

Molecular and cell biology

Lab (1)

Lab safety

Laboratory Safety Standards are in use in clinical and chemical labs, testing labs, and research and development labs in both industrial and educational facilities. Lab safety standards pertain to protective clothing and equipment such as lasers, as well as procedures and lab designs that promote safety

Basic safety rules

- The teaching laboratory is a classroom and your full attention is required. For both safety reasons and to avoid disrupting classroom activities you must silence all cell phones.
- All persons in laboratories, including students, staff, and visitors, shall wear safety glasses, goggles, or face shields at all times where potential eye hazards exist. Goggles are recommended where chemical splashes are possible. If contact lenses are to be worn, the eyes should be protected by goggles when potential eye hazards exist.
- Eating, drinking, chewing gum, and applying cosmetics are prohibited.
- Do not store food or beverages in the same refrigerators or freezers with chemicals, biohazards, or radioactive materials.
- Appropriate gloves are essential when working with hazardous substances. All glove materials are not equally effective in protection from hazardous substances.
- Never conduct unauthorized experiments. Please immediately report any unsafe behavior to the instructor.
- Wear appropriate clothing. In particular, you must wear closed-toed shoes in the laboratory. Long pants are highly recommended. Avoid wearing your best clothes, and if you have long hair tie it back. Avoid wearing dangling jewelry.
- Wearing an iPod, Bluetooth, or any other device that interferes with hearing is not allowed.
- Never pipet anything by mouth.
- The work area must be kept clean and uncluttered. All chemicals should be labeled and stored properly.

- Never work alone in the laboratory.
- The hazards of chemicals used should be known (e.g., corrosiveness, flammability, reactivity, stability, and toxicity).
- Always pay attention to your surroundings and be aware of what others are doing. Always be courteous مهذب كرتيس.
- Remove contaminated gloves before touching common use devices (door knobs, faucets حنفيات فاستس, equipment); discard gloves before leaving the laboratory.
- Always wash hands and arms with soap and water before leaving the laboratory.
- No smoking!

Hazardous materials

- Both liquid and dry chemicals can be flammable, poisonous, carcinogenic, etc. Pay attention to special instructions, such as to work with a substance only in a fume hood.
- Biological hazards include bacteria and body fluids, such as blood. Handle with appropriate care, and dispose of biological hazards as instructed.
- Dispose of hazardous materials as instructed. Never put anything down the sink without checking with an instructor.
- Clean up spills انسكاب السوائل and broken glass. Don't handle broken glass with your bare hands. Use a broom and dustpan مكنسة ومغسلة, and throw away all broken glass and disposable glass pipets, coverslips, and other sharp or easily breakable glass in a container for glass disposal only. Notify the instructor immediately of all incidents

Hazardous equipment

- If appropriate, turn off equipment that isn't being used.
- Do not use a Bunsen burner unless instructed to do so.
- Keep liquids and chemicals, especially flammable materials, well away from any heat source or electrical equipment.
- If any electrical equipment is malfunctioning, making strange noises, sparking أثار, smoking, or smells "funny," do not attempt to shut it off or unplug it فصل الجهاز. Get an instructor immediately. It is imperative that the instructor know of any equipment problems.

General conduct

- Keep coats, purses محفظة, backpacks, books, and similar materials away from your work area and out of the way of your colleagues كاليكس. Please stash خبأ such items in an appropriate, perhaps designated location. We mustn't force people to step over a backpack placed in an aisle ممر أيل between benches, for example. Also, consider what will happen to such items if someone spills chemicals or biohazardous materials on them.
- Any computers in the classroom or lab are NOT for personal use
- On occasion احان, special equipment, e.g., stir plates تحريك and vortexers, will be used from the storeroom and this equipment should be returned complete, clean, and dry at the end of the experiment.
- When using equipment, be certain that you understand how to operate the device safely. Any equipment or areas you use must be cleaned after use. For example, the centrifuges should be wiped out and the rotors rinsed and allowed to drain.
- Do not waste materials, including disposable items and reagents. This practice is economically and ecologically important. Calculate how much you will need and take only a slightly greater amount (about 10% excess).
- Do not return excess reagent to the stock bottles. Discard properly at the **end** of lab period. Pay attention to the discussions prior to the experiment for special disposal instructions.
- Do not pipet directly from bottles or jugs ابريق containing buffers or reagents.
Exception: you may use an automatic pipetor to obtain stock solutions of small volumes (less than 2 ml); be careful to use a clean pipet tip and do not contaminate these solutions.
- Put the lids on stock solutions and reagents after using them. Otherwise solutions can become contaminated or just evaporate. Many solid reagents are hygroscopic رطوبه and pull water out of the air.
- Do NOT write on plastic/glass labware; use lab TAPE.
- If you don't find some of the required equipment or reagents, ask the instructor or a TA(teaching assistance) for help.
- On the last day of lab, your drawer must contain ALL the items on the list; REMOVE all labels and EMPTY all containers.