

الكلية: الطب

القسم او الفرع: الاحياء المجهرية

المرحلة: الثالثة

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اسم المادة باللغة العربية: احياء مجهرية - عملي

Practical Microbiology: اسم المادة باللغة الإنكليزية:

اسم المحاضرة الأولى باللغة العربية: الاوساط الزرعية

Culture Media: اسم المحاضرة الأولى باللغة الإنكليزية:

Culture Media (Types of Media)

- 1- Ordinary media
(simple)**
- 2- Enriched media**
- 3- Differential media**
- 4- Selective media**
- 5- Enrichment media**
- 6- Transport media**
- 7- Indicator media**
- 8- Sensitivity media**

Culture media

Ordinary

Liquid media

Solid media

Nutrient agar

Peptone
water

Nutrient
broth

Peptone
+
NaCl



Peptone
water
+
Meat
extract



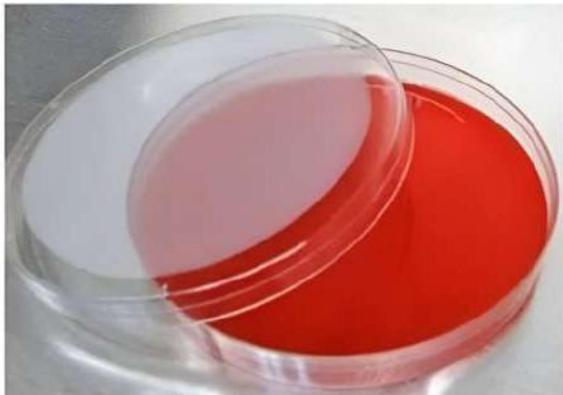
Nutrient broth
+
Agar

Culture media

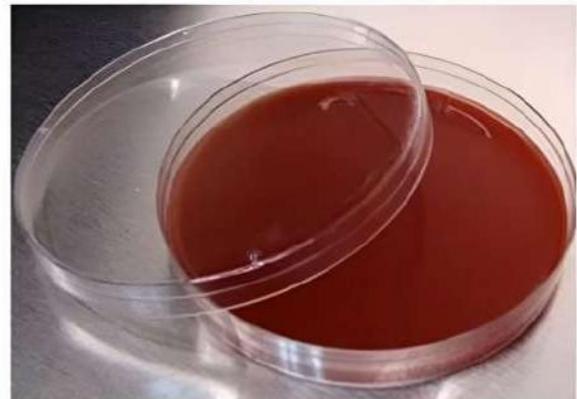
Enriched

Blood agar

Chocolate agar



**Nutrient agar
+ 5% blood**



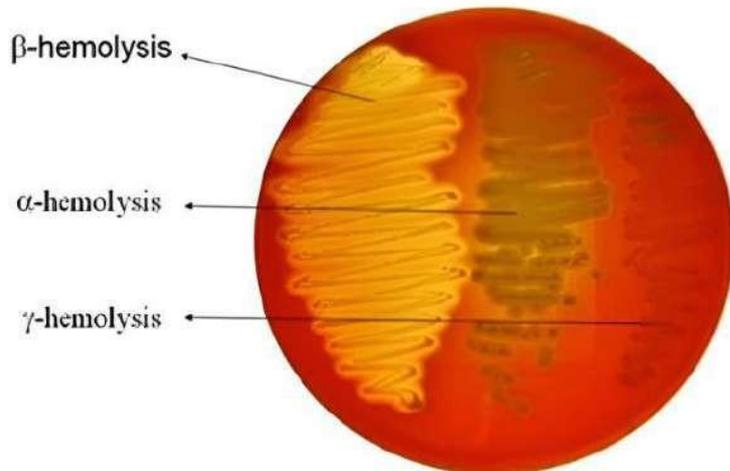
Heated blood agar

Culture media

differential

Blood agar

MacConckey agar



- ✓ Crystal violet
- ✓ Bile salt
- ✓ NaCl
- ✓ Lactose
- ✓ Phenol red

Culture media

Selective

MacConckey



- ✓ Crystal violet
- ✓ Bile salt
- ✓ NaCl
- ✓ Lactose
- ✓ Phenol red

Löwenstein
-Jensen



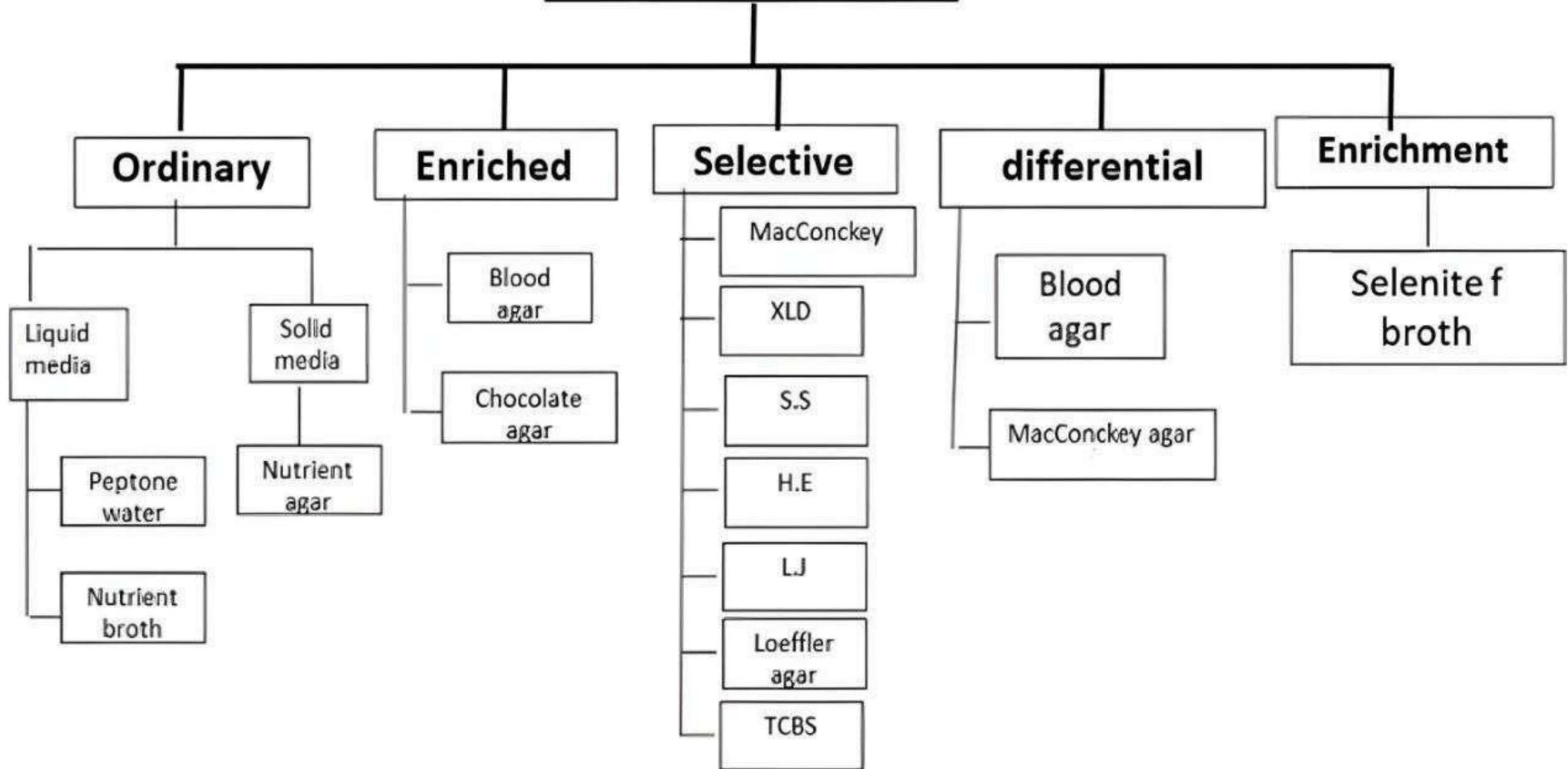
Loeffler
agar



TCBS



Culture media



Culture Media (Types of Media)

Methods used to create optimal conditions for the cultivation of pathogens has been developed over years of experimentation, commercially produced environmental systems, artificial media are available.

1- Ordinary media: two types

- **Simple liquid media:** for example:

- a. **Peptone water media** (Peptone + Sodium chloride).
- b. **Nutrient broth** (Meat extract + Peptone + Sodium chloride).

- **Simple solid media:** for example: Nutrient agar (nutrient broth + solidifying agent "agar").

2- **Enriched media:** an ordinary media plus blood, serum, or egg for growth of fastidious bacteria.

e.g.; **Blood agar media:** composed of nutrient agar + 5% blood.

Chocolate agar: heated blood agar with the addition of factor "X" (hemin) and factor "V" (nicotine adenine di-nucleotide) as supplements.

3- **Differential media:** those media help to differentiate certain bacteria from others e.g.: **MacConkey agar** This media inhibits gram positive bacteria due to presence of bile, and it differentiates gram negative bacteria into lactose fermenter as *Escherichia coli* and non- lactose fermenter as *Pseudomonas* species.

4- **Selective media:** contains inhibitory substances e.g.:

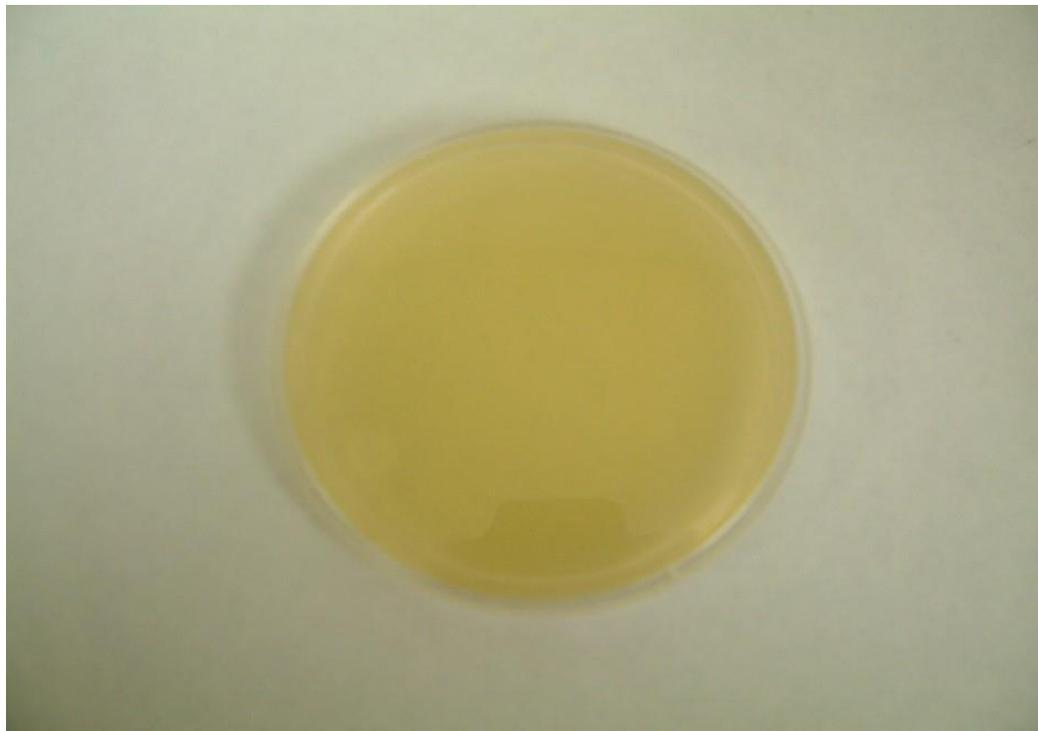
- MacConkey considered as selective and differential media
- Lowenstein Jensen media contains "Malachite green" which inhibits the growth of bacteria other than "*Mycobacterium tuberculosis*".
- TCBS media "Thiosulfate Citrate Bile salts Sucrose agar" used for *Vibrio cholera*.

5- Enrichment media: this media allow the growth and Enrichment for one type of bacteria (fastidious one) and inhibits other (by competition on food) e.g., selenite f – broth.

_____ certain mo. is weak and dies rapidly between the times of taken of the specimens and examination so it needs a special media for transport. E.g., Stuart's media.

7- Indicator media: Change in the color of indicator with the growth of bacteria an indicator due to metabolism as a diagnosis feature e.g., Sulphite in Wilson Blair media for Salmonella typhi.

8- Sensitivity media: a special media used to test antibiotic sensitivity for given mo. e.g., Muller Hinton media.



Nutrient agar



Blood agar



Chocolate agar



MacConkey agar

Thank you