

Culture



By
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Identification of microorganisms

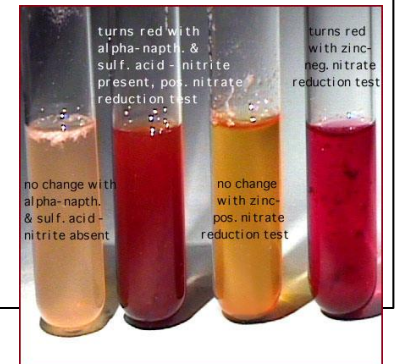
➤ Microscopical examination.



➤ Culture.



➤ Biochemical examination.



Culture



- In lab, bacteria must be **cultured** to facilitate identification & examination of growth & metabolism.
- Bacteria are inoculated or introduced to various forms of **culture media** to keep them alive.
- Inoculation must be under **aseptic conditions** to exclude contamination & other unwanted microbes.

➤ Types of culture media:

➤ Classification is according to:

- ✓ Physical state.
- ✓ Chemical composition.
- ✓ Functional type.

Culture



**CULTURE
MEDIA**

Culture

Types of culture media:

Classification is according to:

✓ Physical state.

- liquid media.
- Semisolid media.
- Solid media.

✓ Chemical composition.




- Synthetic media.
- Non synthetic media.

✓ Functional type.

- Basic media.
- Enriched media.
- Selective media.
- Differential media.

Culture

According to physical state:

Liquid media	Semisolid media	Solid media
By dissolving nutrients in <i>sterile</i> water & growth give <i>turbid</i> appearance.	By adding small amount of solidifying agent (agar 0.5%) to fluid media	By adding larger amount of solidifying agent (agar 1.5%) to fluid media.
Ex: Nutrient Broth	Ex: Soft Agar	Ex: Nutrient Agar
		





Culture

According to chemical composition:

Synthetic media	Non synthetic media
Chemically defined media.	Chemically undefined media
contain known pure organic or inorganic compounds needed for growth.	It is extract of animal or plant with unknown composition.
Used usually in research.	Ex: blood, serum, meat extract.

Culture

According to functional type:

Basic media	Enriched media	Selective media	Differential media
Contain mixture of nutrients that support growth of most M.O	Contain basic components enriched with blood or serum to support growth of some bacteria	Contain an agent that inhibit growth of some M.Os & support growth of others.	Support growth of several M.Os with differentiation between them acc. To change in colonies color
Ex: Nutrient Broth & Nutrient Agar.	Ex: <i>Streptococcus pneumoniae</i> on blood agar.	Ex: Mannitol salt agar.	Ex: Macconckey agar.
	 <i>S. pneumoniae</i>		

Culture



**ISOLATION
OF
BACTERIA**

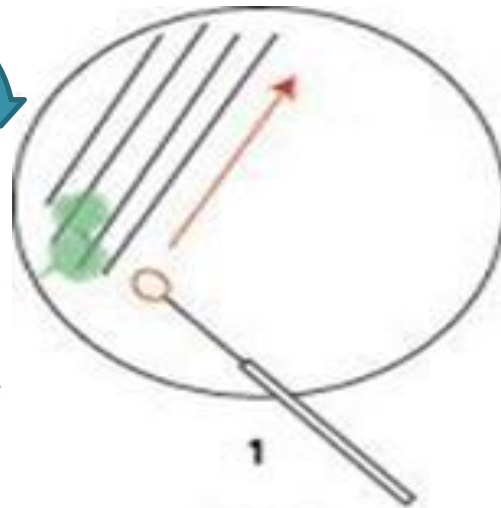
Culture

Inoculation & isolation of bacteria on nutrient agar:

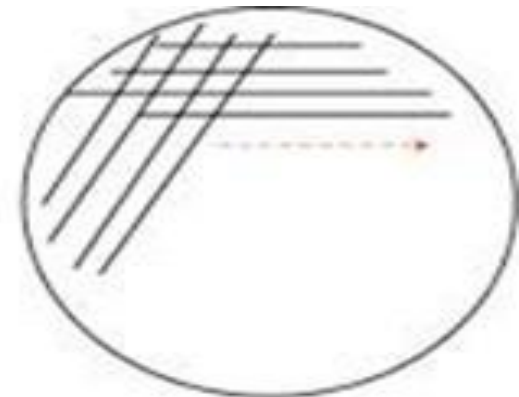
B.S



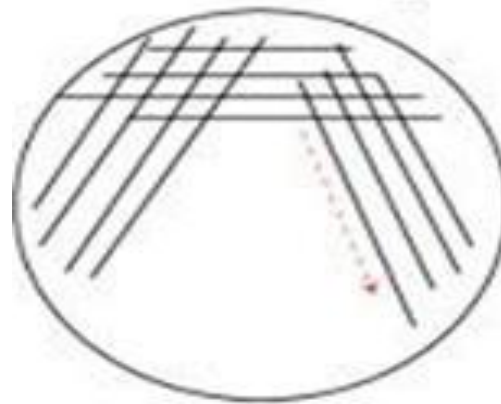
Slant



1



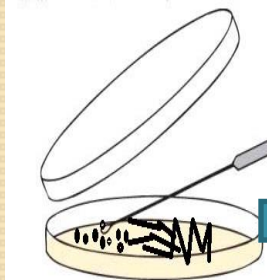
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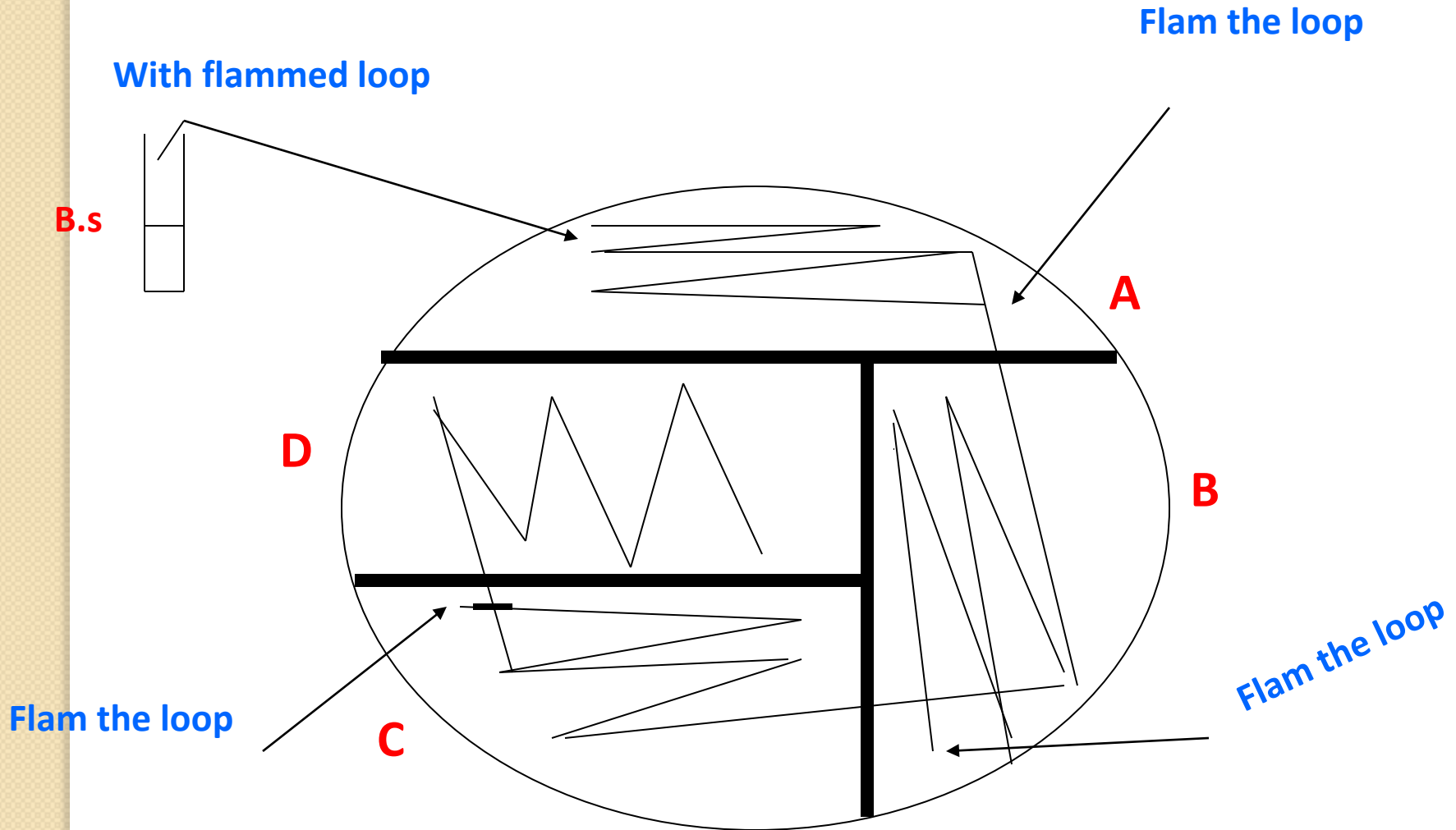


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Petri dish

Cultivation is near the flame



Culture

Then incubate at **37°C** for **24 hrs** in incubator



Culture

After incubation :





Culture



Colony Description:

Shape



Circular



Rhizoid



Irregular



Filamentous



Spindle

Margin



Entire



Undulate



Lobate



Curled



Rhizoid

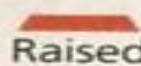


Filamentous

Elevation



Flat



Raised



Convex



Pulvinate



Umbonate

Size



Punctiform



Small



Moderate



Large

Texture

Smooth or rough

Appearance

Glistening (shiny) or dull

Pigmentation

Nonpigmented (e.g., cream, tan, white)
Pigmented (e.g., purple, red, yellow)

Optical property

Opaque, translucent, transparent

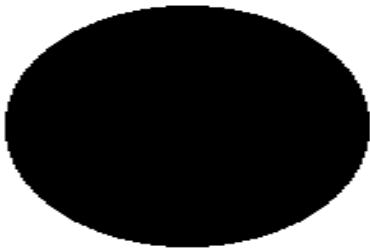


Culture



Colony Description:

Form



Circular



Irregular



Filamentous



Rhizoid

Elevation



Raised



Convex



Flat



Umbonate



Crateriform

Margin



Entire



Undulate



Filiform



Curled



Lobate

Culture

Colony Description:



Bacillus subtilis on N.A



Staphylococcus aureus on N.A

Culture

Colony Description:

Shape



Circular



Rhizoid



Irregular



Filamentous



Spindle

Margin



Entire



Undulate



Lobate



Curled



Rhizoid



Filamentous

Elevation



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Pulvinate



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**GOOD LUCK
&
SEE YOU NEXT LAB**