Lab 2

equipment for biology laboratory

Deep freezer

*It is used to store mammalian cell stock culture, it is a device used to store materials when should be kept at low temperature (cell, tissues, enzyme, protein, etc.)

*This instrument is defined as freezers for -80 to -85°C and the inner volume inside are in general between 300 and 800 L.

* **Uses:** for long term storage for biological samples like DNA, RNA, proteins, cell extracts, or reagents. To reduce the risk of sample damage, these types of samples need extremely low temperatures as -80 to -85°C.

Magnetic stirrer.

Is advice used which proved mixing and keeping chemical solution at a certain time and temperature by the help of magnetic bar.

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vortex

*It consists of an electric motor and attached to a cupped rubber piece.

* It used to mix sample at certain speed and duration, is a simple device used commonly in laboratories to mix small vials of liquid.

pH Meter

Biological functions are very sensitive to changes in pH and hence, buffers are used to stabilize the pH. A pH meter is an instrument that measures the potential difference between a reference electrode and a glass electrode.

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pipette

Is a laboratory tool commonly used in chemistry, biology and medicine to transport a measured volume of liquid.

Pipette type	Volumes (µL)	Tip color
P 10	0.5-10	White
P20	2–20	Yellow
P 200	20-200	yellow
P 1000	100-1000	blue

Micro centrifuges

Is a piece of laboratory equipment, driven by a motor, which spins liquid samples at high speed, there are various types of centrifuges, depending on the size and the sample capacity, laboratory centrifuges work by the sedimentation principle, where the centripetal acceleration is used to separate substances of greater and lesser density. devices for small tubes from 0.2 ml to 2.0 ml (micro tubes), with accelerate 30,000 g used to isolate nucleic acids such as DNA.

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Electronic balances: - use to quickly and accurately measure the mass of a substance. This important in experiments that require precise amounts of each substance to achieve the desired results.

Microscope Optical Compound (uses a microscope).

Compound optical microscopes use visible light to magnify the image of specimens, as characterized by compound optical microscopes .The image is transferred using two types of lenses, one of which is placed near the desired object Watching it, this lens has a short focal length, while the second lens is the lens through which the observation is done

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A Petri dish is a shallow, cylindrical container made of glass or plastic with a lid. Biologists use it to culture cells, such as bacteria and fungi. It is the most widely used type of culture dish

loop

Used for transfer of bacterial cells from medium to another (as colony or as drop (0.01 ml), sterilized by the flame of burner before and after using.

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Burner:

May be gaseous or alcoholic, used for sterilize the loop, needle and other metal tools by the flame (dry heat sterilization).

Oven

The sterilization is (Dry heat sterilization), the death of bacteria take place by oxidation. Used for sterilize the glas wares and some of metal tools.

Temp. = 180 C

Time=.half & hour

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Autoclave

Equipment with high temperature, pressure and steam to sterilize the culture media and some of metal tools and glass wares.

The temperature = 121 C (250 F)

Pressure = 2 atm.(205 Kpa)

Time = 10 – 30 minutes