

**King Saud University**  
**College of Applied Medical Sciences**  
**Department of clinical laboratory Sciences**

# **Introduction to Microbiology**

# Safety rules in the lab

- Always wear lab coat and gloves inside the lab.
- Cover any minor cuts on your body.
- Never eat, drink or smoke in the lab.
- Never mouth-pipette.
- Report any accident to your supervisor.
- Never take any culture out of the lab.

- Personal stuff will not be allowed on the lab bench top
- You must wear shoes not sandals
- Long hair should be tied back
- Clean your bench after work
- Always wash your hands before leaving the lab.

# Microbiology

- The study of small organisms and their effects on human.
  - Such as Bacteria, viruses, fungi and parasites.



- Found in:
  - Air, soil, water and in our bodies.

# Name and function of common items used in the lab

- **Burner:**

To provide area almost free of organism.

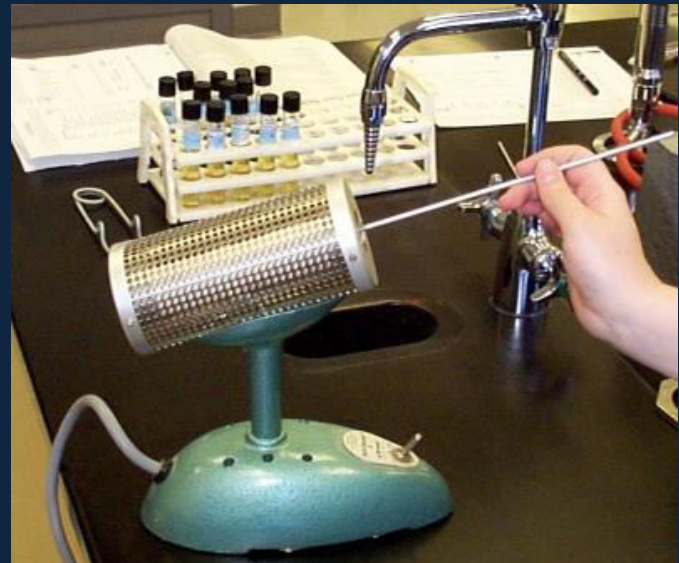
- **Bunsen burner:**

Flame heating.



- **Bacti burner:**

Electrical heating.





- **Loops:**

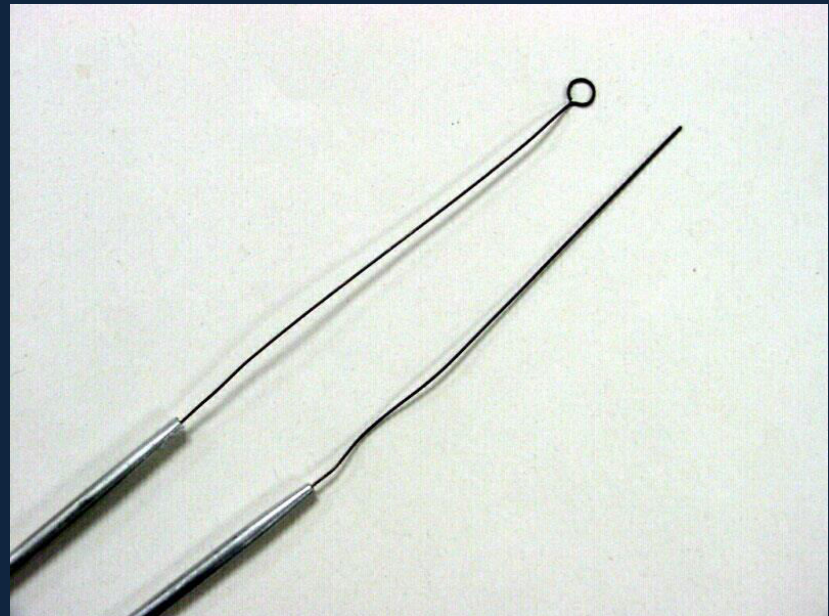
For inoculation and to transfer organism from one place to another ( e.g. from culture to the slide).

- **Wire loop:**

- Large amount.

- **Straight loop:**

- Small amount.

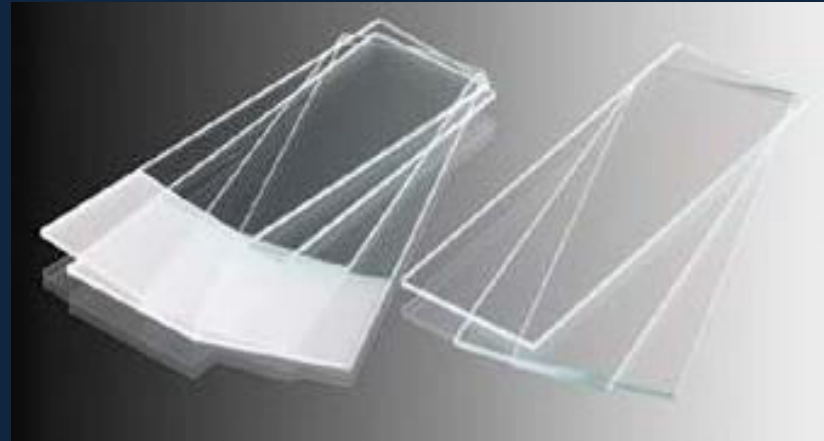


The loops are made up of special material called **(Nichrome)**. Which get heat and cool rapidly.

- **Slide:**

To place the organism on top of it to be examined under the microscope.

- Plain slide.
- Frosted end slide.



- **Cover slip:**

Used to cover the stained slide to protect it from scratch and to save it for a long time.



- **Pipettes:**

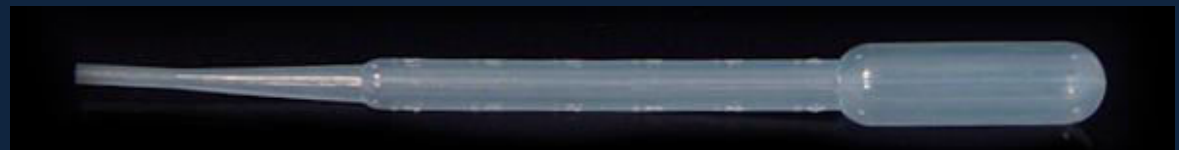
Used to transfer solution from one place to another.

- **Graduated pipette:** to transfer specific amount of solution.

Use pipette-pump with it.



- **Pasteur pipette:** to transfer non specific amount of solution.





- **Container:**

Use it to collect sample from the patient.  
It should be sterile.

- **Universal container:**

25 ml. Use to collect large amount of sample. Like urine, sputum.



- **Bijou bottle:**

5ml. Use to collect small amount of sample. Like CSF, gland fluid.



- **Petri dish:**

Use as a media container for culturing.  
It should be sterile.



- **Disinfectant jar:**

For disposal of some used items.  
E.g. Slides, cover slips and  
pipettes.

- **Disinfectant:**

A chemical substance that kills  
or inhibits the growth of micro  
organisms.



- **Incubator:**

Is a device used to grow and maintain micro-organisms. The incubator maintains optimal temperature, humidity and other conditions.

37° C is a good temperature for most bacteria which is close to the body temperature.



- **Autoclave:**

An instrument used to sterilize equipment and supplies by expose them to high pressure and temperature at 121 °C for around 15–20 minutes under 15 atm.

- **Autoclave bag:**

Made of material that tolerates high temperature.



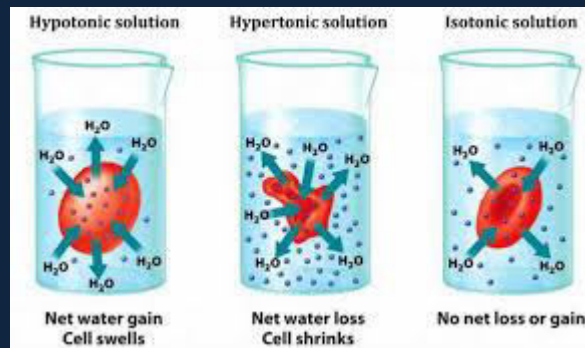


# Normal Saline

It is a sodium chloride solution 0.9% NaCl (0.9 g of NaCl dissolved in 100 ml of water).

## Function:

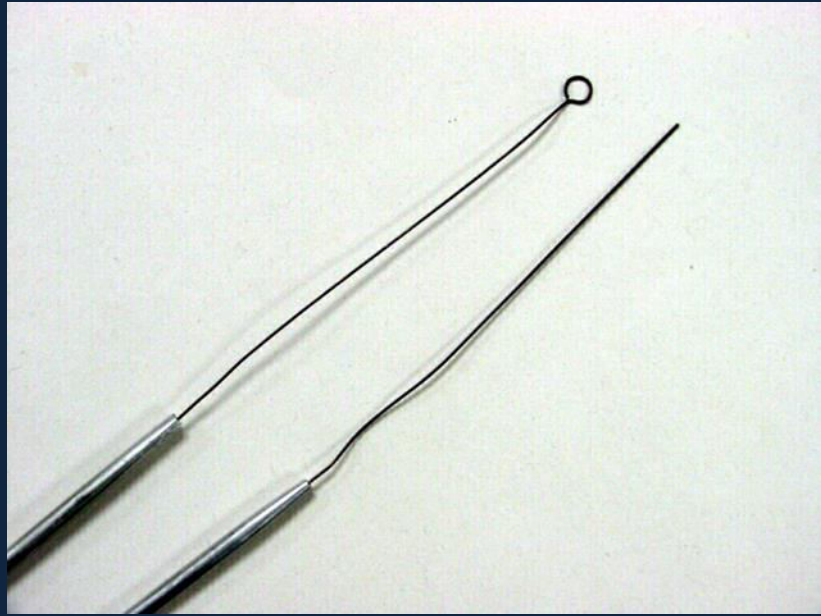
Preserve the intact morphology of the cell of the bacteria by regulating the osmotic pressure.

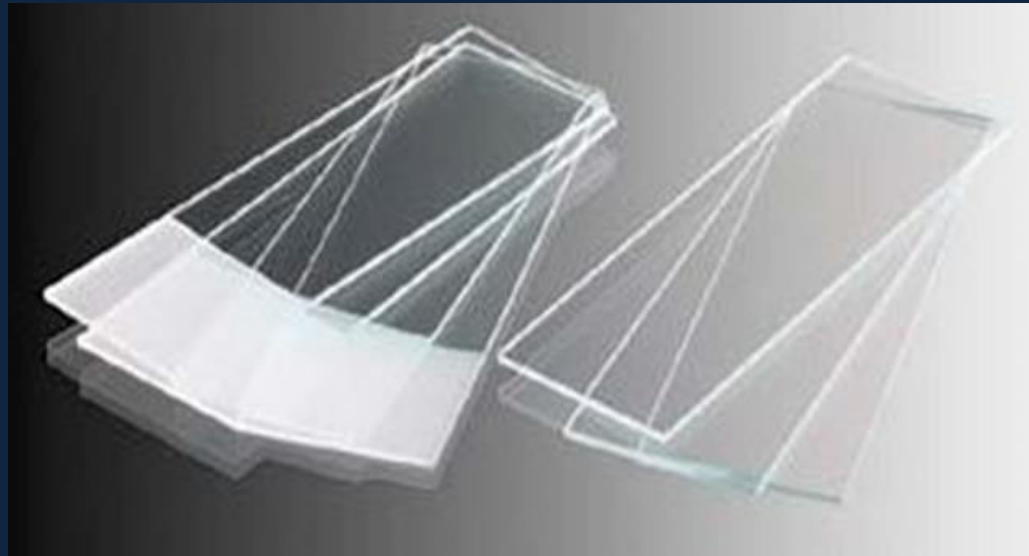


# Disposal of used items

- **Trash bag:** for non infectious material. ( e.g. Tissues, plastic covers).
- **Disinfectant jar.**
- **Autoclave.**
- **Autoclave bag:** for disposable items (Petri dish, container, gloves...).

















Thanks!

