



CENTRAL LABORATORY

Molecular Biology and Biotechnology

R&D Center

METU, Ankara

General Research and Sample Preparation Lab (GKL)

GKL is a laboratory which is frequently applied at the preparation stage before experiments are made with samples on the basic equipments. All the instruments in GKL are supplementary equipments.

FUNDAMENTAL PRINCIPLES

Centrifuges

The Centrifuges in R&D Center are the following;

Preparative Ultra Centrifuge (Hitachi/CP100WX): has the potential to speed up to high rates via vacuum system. Maximum speed is 90000 rpm.

High Speed Centrifuge (Hitachi/Himac CR22GII): enables to speed up to 22000 rpm.

Cooling Centrifuge (Sartorius Sigma/3K30): Maximum speed is 20000 rpm with the specification of cooling capacity to -20°C.



Cooling Microtome (CRM)

Cooling Microtome (Leica/CM1950 Ag):

CRM is used to cut very thin frozen sections of micron size for biological, medical and industrial applications.

Laboratory Balances (Mettler Toledo, Sartorius): There is a precision balance with readability of 0,01 mg used for pipette verification in addition to the other three precision balances in R&D Center.

Vacuum Concentrator/Lyophiliser (Heto/Vacum centri):

The Heto/Vacum centri is built on the principle of vacuum concentration of samples using a condenser temperature as low as -115 °C or drying at the room temperature.

Vacuum Oven (Fistreem/Gallenkamp): By using reduced pressure, the vacuum oven enables samples to be dried at low to higher temperatures.

Rotary Evaporator (BUCHI/VAC V-500): is used for removal of solvents from samples by rotary evaporation at distillation temperature under a vacuum.



Rotary Evaporator (RE)



Vacuum Oven (VDO)



Vacuum Concentrator/Lyophiliser (VFD)

Cell Disrupters

The Cell Disrupters in R&D Center are the following;

Dismembrators (Sartorius/Mikro-Dismembrators U & S): can be used to grind rigid or frozen material at a selectable shaking frequency as the grinding balls for biological samples of small volumes are filled into the shaking flasks. The shaking frequency is upto 2000 rpm and 3000rpm.

High Pressure Homogenizer (Constant Systems/Z PLUS): is used for disruption and homogenization of bacteria, yeast, fungi etc. by using high pressure. Minimum sample volume should be 50 ml.

Agitator Bead Mill (WAB/DYNO-MILL MULTILAB): for grinding of microorganisms including bacteria, yeast, filamentous fungi etc. and animal cells with glass beads. Grinding container volume is 600 ml.



Agitator Bead Mill (ABM)



High Pressure Homogenizer (HPH)



Dismembrators (CD 01 and CD 02)

Cooling Shaking Incubator (Shel Lab/SI6R-2): also known as environmental shaker, is often used for cell culturing, cell aeration and solubility studies.

In addition, pHmeter, Distilled and Deionized Water System, Autoclave and Ice Machine are available in GKL.

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