GOOD LABORATORY PRACTICES

Good laboratory practices demand safe handling of chemicals and equipments, systematic work, basic level of hygiene and proper coordination. Aseptic condition is the essential criterion to carry out the tissue culture experiments. Any type of contamination is intolerable. In order to fulfill these conditions cleanliness is the first and foremost requirement. All the surfaces, vessels, glasswares, chemicals, media and explants need to be sterilized.

3.1 Rules for good laboratory practices

1. Disinfect work surfaces at the start and end of every laboratory activity.
2. Liquids need to be kept away from the edges of the benches and shelves.
3. Mouth pipetting must be avoided and mechanical pipetting devices need to be used.
4. Before reuse or disposal of the contaminated glasswares, plastic wares, they must be autoclaved or placed in 10% sodium hypochlorite solution.
5. Disposable gloves must be worn while handling toxic and corrosive materials.
6. Cultured, glasswares, vials, containers must be properly labeled.

- Good quality glass must be used in the experiments that use corrosive liquids or where heating of chemicals are carried out.
- Eating and smoking must be avoided in the laboratory.
- Lab coat, gloves and lab slippers must be worn.
- First aid kit, fire extinguishers, clean up materials must be kept at easy reach.
- All types of small and big accidents in the laboratory must be immediately reported to the instructor.
- Hands must be properly washed and protective clothing must be removed before leaving the laboratory.
- Refrigerators and deep freeze must be periodicaily cleaned out.
- Plastic wares used for DNA, RNA and protein experiments, transformation work should not be reused.
- Regular fumigation and disinfection of laboratory must be carried out after short intervals.
- Before leaving the laboratory all the electric switches must be checked, instruments not to be used must be turned off and heat source must be immediately turned off.
- Ultra violet light is very dangerous especially for eyes; hence, exposure must be minimized by shielding the source and by wearing protective helmets and goggles.
- Some of the dyes and chemicals are toxic and are powerful mutagens hence gloves and masks must be worn and a fume hood be used while handling them.

3.2 Maintenance of hygiene in the laboratory

1. Laboratory should be provided with a double door entry as far as possible.
2. The wash and sterilization room must be well separated from the main laboratory.

3. The laminar hood must be placed in a clean room and must be cleaned at regular intervals by replacing the filters and disinfecting the cabinet.
4. The laboratory must essentially be cleaned every day with a suitable disinfectant dissolved in water.
5. Laboratory must be fumigated at regular intervals to prevent contamination.
6. The culture racks and test tube racks must be wiped with 70% ethanol periodically
7. Before entry into the laboratory all the personal belongings should be left out of the laboratory.
8. Soon after entry into the laboratory, hands must be washed properly and a clean laboratory coat and laboratory slippers must be worn.
9. The laminar cabinet must be sterilized thoroughly with ethanol and turn on the UV light along with the fan for 30 minutes for disinfection.
10. Cover the mouth with a mask and wear a cloth head gear and sterile gloves.
11. Lit the flame in the laminar cabinet and chose the rear portion of the laminar cabinet as it is the most sterile area.
12. Open all the autoclaved vessels and media in the air flow of the cabinet, near the flame.
13. As soon as the work is over, the waste must be discarded very soon. Any bacterial and fungal contaminations must be either pre treated with sodium hypochlorite or be autoclaved, before disposal.