ARIA

Lab safety rules

iGEM upf. prbb arquicalcul TASALIA SOCIEDAD DE TASACIÓN

General Lab Rules and Guidelines

1. Plan in advance and keep all areas clean

In general, plan your experiments ahead and make sure you have all you need: reagents, material and time.

Once you have finished any experiment or protocol remember to clean all the areas you have used. If necessary, replace the filter papers on the benches, use bleach/ethanol/water to clean any spill, and do not abandon dirty material on the benches, cabinets, sinks or microwave area.

Remember to turn off the equipment once finished and return everything to its place, especially reagents that need to be kept in the fridge/freezer.

2. Common sense

Label your samples, tubes, reagents and boxes with your (or your group/principal investigator) name and a date (if possible) and ask Jessica, Maria M. or your group colleagues where they should be stored.

If you notice that we are running out of any common material (tips, gloves) or shared reagents (dNTPs, LB, weight markers, …) please add it in the *SynBio Orders* excel sheet you will find in the drive; otherwise, it will never be ordered. Similarly, if you finish the towel paper roll/ ethanol spray/ tips from common areas or fill the containers… please replace them. If you cannot find them, ask someone but do not just leave it empty.

In general, respect other users' material. If a tip box, water, tubes, reagents, kits... are marked with someone's name, please, do not take/use them without asking. Also, if you have any doubts about samples, protocols, material, reagents, or equipment in the lab, do not be afraid to ask. Better safe than sorry!

3. Agarose gel area

- After manipulating agarose (or any reagent) make sure that the agarose flask is well closed and not left open as the product could get spoil.
- Please store the "green SYBR safe" or any other fluorescent DNA stain you are using protected from light. If you start a new tube please mark it (e.g. with an asterisk "*") to let other people know that it is the one in use. If you start the last one, please, write it in the *Synbio orders* excel as a new one should be bought.
- If the tip container is full please replace it.
- After you have read your gel please turn off the electrophoresis supplier and light (only if there is no other gel running) and close the lid of the electrophoresis tank.
- Clean the casting tray and the combs ("peines"), put in order and tidy everything: bench, pipette, tip box... change the filter paper if necessary.
- Once the casting tray and the combs are dry please store them in the *gel material* box.

4. Centrifuge

Please, make sure you balance your centrifuge properly (you can use the balance tubes above the centrifuge). You can make use of the precision scale next to the electrophoresis area. If the centrifuge starts vibrating, stop and check the load balances. If you use the centrifuge with cold temperature, and it is wet after you use it, please clean it. Finally, after using any centrifuge, check that you do not leave any plate or tube inside and remember to turn it off, if no one is going to use it in that moment.

5. Pipettes

A set of pipettes will be assigned to you (or to your group) by Jessica/Maria M. but some pipettes may be common for all the lab users. If you notice that a pipette is not working adequately, please tell Cristina. Please, always make sure that you know the limits of each pipette and that in each occasion you are using the correct pipette and tips for the volume that you need. Be aware that if you overload (or underload) a pipette you will uncalibrate it, and you (and all the others after you) will not get the correct volume anymore. If any liquid enters the pipette, please clean (or ask for help to clean) the pipette with ethanol/bleach and a tissue.

6. Thermocyclers

Before starting an experiment confirm that there are thermocyclers available and sign up in the corresponding thermocycler calendar sheet which machine and time slot you want to book. If you change your mind, remember to delete your name. If someone stops the thermocycler when the program has finished, they will store your PCR in the fridge (there is a tip box in the bottom shelve labeled with each PCR block). In general, if you notice that your PCR program has finished please stop it and store the amplified samples in the fridge.

7. Fridge and freezers

- Each time you open a fridge/freezer (and also if you are the last one leaving the lab), please check that all fridges and freezers are closed properly (especially when ice is accumulated at the doors).
- While searching for reagents or samples do not keep the door of the fridge/freezer open for long. It is much better to take the box/full rack where you keep your samples or reagents out from the fridge/freezer, look for what you need and then place it back safely once you have finished than to keep the door open forever.
- Note that temperature fluctuations in the lab fridges/freezers are detected by sensors which send automatic (annoying) messages (at night and including weekends) to whoever of us is in charge.
- Storage tips: Please, do not keep PCR tubes free in the fridge, it is highly possible you'll lose/mistake those tubes, you can use plastic bags/tape to properly label the tubes. Similarly, do not leave free Eppendorf tubes and do not store your samples in the colored eppendorfs racks; these should only be used to keep your samples while performing an experiment or for very brief storage of samples during a particular short project. Otherwise it is much safer to store all your tubes and samples in boxes.
- Always label your samples, PCR tubes and plates. Unidentified material can be easily changed from one place to another and finally thrown away by mistake.

- If you want to keep bacterial plates for long periods please store them in the boxes of the 4ºC room (as fridge space is limited). Similarly, for oligo stocks/glycerol stocks… there are specific places in our -80ºC freezer (remember to update the corresponding excel from the common drive).
- Freezer space is not random but assigned to the PI groups. Please, do not leave your samples or reagents on any random drawer. Ask your supervisor (or Jessica/ Maria M.) where you can store them.
- If you are a short term visitor, make sure you inform your supervisor where you have your samples and reagents, PCR products or other derivatives from your experiments and make sure they are properly labeled with their name. Otherwise they may be easily lost. Also, as our space is limited, we will really appreciate to know when this material can be eliminated (maybe after publication) or sent it back to you when settled in another lab.
- Before leaving the lab for good, throw away old or non-relevant samples, primers, reagents, etc., and notify your supervisor where the relevant ones are kept.

8. Nanodrop

- Specially the first time you use the instrument, make sure someone explains to you the correct protocol and/or carefully read the instructions attached to it. Please, make sure you never use ethanol to clean the Nanodrop pedestal but de-ionized water.
- If you need to keep your results in the computer create a folder in the USERS folder and save it there. Note that if the computer crashes there will be no back-up; thus, we strongly recommend making your own copies of your files/ write it down.
- After using the nanodrop, make sure you clean the pedestals, but don't leave the cleaning wipe between them.

9. Milli-Q water bottles

- When you open one deionized water bottler write the date on it and make your own falcon/Eppendorf aliquot to avoid contamination, especially when used among multiple lab members.

10. Tip boxes

- Each time you use and finish a box of tips, please make sure you remove all the tapes around and put the empty box in the white tray found next to the PCR machines (in the mammalian lab) or the sink (in the microbiome lab).
- Please, write "STERILE" on those tip boxes used in the sterile areas, as no one will be confident to use them for sterile purposes (even yourself!), and they will accumulate all around the flame bench.

11. Waste containers

- If you notice that any waste container is full, please close it correctly (ensure that it cannot be opened), leave it at the room next to the toilettes (7th floor) and replace it for a new one.
- While a waste container is not yet full, please do not close the lid totally as then we will not be able to open it again.

12. Aluminum foil and plastic wrap

- Aluminum foil and plastic wrap in the lab are not for domestic usage. They are only for laboratory use; otherwise you may have secondary contact with toxic products.

13. Hoods

We have two types of hoods: a laminar flow cabinet with UV in the microbiome laboratory and a fume hood in the mammalian laboratory. Before and after using any of these instruments make sure you clean and organize all your material appropriately.

A.- Laminar flow cabinet with UV. Ask somebody in the lab to explain how it works. DO NOT USE this hood to perform experiments with reagents that produce toxic fumes (i.e. ethanol, chloroform...) as the fumes (or any vapor) will be expelled outside and you will put in danger everyone in the lab. When using the UV light, remember to turn it off before leaving the lab.
B.- Fume hood. Before using it, always confirm that the flow is working and that no error message is displayed. Please remember to use this hood whenever you work with any toxic reagent (i.e. ethanol, chloroform...).

14. Water baths and thermoblock

- Indicate with a post-it when you need the water bath or thermoblock for: how long, temperature, person and date (to avoid someone turning it off or changing the temperature).
- Each time you use the water bath, check that there is enough water (check the water level in relation to the minimum/maximum amount of water indicated). If water runs out the resistance of the instrument will burn and the bath will not work. For every liter of distilled water (from the green tap) add 5ml of aqua clean.
- After you use the water bath and thermoblock (and if no one is going to use it just after you), please TURN IT OFF.

15. Clothing

- When handling dangerous substances, make sure you wear gloves, laboratory coats, and safety shield or goggles (gafas de protección).
- Shorts and sandals should not be worn in the lab at any time.
- Never wear gloves outside of the lab (please remove your gloves before going into the computer room, elevator or other offices).
- Wash your hands before leaving the lab and before eating.
- Do not wear lab coats, gloves, or other personal protective clothing outside the lab areas. Note that your lab coat may have been in contact to toxic material or contaminated and you could spread the contamination.
- If you have to carry material to another part of the building use the carriage box and a maximum of 1 glove (to open doors with the other hand).

16. Lab jobs

Assigned tasks are assigned in a *lab job list* in the drive for all lab users. Please make sure that your name is in the excel list. Please note that this job list does not mean that you do not have to keep the laboratory clean and tidy each time you do any experiment.

For TC users: A monthly cleaning task is assigned on rotation among all TC users. The person in charge is responsible to keep the water bath and incubator water levels;

17. Lab meeting

- Every Thursday at 9:30 there is a lab meeting in the 345 room (3rd floor, hospital side), which is compulsory for all group members to attend. Every week a person will make a presentation of around 15min on a rotation among all group members (previous investigations / actual projects and experiments / other information you'd like to share are explained in these presentations). The lab member in charge of organizing the lab meetings will let you know with two weeks in advance when is your turn of preparing the presentation.

- Any suggestion or problems you may have and lab-related issues will be discussed in this meeting after the presentation.

18. Orders

- Reagents, tips, eppendorfs, gloves, kits and other stuff in the lab are not free or supplied magically. Ask your supervisor to which project ID your lab orders should be charged and to order your own lab stuff please fill all the required fields in the excel file available at the "comandes" folder within our shared google drive.

- Special orders made by you directly to the supplier (online orders for special designs, probes and so on). Please, ensure two points:

  1.- **Purchase order number**. You should always provide an official UPF purchase order number to the supplier in order to make sure that once your order is received at the PRBB not only it is correctly delivered to the lab but subsequently paid by the UPF administration matching it with the corresponding invoice. Cristina (cristina.fernandeza@upf.edu) provide you with a purchase order number but for that she needs to know to which project the order should be charged to, the supplier details, and the approximate cost of your order.

19. Supervision

- All new incorporations in the lab should be properly introduced to the general functioning of the lab by other more experienced lab members in the same research group within SynBio.
- Please, make sure that your PI has assigned a direct supervisor to you in the lab as your supervisor will be the direct responsible for introducing you to the other lab members and for all your actions during your first weeks.

Any additional help will be provided by our lab managers, Maria Marín (maria.marin@upf.edu) and Jessica Jaraba (jessica.jaraba@upf.edu).