

Common sense for laboratory work at the Biology Education Centre



Common sense for lab work at IBG

Contents

- 1 Welcome to our course laboratories**
- 2 Localities**
 - 2.1 Lab coats
 - 2.2 Lockers
- 3 Regulations**
- 4 General routines**
 - 4.1 Autoclaves and sterilisation ovens
 - 4.2 Dish washing
 - 4.3 Bacterial spill
 - 4.4 Solutions and media
 - 4.5 Broken or faulty lab equipment
 - 4.6 Gloves
 - 4.7 Washing lab coats
 - 4.8 Notification of work injuries and accidents
- 5 Safety**
 - 5.1 General
 - 5.2 In case of fire
 - 5.3 Eye safety routines
 - 5.4 Working with chemicals
 - 5.5 Working with liquid nitrogen
 - 5.6 Working with injection needles
- 6 Waste**
 - 6.1 General
 - 6.2 Handling of non-infectious waste
 - 6.3 Handling of infectious waste
 - 6.4 Handling of chemical waste
- 7 Laboratory instruments**
 - 7.1 General
 - 7.2 Micropipettes
- 8 Laboratory personnel**

1 Welcome to our course laboratories

This booklet contains instructions for students and lab teachers for laboratory work at IBG, and clarifies the responsibilities of students, lab teachers (teachers on the course) and laboratory staff (IBG's permanent lab staff). Read the booklet before starting the first lab.

The hope is that we will increase the safety and well-being at our laboratories. If you are unsure about something, don't hesitate to ask!

2 Localities

2.1 Lab coats

Lab coats can be bought from the laboratory staff (ibg-lab@ibg.uu.se). Payment for the coat can only be made by bank card or Swish.

2.2 Lockers

In the A-corridor's level 0 at BMC there are a number of changing rooms with lockers. You need an access card to enter these rooms. Students who want a locker can sign out the access card at BMC's reception: B7, floor 1.

At EBC, there are lockers in the basement under the laboratory corridor. Bring your own padlock. Please note that the lockers must be emptied at the end of the spring semester. After that, the remaining locks are cut and the lockers are emptied of their contents.

3 Regulations

- **Outer clothing and bags must not be stored inside the lab. If hangers are not available next to the lab, lockers must be used.**
- A lab coat must be used.
- Students should only work under the supervision of a lab teacher or laboratory assistant.
- No eating or drinking in the laboratory.
- Be careful with hand hygiene and do not use gloves outside the laboratory.
- At BMC: Do not take glassware from the chemistry cabinets. Glassware is available in the dish room and in the hallway outside the dish room.
- Check that windows are closed when going home. Turn off the lights.

4 General routines

4.1 Autoclaves and sterilisation ovens

The lab personnel manage autoclaves and sterilisation ovens. Never put opened containers with measuring pipettes or similar back in the storage cabinets.

4.2 Dish washing

Dish wagons are available in every laboratory. Rinse and remove labels on items to be washed. Remember that nothing contaminated may be placed on the dish wagon! Tubes and glass materials containing bacteria must be killed with jodopax (use gloves as jodopax is allergenic). The iodine solution must not be poured into the

drain, but poured into containers for destruction. The containers must be labeled with contents.

4.3 Bacterial spill

Treat bacterial spill with 70 % ethanol and wipe it up. Use 70 % ethanol for bench sterilisation.

4.4 Solutions and media

Course leaders or lab teachers send order lists and material lists to the laboratory staff **at least 4 weeks** before the start of the course (ibg-lab@ibg.uu.se)!

4.5 Broken or faulty lab equipment

When you notice that any lab equipment is broken, put it in the marked box. Label broken equipment with what is wrong and contact laboratory staff.

4.6 Gloves

Do not use the same gloves for an entire lab session, but change gloves after different steps. Gloves do not protect against prolonged contact with chemicals. In case of contamination - change immediately and throw the gloves in a hazardous waste box!

4.7 Washing lab coats

Please wash your lab coat at least once per semester.

4.8 Notification of work injuries and accidents

If accidents occur, lab teachers must contact the safety representatives at IBG: Lena Henriksson (lena.henriksson@ibg.uu.se) and Hanna Olsén (hanna.olsen@ibg.uu.se). They will help with the reporting.

If you suffer a work injury, report this to the Kammarkollegiet:
<https://www.kammarkollegiet.se/vara-tjanster/forsakring-och-riskhantering/annal-skada/sjukdom-eller-olycksfall>

5 Safety

5.1 General

Check location for emergency shower, eye wash equipment and fire hydrant as well as escape routes. **Lab teachers have a safety briefing with students at the start of the course.**

Lab teachers must have made a risk assessment for each lab. Previous risk assessments are placed in folders at Carin (BMC) and Banafsheh/Peter (EBC).

5.2 In case of fire

- First save those who are in obvious danger.
- Call the fire department by dialling 112.
- Warn others that are threatened by the fire.
- If possible, extinguish the fire.
- Evacuate the building and head to the assembly point.
 - BMC: The field outside the main entrance to Rosendalsgymnasiet.
 - EBC: The grassy area by the parking lot towards Norbyvägen.
- Do not use elevators.
- Shut doors to prevent smoke from spreading.
- If possible, allocate someone who meets the fire brigade.

5.3 Eye safety routines

- If an accident occurs use the eyewash.
- In more serious cases, contact the eye clinic.

Contact lenses should not be worn in the laboratory as this may increase the risk of eye damage.

5.4 Working with chemicals

- Read the warning text before using a chemical!
- Hazardous chemicals that have spilled onto the floor or bench are covered with absorbents, e.g. vermiculite, and collected in cardboard for chemical waste. Contact the laboratory staff.
- Work in fume hoods and use safety glasses and gloves.
- In case of phenol splash on the skin - spray with PEG 400 and rinse thoroughly with water.
- When weighing chemicals, clean the scale afterwards. If spills occur that require special equipment, protective equipment is available in the chemical room, such as visors, heavy rubber gloves, gas mask, dust brush and shovel.
- If you make your own mixtures, containing dangerous chemicals, they must be labeled with the chemical name and danger symbols.

5.5 Working with liquid nitrogen

- Use a special thermos for liquid nitrogen storage. An ordinary thermos might explode.
- Use protective glasses and thermal gloves.

5.6 Working with injection needles

- Do not put the protective cap on again after using the needle.
- The needle must be thrown away directly in a special waste container.

6 Waste

6.1 General

It is important to handle and destroy lab waste according to current laws and regulations to protect people and the environment.

Assessment of which waste is generated must be included in the risk assessment for the laboratory. Ask the lab teachers if you, as a student, are unsure about how to handle and destroy lab waste, e.g., infectious waste etc. Infectious waste includes toxins, prions, viruses, bacteria (e.g., *E. coli*), fungi and parasites that can cause disease in humans, animals or plants. Remember that blood is considered infectious.

6.2 Handling of non-infectious waste

- Paper towels should be thrown in a **wastebasket**.
- Sharp and cutting materials such as e.g., Pasteur pipettes, needles, scalpel blades and object glasses are thrown away in **yellow plastic containers** (Hazardous waste – Including glassware!).
- Empty paper boxes and plastic that can be recycled are placed in a marked box (Recycling).

6.3 Handling of infectious waste

- Contaminated gloves, paper towels, Eppendorf tubes, tips, plates as well as contaminated piercing/cutting material are thrown into yellow containers for hazardous waste.
- Biological waste such as small animals, organs, tissues and blood goes as hazardous waste but is placed in a separate container that is kept in a freezer.
- Remaining bacterial cultures are killed with jodopax and poured onto vessels for destruction. The containers must be labeled with contents.
- Genetically modified organisms/microorganisms (GMO/GMM) refer to organisms with genetic changes that did not occur naturally. To prevent GMOs and GMMs from

harming people and the environment, these are handled as biological waste or infectious waste and thrown away in the yellow waste boxes found in the labs. At BMC, these yellow boxes are marked with a white label to declare the contents.

6.4 Handling of chemical waste

- Chemicals e.g., phenol, are poured into plastic bottles/cans and stored in fume hoods. Label the bottles carefully with contents and date.
- Do not mix different chemicals without consulting the lab teacher or laboratory staff.
- Acrylamide gels are disposed of in yellow containers for hazardous waste.
- No corrosive, flammable, toxic or environmentally hazardous substances may be poured down the drain!

7 Laboratory instruments

7.1 General

Ask the lab teacher/laboratory staff for a manual or instruction before using an instrument. Broken equipment must be marked with a description of the error, and the laboratory staff notified.

7.2 Micropipettes

- The pipette is a precision instrument. Handle it carefully!
- Store the pipette in its holder.
- Avoid removing the ejector. It acts as a support for the tip holder.
- Use the same pipettes during one experiment.
- If the pipette feels stiff or different, return it to the laboratory staff for service, or label it and place it in the marked box for broken material.

8 Laboratory personnel

We work in the laboratory:

EBC:

Banafsheh Seyyed Khezri, banafsheh.seyyed@ibg.uu.se,

018 - 471 6431 (kemikalier & material)

Peter Lillhager, peter.lillhager@ibg.uu.se, 018 - 471 6431 (chemicals and materials)

Karina Lagerström, karina.lagerstrom@ibg.uu.se, 073 - 469 75 53 (materials)

BMC:

Peter Lillhager, peter.lillhager@ibg.uu.se, 018 - 471 4162 (chemicals & materials)

Carin Backlin, carin.backlin@ibg.uu.se, 072 – 999 97 47 (chemicals & materials)

Karina Lagerström, karina.lagerstrom@ibg.uu.se, 073 - 469 75 53 (material)

Manager (located at EBC):

Afsaneh Ahmadzadeh, afsaneh.ahmadzadeh@ibg.uu.se,

018 - 471 4125 / 070 - 42 50 113

Technician (located at BMC and EBC):

Mats Omarin, mats.omarin@ibg.uu.se,

018 - 471 4134 / 070 - 4250 114

Broken equipment: Label it, contact laboratory staff and tell them what's wrong, or label it and put it in the marked box.