

Culture



By

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Identification of microorganisms

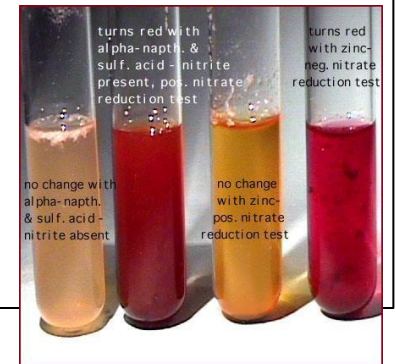
□ Microscopical examination.



□ 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**

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.

Culture

According to physical states

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 (<i>agar 0.5%</i>) to fluid media	By adding larger amount of solidifying agent (<i>agar 1.5%</i>) 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
<p>Contain mixture of nutrients that support growth of most M.O</p>	<p>Contain basic components enriched with blood or serum to support growth of some bacteria</p>	<p>Contain an agent that inhibit growth of some M.Os & support growth of others.</p>	<p>Support growth of several M.Os with differentiation between them acc. To change in colonies color</p>

Ex: Nutrient
B
N



Ex:



Ex:



Culture



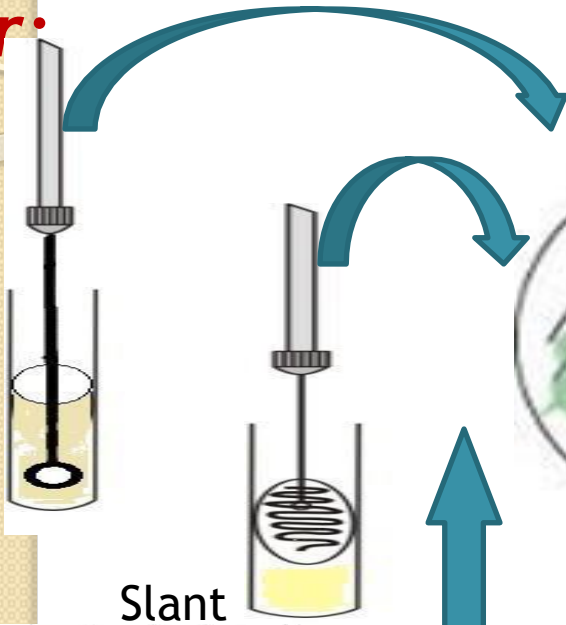
**ISOLATION
OF
BACTERIA**

**Isolation
of
bacteria**

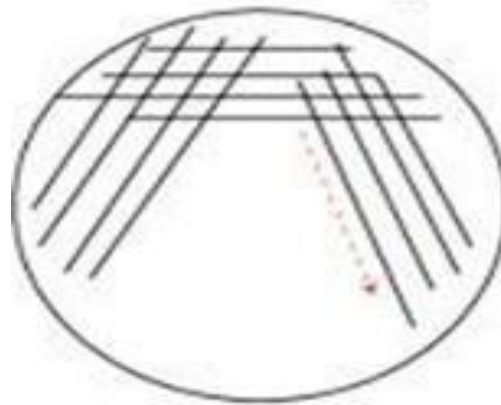
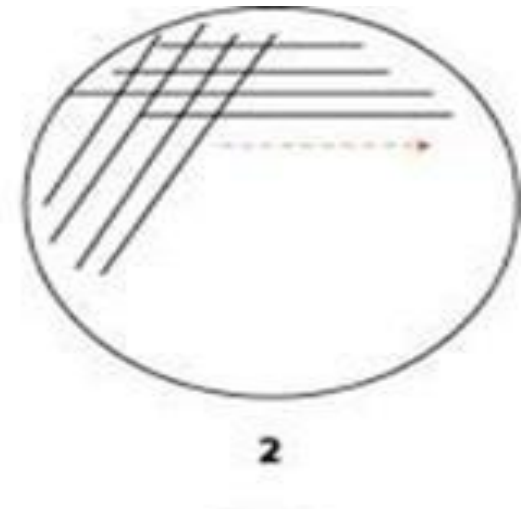
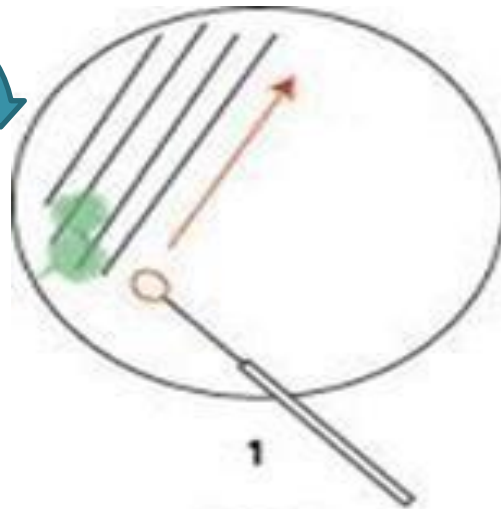
Culture

Inoculation & isolation of bacteria on nutrient agar:

B.S

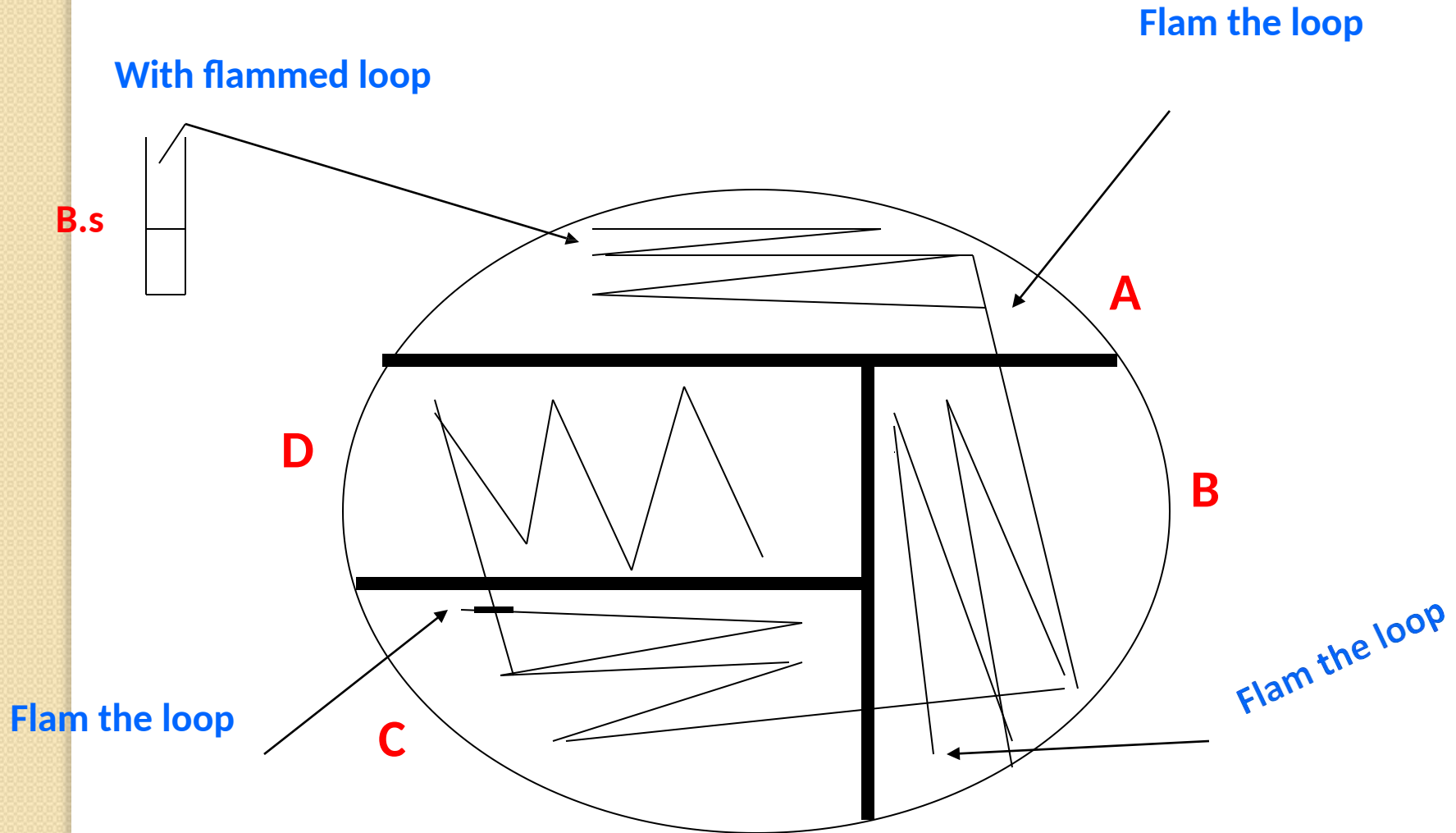


Slant



Petri dish

Cultivation is near the flame





Culture



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



Culture

After
incubation :

























Culture



Colony

D

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					



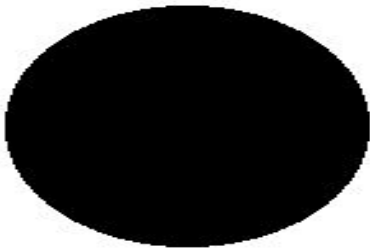
Culture



Colony

Def

Form



Circular



Irregular



Filamentous



Rhizoid

Elevation



Raised



Convex



Flat

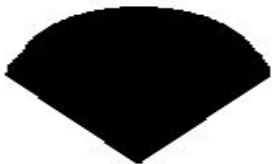


Umbonate



Crateriform

Margin



Entire



Undulate



Filiform



Curled



Lobate

Culture

Colony

Description:



Basillus subtilis on
N.A



Staphylococcus aureus on
N.A

Culture

Colony

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





Good luck

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See you next lab