TYPES OF CULTURE MEDIA

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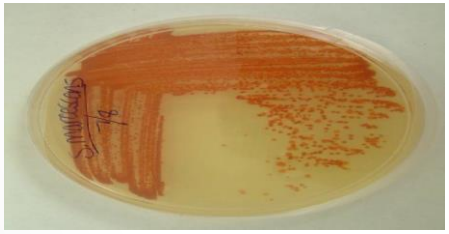
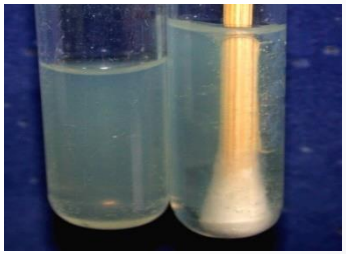




Culture Media

Culture media is one of the primary diagnostic methods of microbiology and used as a tool to determine the cause of infections

Agar

A polysaccharide gelatinous material derived from algae, is an ideal solidyfying agent.

- it has no influence on bacterial growth , it remains solid at 37C.

Types of culture media

I. Based on their consistency

a) solid medium

b) liquid medium

c) semi solid medium

A. Solid media:

These media contains 1.5-2% agar. this form of media is mainly used in Petri dishes as plate cultures.

- They are used to observe the colony characteristics, size, shape of microorganisms for the isolation and enumeration.

e.g.Mac Conkey agar, blood agar, etc.

B. Semisolid media

These media are gelatinous in nature with jelly like consistency. These are prepared by adding 0.5%agar to a fluid medium. These media are used for motility test.

Semisolid Nutrient Agar (M1191)

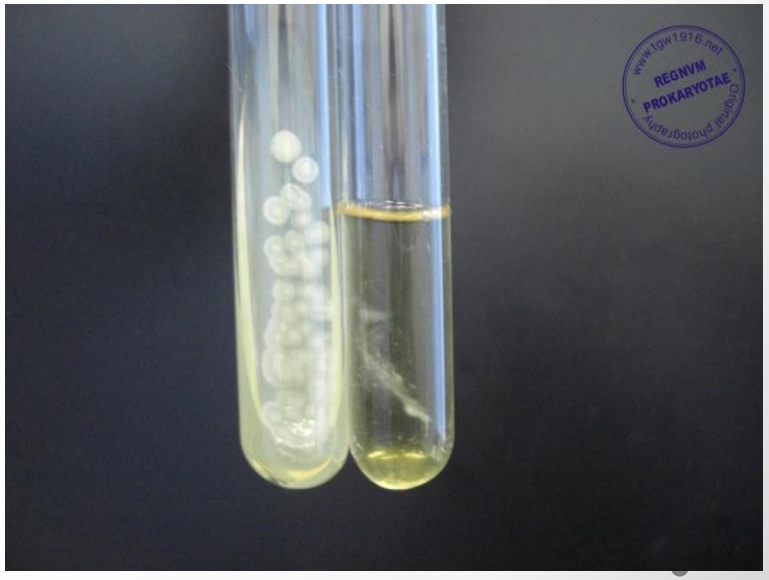
1. Control
2. Escherichia coli ATCC 25922
3. Salmonella Typhi ATCC 6539
4. Salmonella Enteritidis ATCC 13076

C. Liquid media

It does not contain any agar.

growth of the organisms are shown by the turbidity in the medium. **Generally,** liquid media are used for profuse growth fixed organisms can not be separated.

e.g. peptone water, nutrient broth etc.



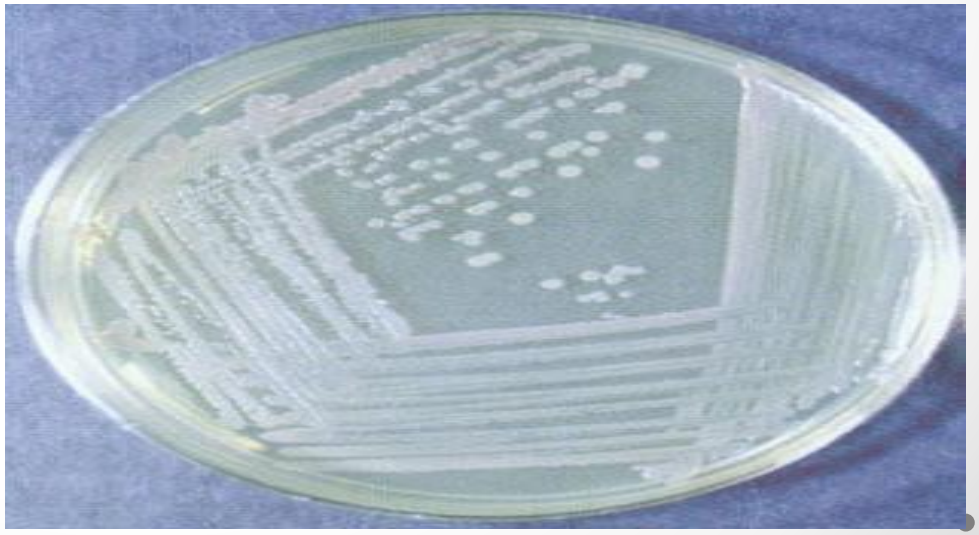
Classification based on the basis of purpose/ functional use/ application

1. Simple/basal media

Basal media are those that maybe used for growth of bacteria . **These media are generally used for the primary isolation of microorganisms**.

e.g. nutrient broth , nutrient agar

. Staphylococcus and enterobacteriaceae grow in this media.



2. Enriched media :

Addition of extra nutrients in the form of blood, serum, egg yolk etc, to basal medium makes them enriched media. Enriched media are used to grow nutritionally exacting (fastidious) bacteria.

Eg., **Blood agar**, **Chocolate agar**

Streptococci grow in blood agar media.

Blood agar

3. Selective media :

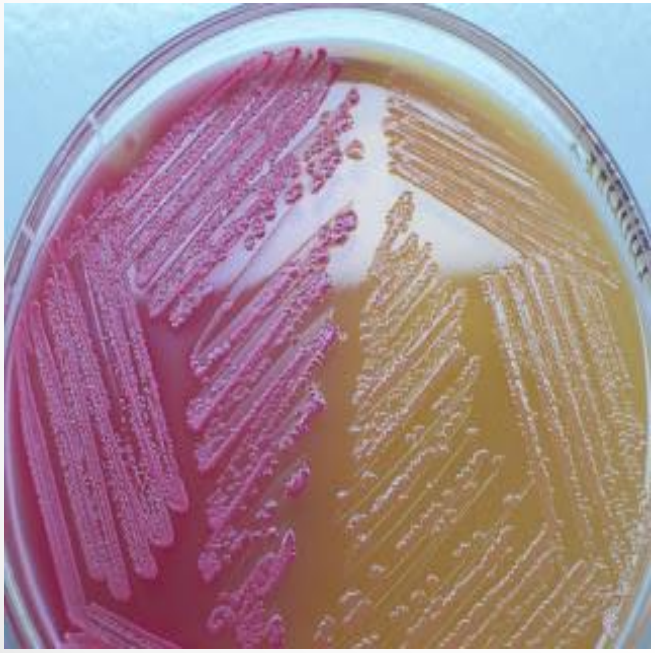
Selective media allows the growth of certain type of organisms, while inhibiting the growth of other organisms. **addition of antibiotics, dyes, chemicals, alteration of pH or a combination of these**

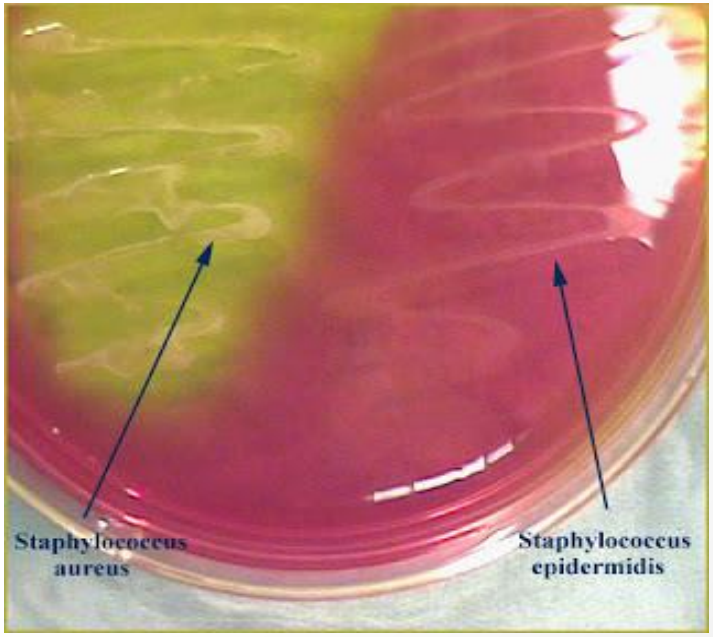
Mac Conkey's medium for gram negative bacteria

4. Differential media :

Certain media are designed in such a way that different bacteria can be recognized on the basis of their colony color, an indicator is added to the media

e.g. Mannitol salt agar

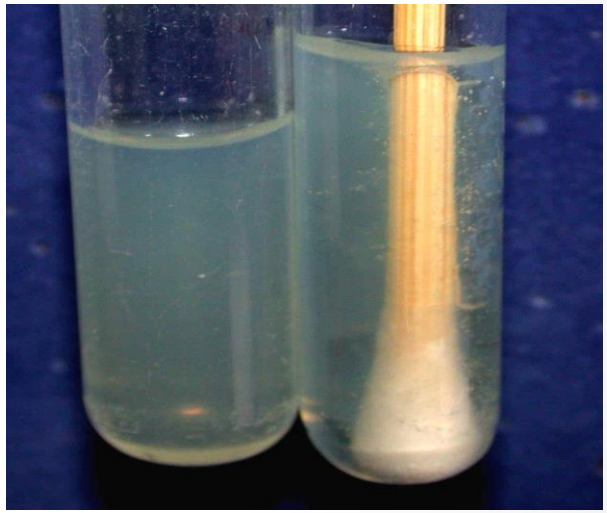




5. Transport media :

Clinical specimens must be transported to the laboratory immediately after collection to prevent overgrowth of contaminating organisms or commensals by using transport media. Such media prevent drying of specimen.

- **Stuart's medium**

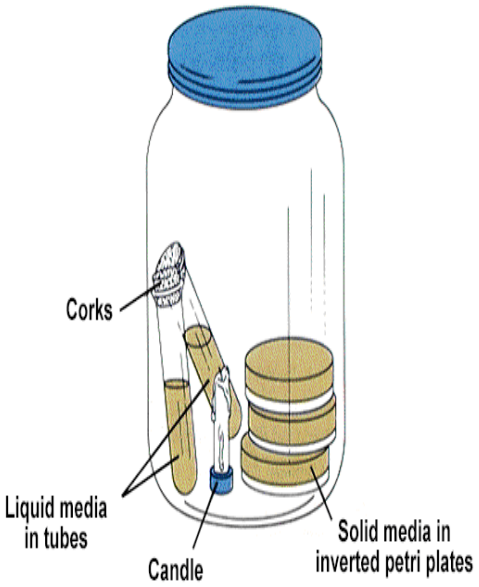


- **Cary-Blair medium**

6- Anaerobic media

Anaerobic bacteria need special media for growth, Such media may also have to be reduced by physical or chemical means.

- Boiling the medium serves to expel any dissolved oxygen. Addition of 1% glucose, 0.1% thioglycollate, 0.1% ascorbic acid, 0.05% cysteine



7. Storage Media :

Media used for storing bacteria for a long period of time.

- **E.g. : egg saline medium , chalk cooked meat broth.**

References

- Gary W. Procop,Deirdre L. Church , et al. **2017. Koneman'sColor Atlas and Textbook of Diagnostic Microbiology**.7th Edition. Jones & Bartlett Learning

- Luis M. de la Maza, Marie T. Pezzlo, Cassiana E. Bittencourt, Ellena M. Peterson. **2020. Color Atlas of Medical Bacteriology.** Wiley.