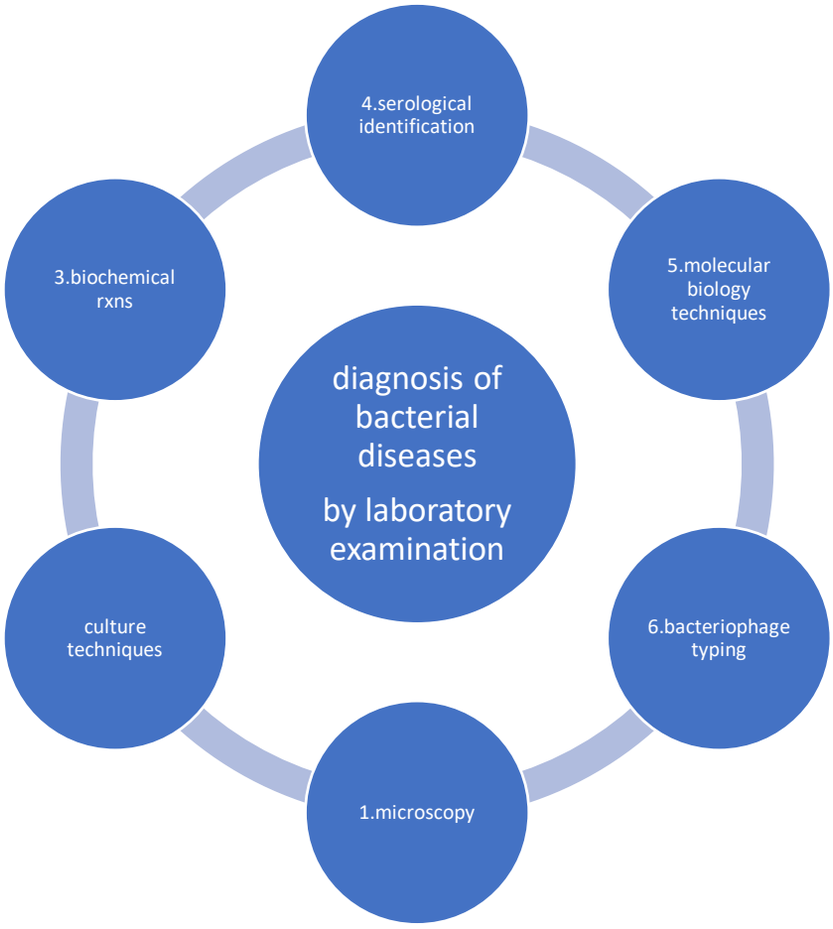
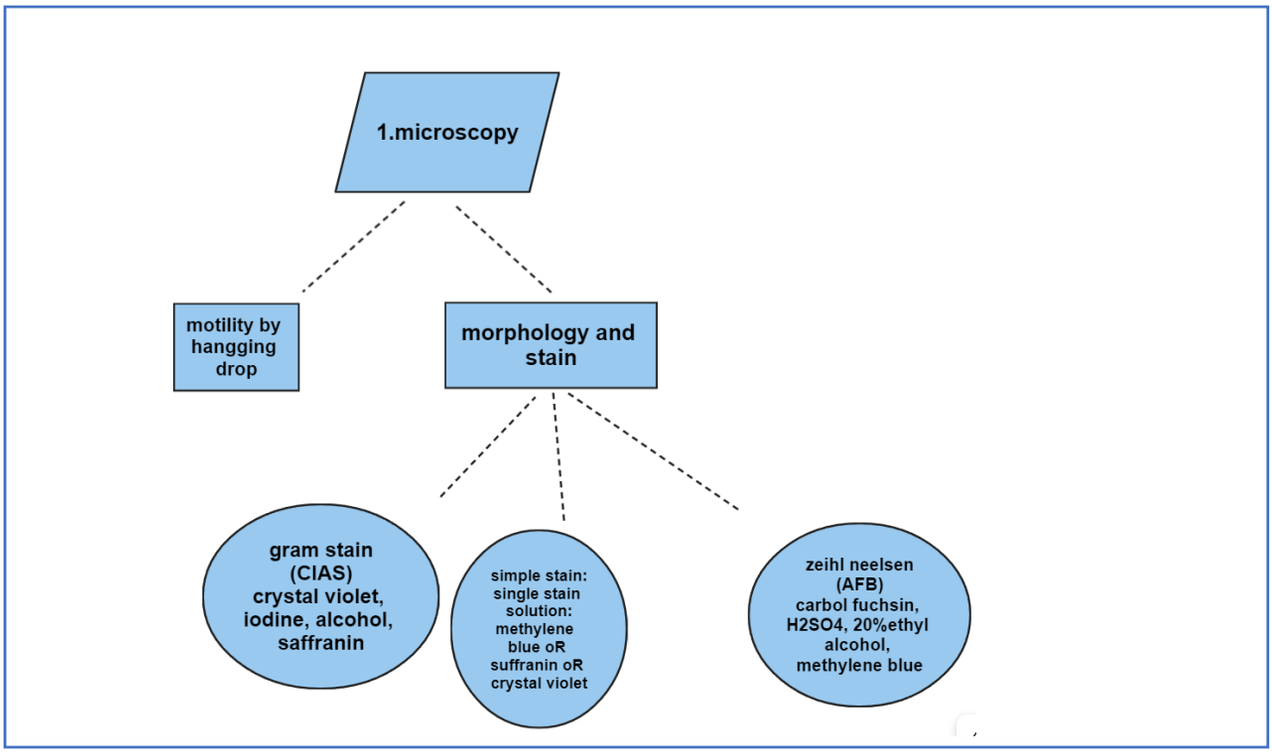
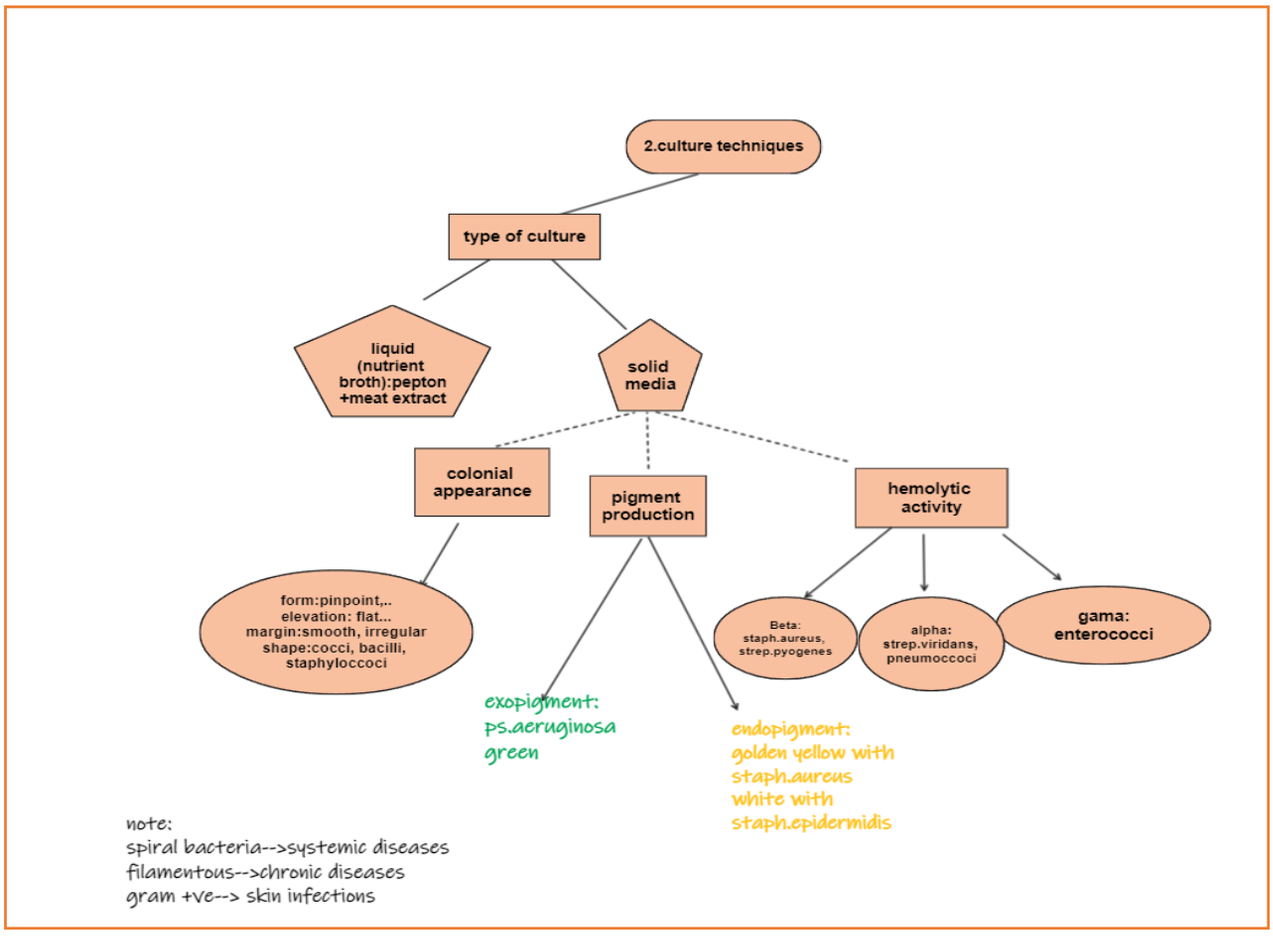
Classification and identification of bacteria







3.biochemical rxns

rxn	method	Types of bacteria	+ve test	-ve test
1. sugar fermentation with Durham tube	Detection of the ability to ferment Glu and convert the product (pyruvate)to a gas	Identification of gram-ve enteric bacteria	Yellow either with the only acid product or acid and gas	Pink (no fermentation)
2. lactose fermentation in MacConkey agar		E.coli and klebsiella vs. Salmonella and shigella	Rose pink for E.coli and klebsiella	Pale colonies for salmonella and shigella
3. indole	AA (Trp)→indole then the addition of Kovacs reagent to detect	E.coli and klebsiella	Pink for E.coli	Absence of colour for klebsiella
4. H2S production	Sulfur will be reduced to H2S by the microbe using Fe for detection founding in	Enterobacteriaceae (enterics) and gram bacilli especially for	Black for francisella and salmonella	No black for proteus

	(SIM, TSIA)medias	**salmonella, Francisella and proteus species**		
5. MR (methyl red rxn)	**Glu fermentation→acid → lowering Ph**	**E.coli and klebsiella**	**Red for E.coli**	**Yellow, orange for klebsiella**
6. Voges Proskauer(VP)	**Glu fermentation→acetyl methyl carbinol →detected by KOH**	**E.coli and klebsiella**	**Pink for klebsiella**	**No pink for E.coli**
7. Citrate utilization	**The ability for citrase production detected by alkalinity, (citrase hydrolyses citrate to oxaloacetic acid and acetic acid) using Simmons agar**	**Member of Enterobacteriaceae**	**blue**	**green**
8. oxidase	**Production of oxidase enzyme detected by drops of colourless oxidase reagents**	**Enterobacteriaceae and pseudomonas**	**Deep purple for Ps. Like Ps. aeroginosa**	**Colourless for Shigella dysenteriae**
9. catalase	**H2O2 converts by catalase to O2 as gas bubbles**	**Staph. And Strep.**	**Staph bubbles**	**Strep. No bubbles**
10. coagulase	**Fibrinogen converts to fibrin forming clots by coagulase**	**Staph. Aureus from other -ve coagulase staph.**	**Clot Staph. Aureus**	**No clot**
11. urease	**Urea produces NH3 by urease, increasing alkalinity, Converting yellow to pink**	**Proteus vulgaris and E.coli**	**Red pink For proteus vulgaris**	**No pink for E.coli**

*NOTE:

E.coli is -ve in VP and urease tests(no pink)

*modern systems: API, Vitec system

PAST PAPERS:

Which one turns hydrogen peroxide into water and oxygen

a-streptococcus pyogenes
b-streptococcus "another type"
c- staphylococcus epidermidis
d-enterococcus
e-none of the above

- One of the following is both an enrichment and differential
ulture media:

A-Blood agar
B-MacConkey agar
C-Mannitol salt agar
D-Amies medium

Which of the following will most likely cause a skin infection?

a-Staphylococcus
b-Treponemas
c-Nocardia
d-Borrelias

Which of the following method is preferred to be used to sterilize solutions hat likely to be damaged by heat?

a. Filtration
b. Boiling
c. Inspissation
d. Pasteurization
e. Autoclaving

Which of the following tests is used for identification and differentiation of nembers of Enterobacteriaceae from other gram negative bacilli?

a. Oxidation test
b. Methyl Red reaction
c. Hydrogen sulfide production test
d. Production of Indole
e. Catalase test

C
A
A
C
A

BEST WISHES