

## Culture media

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- culture media: is the material that the bacteria grow on it.
- it is different from one type of bacteria to another according nutrition requirement like energy, carbon and nitrogen sources.
- cultivation is necessary for study and diagnosis of bacteria when we get a sample.
- type of sample; blood, urin, stool, pus, sputum, wound swab, skin swab, csf, biopsy
- our working in laboratory must be under sterilizing condition.

### classification of culture media

In general culture media divided in to two type;

- 1-natural ex; animal tissues, plant tissues, blood, beef extract etc.
- 2-Artificial making by many company.

#### Artificial media divided to:

##### 1-Basic media;

This media are most generally use in bacterial cultivation  
ex, nutrient agar, nutrient broth

##### 2-selective media

select on type of bacteria on another.

ex; macconky agar select gram ve- bacteria on gram ve+ bacteria.  
ex; salmonella\_shigella agar(ss agar)

##### 3-Differential media

all type of bacteria are grow but each one have feature differ from another.  
ex; M.A. all genus of family *Enterobacteraceae*(Gve-) are grow but *G.E. coli* appear pink because it lactose fermented while proteus spp. appear pale (non lactose fermented).

ex; blood agar; *G streptococcus* are grow and hemolyse blood but *S.pyogen* have beta hemolytic while *S.pneumonia* have alpha hemolytic.

##### 4-Enrichment media

in this media add special nutrition requirement for grow special type of bacteria.  
ex; ss agar to grow *G. salmonella, shigella*.  
ex; chocolate agar to grow *G. neisseria*.

there are other type of media ex; maintenance media, enumeration media, isolation media, supporting media.

**There are another classification of culture media according to solidity.**

Agar is the material that responsible about solidity in culture media.

#### 1-solid media

Bacteria grow on surface of these media as colony. Ex; blood agar, nutrient agar, macconky agar.

These media may be as many shape:

A-in petri dish; use for bacterial growth generally for making some diagnostic tests also for sensitivity against chemotherapy agent.

B- deep; in test tub, use for growth anaerobic bacteria.

C-slant; in test tub, use for increase surface area of bacterial growth.

#### 2-semi solid media. 3-2-0-56

Have agar less than solid media, use for study some bacterial activity like motility ex O/F media.

3- liquid media, these media have not agar , bacterial growth are seem as turbidity, use for activating bacteria also when take sample ,ex nutrient broth, macconky broth.

#### Materials:

- Powder
- 1- powder of wanted media or it's contains.
  - 2- volum flask(100-250-500ml)
  - 3- balance.
  - 4- distilled water.
  - 5- burner.
  - 6- steril petri dish.
  - 7- cotton.
  - 8- aluminum foil.
  - 9- alcohol (80%).
  - 10- disinfectant.

#### Procedure:-

1-add suitable amount of wanted culture media to (100ml) of D.W (or it's contains take it from table) then shake it until dissolution.

2-heat up the media until boiling then closed flask's mouth by cotton and cover it with aluminum foil.

3-enter the flask to autoclave for (20min) for sterilizing.

4-let the media cool out until(40c\*).

5-distributed this media in sterile petri dish closeness of flame in side inoculation cabinet and pass flask's mouth many time on flame.

Not: make sure the media sterilized put it in incubator over night.