GRAM POSITIVE COCCI

BACTERIOLOGY

@hansel_biscuit

GRAM POSITIVE COCCI

CATALASE TEST

Reagent: ***3% H_2O_2***
(+) *Copious bubbles* **(-)** *No bubbles*

(+) ***Staphylococcus sp.***
Micrococcus sp.

OXIDATION-FERMENTATION TEST

Medium: ***Oxidation-Fermentation Tube***
pH Indicator: ***Bromthymol Blue***
A: Yellow K: Blue

	Open tube (w/ oxygen)	Closed tube (w/o oxygen)
Fermenter	*Yellow*	*Yellow*
Oxidizer	*Yellow*	*Green*

Fermenter — ***Staphylococcus sp.***

Oxidizer — ***Micrococcus sp.***

MODIFIED OXIDASE TEST (+) aka MICRODASE TEST

Reagent: ***tetramethyl paraphenylene diamine dihydrochloride***

(+) ***Blue***

COAGULASE TEST

Reagent: ***Rabbit plasma w/ EDTA***

Slide Coagulase Test	Tube Coagulase Test
- detects bound coagulase or clumping factor	- detects unbound or free coagulase
(+) *Clumping* **(-)** *No clumping*	**(+)** *Clot of any size* **(-)** *No clot*

Note: All negative slide tests must be confirmed using the tube test.

(+) ***Staphylococcus aureus***

DNAse (+)

Media: ***DNAse agar with DNA-Methyl Green Complex***
(+) *medium becomes* ***colorless*** *around the test organism*
(-) *medium remains green*

(-) ***Staphylococcus epidermidis***
Staphylococcus saprophyticus

NOVOBIOCIN

Reagent: ***5 ug novobiocin disk***
Sensitive: *zone of growth that is* ***16mm or more*** *in diameter*

S — ***Staphylococcus epidermidis***

R — ***Staphylococus saprophyticus***

(-) ***Streptococcus sp.***

BLOOD AGAR PLATE (HEMOLYTIC PATTERN)

Alpha	Incomplete	**Greening** of medium
Beta	Complete	Total **clearing** of medium
Gamma	Non-hemolytic	**No change**

β — ***Streptococcus pyogenes***
Streptococus agalactiae

α — ***Streptococcus pneumoniae***
Viridans

TAXO A: BACITRACIN

Reagent: ***0.02 - 0.04 units of bacitracin disk***

Sensitive: *Zone of inhibition* ***>10 mm***
Resistant: *No zone of inhibition*

S — ***Streptococcus pyogenes***

PYR (+)

L-Pyrrolidonyl Arylamidase

Reagent: ***N,N-methylaminocinnamaldehyde***

(+) ***Bright red color*** *within 5 mins*
(-) *No color change or orange color*

R — ***Streptococcus agalactiae***

CAMP (+)

Christie, Atkins, and Munch Peterson

Reagent: ***beta-lysin producing strain of S. aureus streaked on a sheep blood agar***

(+) ***Arrowhead zone*** *of beta hemolysis*
(-) *No enhancement of hemolysis*

HIPPURATE HYDROLYSIS (+)

Reagent: ***hippurate disk with ninhydrin reagent***

(+) ***Deep purple color***
(-) *colorless or slightly yellow-pink*

TAXO P: OPTOCHIN

Reagent: ***ethyl hydrocupreine hydrochloride***

Sensitive: *Zone of inhibition* ***≥ 14 mm***
Resistant: *No zone of inhibition*
Equivocal: *Any zone of inhibition <14 mm is questionable for pneumococci; confirm with Bile Solubility Test*

S — ***Streptococcus pneumoniae***

Mouse virulence
Inulin Fermentation
Bile Solubility
Optochin Sensitivity
Neufeld-Quellung

Positive/ Susceptible

R — ***Viridans***

Mouse virulence
Inulin Fermentation
Bile Solubility
Optochin Sensitivity
Neufeld-Quellung

Negative/ Resistant