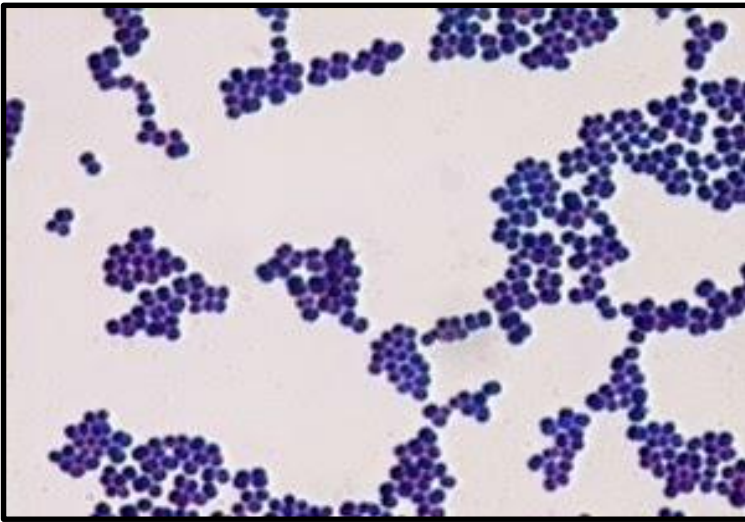
**Staphylococcus
Spp.**

**Streptococcus
Spp.**

GRAM STAIN

Staphylococcus

Streptococcus



A- Staphylococcus .albus

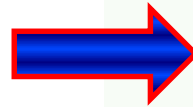
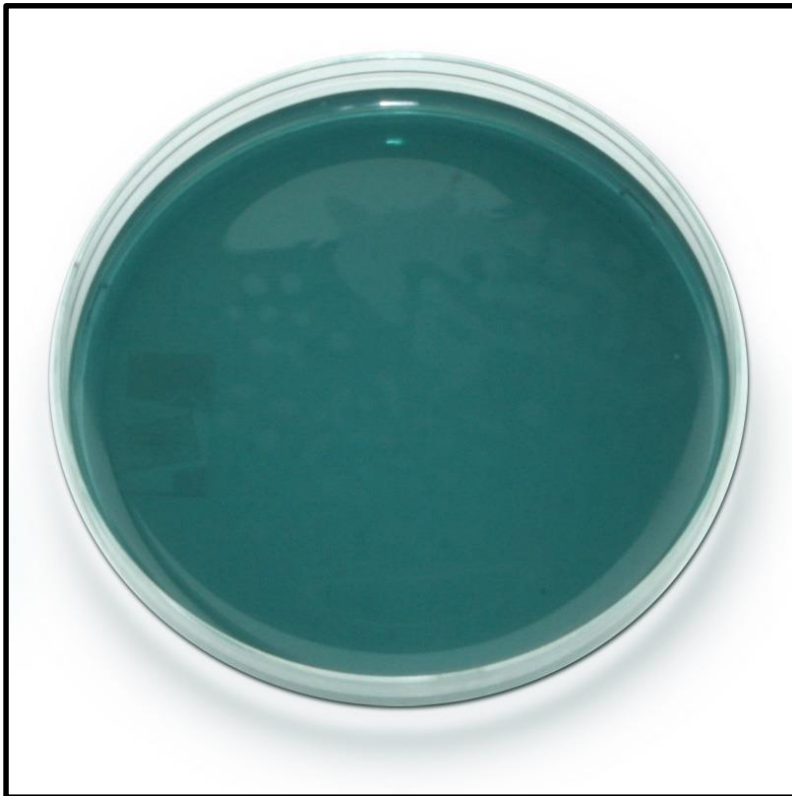
B- Staphylococcus.aureus



Blood agar



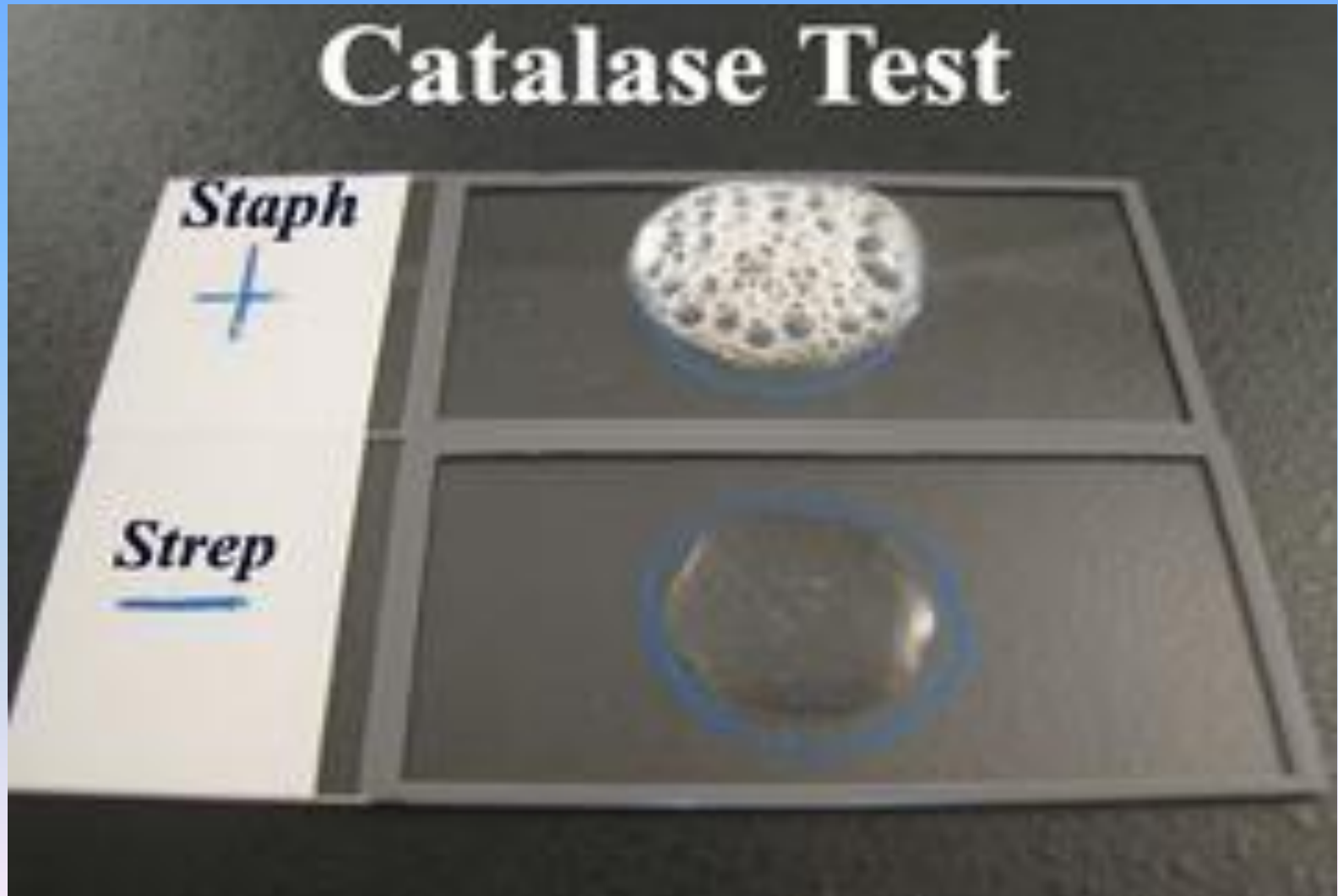
CLED media
Lactose fermentation (+ve)
staphylococcus spp.



Test for differentiation of Staphylococcus species

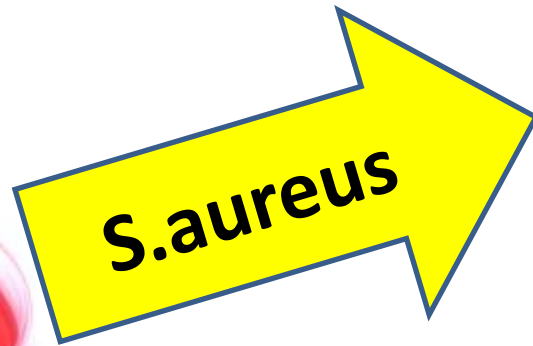


Catalase test

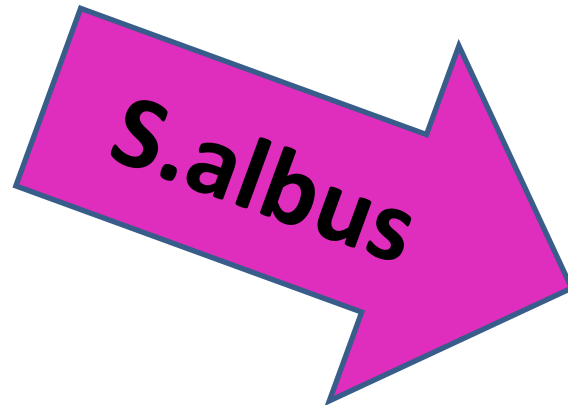
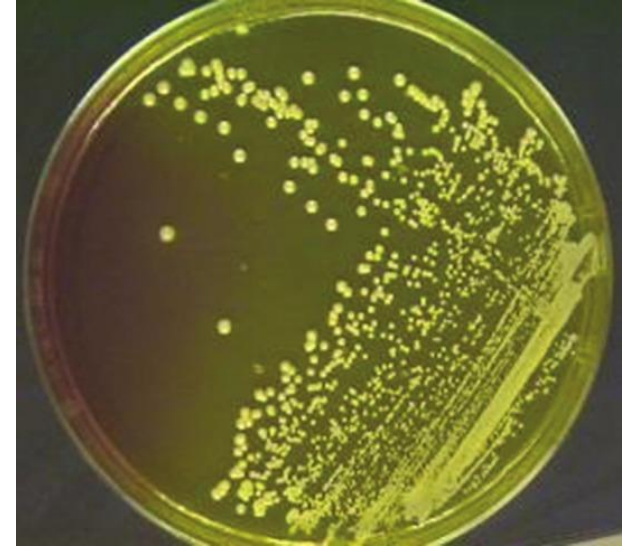


MSA

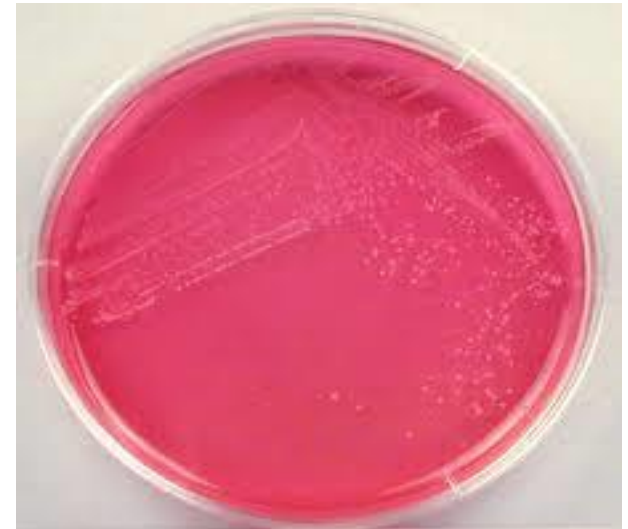
Mannitol salt agar media



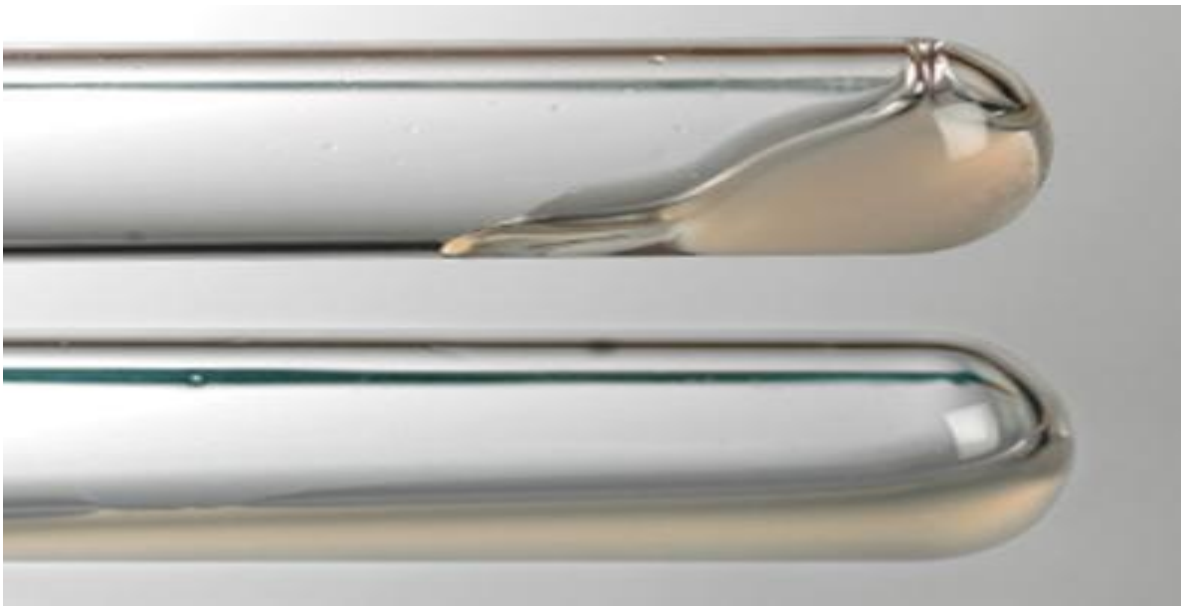
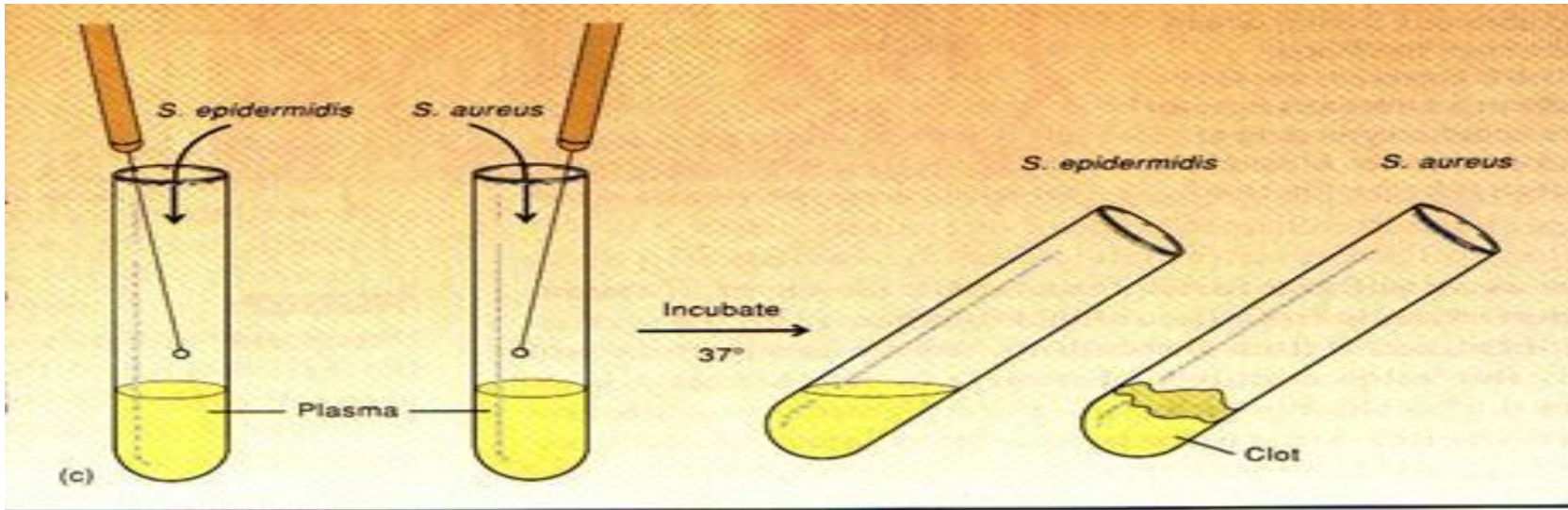
S.aureus



S.albus



Coagulase test



Streptococcus

α-hemolytic

green,
partial hemolysis

β-hemolytic

clear,
complete hemolysis

γ-hemolytic

no hemolysis

pneumoniae

optochin sensitive,
bile soluble,
capsule =>
quellung +

Viridans

mutans, sanguis
optochin resistant,
not bile soluble,
no capsule

pyogenes

Group A,
bacitracin sensitive

agalactiae

Group B,
bacitracin resistant

Enterococcus

E. faecalis,
E. faecium

Hemolysis on sheep blood agar

Blood Agar:

Shows three types of hemolysis

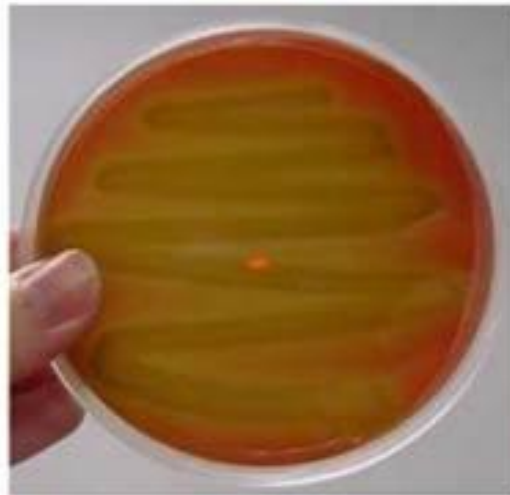
α Hemolysis

β Hemolysis

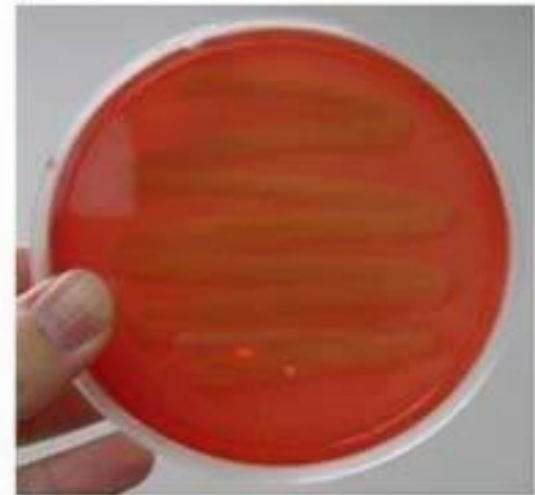
γ Hemolysis



Beta Hemolysis



Alpha Hemolysis

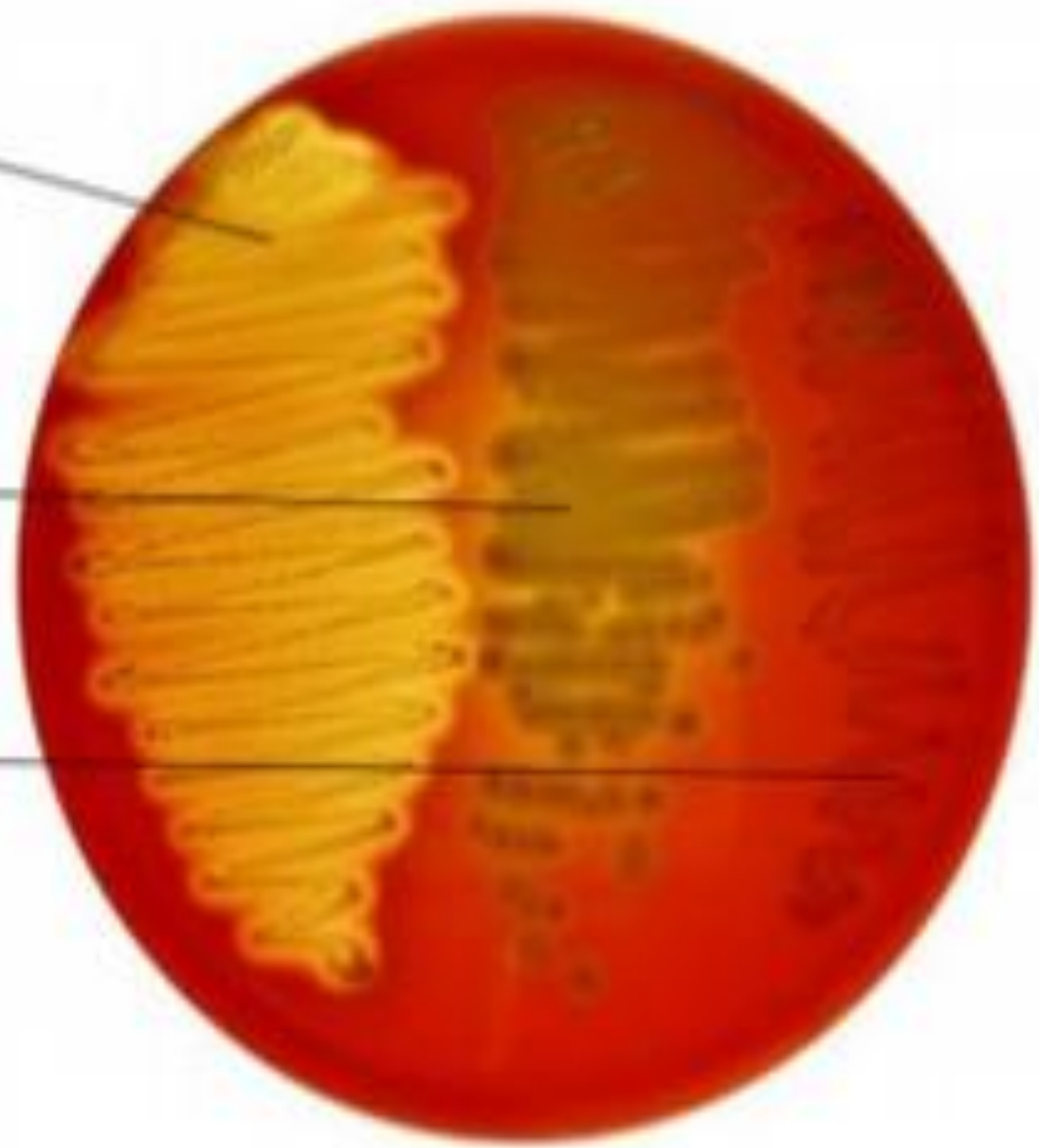


Gamma Hemolysis

Beta

Alpha

None

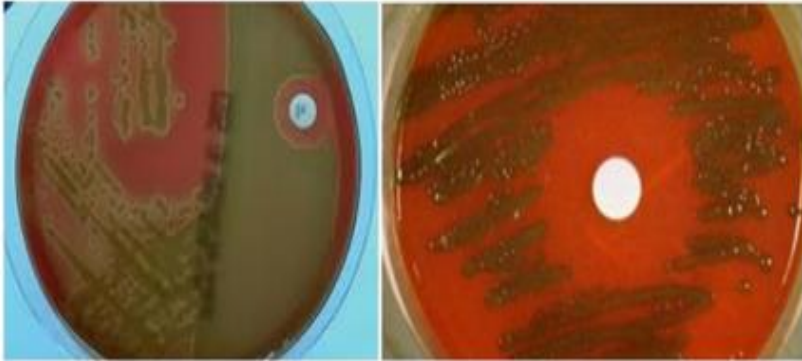


Differentiation between α -hemolytic streptococci

	Hemolysis	Optochin sensitivity
<i>S. pneumoniae</i>	α	Sensitive (≥ 14 mm)
<i>Viridans strep</i>	α	Resistant (≤ 13 mm)

Optochin test

Streptococcus pneumoniae



Streptococcus pneumoniae strain on blood agar showing alpha hemolysis (green zone surrounding colonies). Note the **zone of inhibition** around a filter paper disc impregnated with optochin. (**sensitive** to optochin)

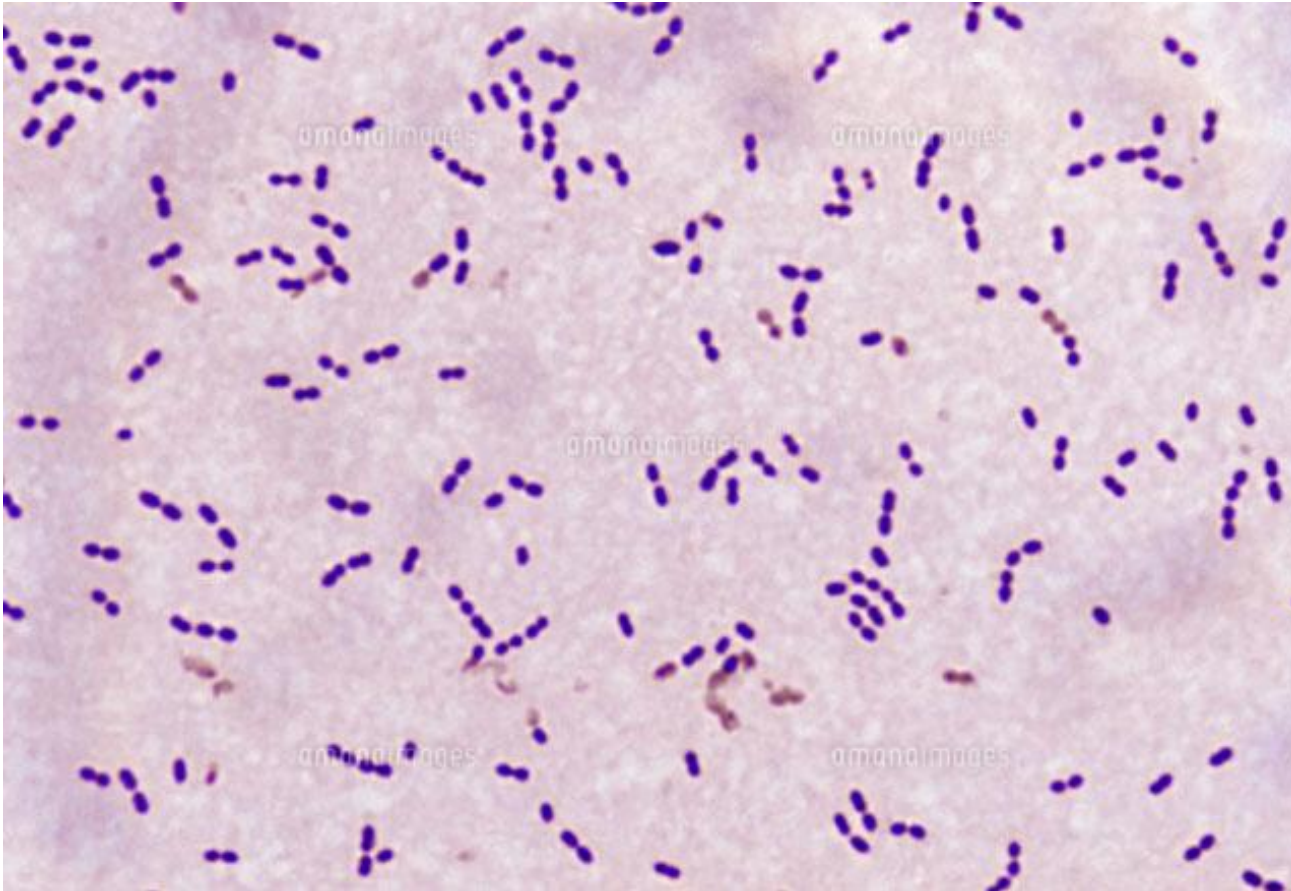
Optochin test

Streptococcus viridans

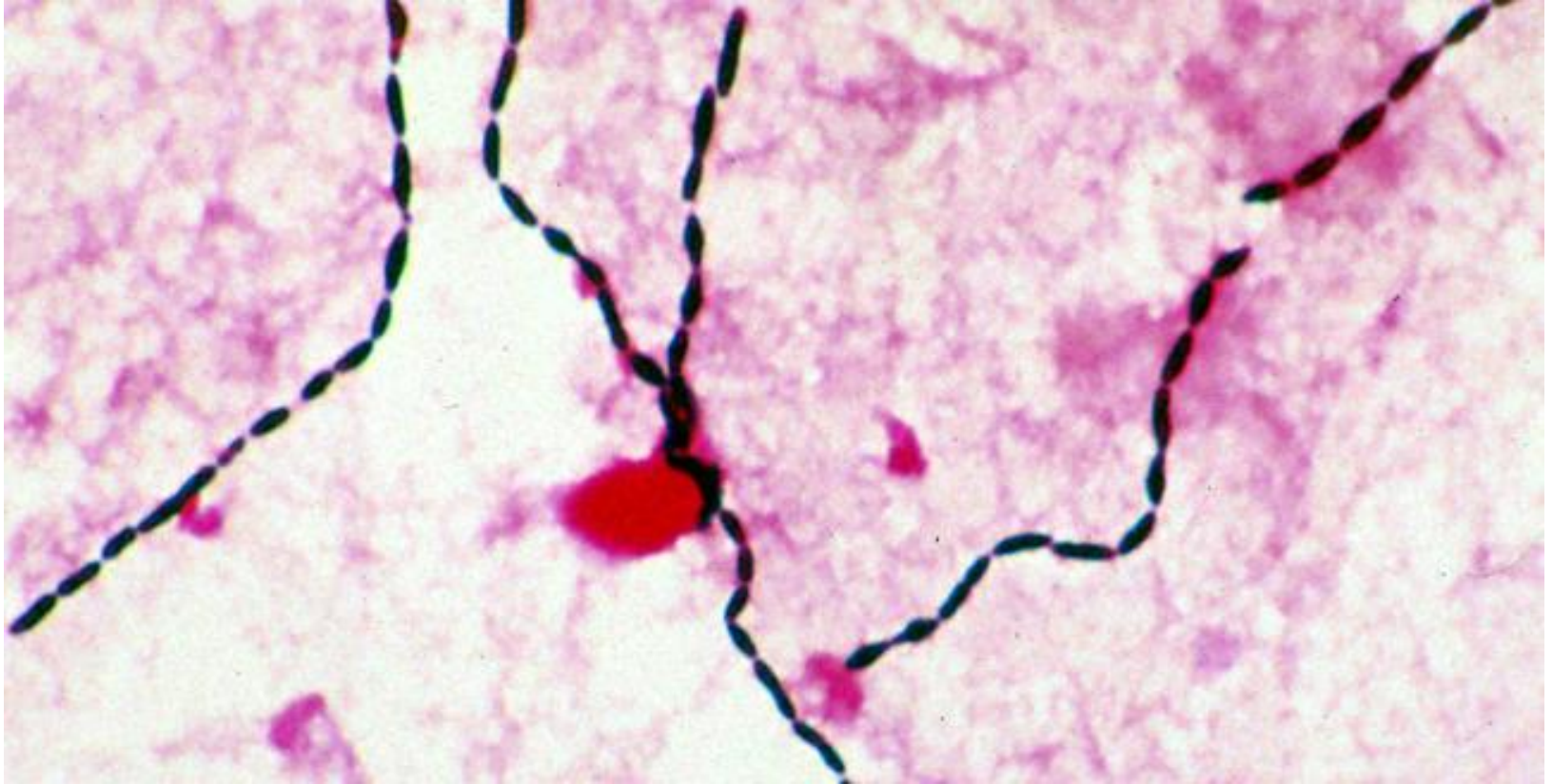


Streptococcus viridans strain on blood agar showing alpha hemolysis (green zone surrounding colonies). **No zone of growth inhibition (Resistant)** around a filter paper disc impregnated with optochin.

Streptococcus pneumoniae



Streptococcus viridans



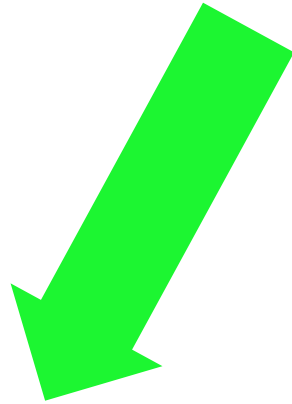
Differentiation between β -hemolytic streptococci

	Hemolysis	Bacitracin sensitivity
<i>S. pyogenes</i>	β	Susceptible
<i>S. agalactiae</i>	β	Resistant



Bacitracin test for *Streptococcus pyogenes*

**Gamma hemolysis
streptococcus**



**Enterococcus
Group D
- E.feacalis**



**Other than
Enterococcus
group D**

Bile-Esculin



Other than
Enterococcus
Group D
Negative

**Enterococcus
Group D
Positive**

Thank you for listening, any
questions?

